



Pennant Walters

GLANLLYNFI GARTH WIND FARM

Draft Environmental Statement

Chapter 9 - Ornithology



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Appendices (see Volume 3)

Appendix Number	Appendix Title
Appendix 9A	Ornithology Baseline Report
Appendix 9B	Collision Risk Modelling

9 Ornithology

9.1 Introduction

- 9.1.1. This chapter presents the assessment of the likely significant effects of the Proposed Development with respect to ornithology, including breeding, non-breeding and migratory birds. The ornithological assessment is based on information obtained to date. It should be read in conjunction with the Proposed Development description provided in **Chapter 4: Description of the Proposed Development** and with respect to relevant parts of **Chapter 8: Biodiversity**.
- 9.1.2. This chapter describes:
- the legislation, policy and technical guidance that has informed the assessment (Section 9.2);
 - consultation and engagement that has been undertaken and how comments from consultees relating to ornithology have been addressed (Section 9.3);
 - the methods used for baseline data gathering (Section 9.4);
 - overall baseline (Section 9.5);
 - embedded measures relevant to ornithology (Section 9.6);
 - the scope of the assessment for ornithology (Section 9.7);
 - the methods used for the assessment (Section 9.8);
 - the assessment of ornithological effects (Section 9.8.2 to Section 9.16)
 - assessment of cumulative (inter-project) effects (Section 9.17);
 - a summary of the significance conclusions (Section 9.18);
 - additional measures proposed (Section 9.19);
 - ornithology residual effects assessment (Section 9.20); and
 - an outline of further work to be undertaken for the Final Environmental Statement (ES) (Section 9.21).
- 9.1.3. This chapter should be read in conjunction with the following supporting documents:
- **Appendix 9A Baseline Ornithological Report**; and
 - **Appendix 9B Bird Collision Risk Modelling Report**.

Limitations and Assumptions

- 9.1.4. The Draft ES has been produced to fulfil Pennant Walters's consultation duties and enable consultees to develop an informed view of the likely significant effects of the Project.
- 9.1.5. The majority of ornithology surveys have been undertaken in suitable weather conditions at optimum times of year with reference to best practice guidance¹⁵. Vantage Point (VP)

surveys need to be undertaken when visibility is at least two kilometres (km). VP surveys are therefore scheduled within forecasted suitable weather. Due to the positioning and height of the Development Site above sea level, micro-climate weather systems were seen to occur during some survey periods, requiring some surveys to be paused and resumed or abandoned entirely in periods of limited visibility. Where prolonged periods of poor weather impacted the ability to complete requisite hours at each VP, each month, or external factors influenced the ability to complete requisite hours (e.g. surveyor illness), additional hours of survey were undertaken at the next opportunity to fulfil survey schedules within each period. Full survey timings can be found in **Appendix 9A Baseline Ornithological Report**.

- 9.1.6. There were no VP surveys completed in April 2025 due to unforeseen circumstances. The absence of survey data in April 2025 is not seen as a significant limitation as surveys were completed on 28 March 2025 whilst additional survey effort was completed on 08 May 2025 to account for missed surveys during April 2025.
- 9.1.7. During the breeding raptor surveys in 2025, some areas of forest plantations, such as to the north-east of the Northern Array, were inaccessible due to severe wind-blow impacts resulting from storms that had affected the area over the past few years. The number and position of fallen trees, hung-up trees, lifted root plates, and debris within those areas of woodland created areas that were unsafe and too hazardous to survey safely. Areas affected by such wind damage had a more open canopy structure so woodland blocks were able to be viewed from a distance with binoculars. The lack of access for close inspection is considered unlikely to impact the results of the survey as the more open views allowed most of the trees to be surveyed for the presence of raptors and raptor nests at a distance.
- 9.1.8. Bird species are mobile and seasonal, and surveys therefore only provide a snapshot of the conditions present across the survey area at the time. The absence of evidence of any particular species from within the Development Site should therefore not be taken as conclusive proof of its current absence, or that it will not be present in the future. However, it is considered that the results of the ornithology surveys completed between 2020 and 2025 are robust and reliable for the identification of the important ornithology receptors within the Development Site and wider study area. Furthermore, where there is uncertainty regarding the status of bird species, a precautionary approach to the ornithological assessment has been adopted.
- 9.1.9. For the purposes of the assessment, important ornithological receptors of less than 'Local' geographic value have been scoped out of the ornithological assessment, unless they require further consideration owing to their legal status and/or are considered more holistically with respect to biodiversity impacts and the delivery of enhancements.
- 9.1.10. The Forestry access track is the access track that extends from the public highway to the Northern and Southern Array areas (see **Chapter 4: Development Description**). An assessment of the Forestry access track has not been undertaken as part of the Draft ES as the final design is yet to be determined. The Forestry access track will be confirmed, assessed and reported in the Final ES. This Draft ES does consider the internal access tracks within the boundaries of the Northern and Southern Arrays.

- 9.1.11. It is considered that there are no limitations relating to the collation of the ornithology baseline that significantly affect the robustness of the assessment of the potential likely significant effects of the Proposed Development.

9.2 Relevant Legislation, Planning Policy and Technical Guidance

- 9.2.1. This section identifies the legislation, planning policy and technical guidance that has informed the assessment of effects with respect to ornithology. Further information on policies relevant to the Proposed Development is provided in **Chapter 5: Legislation and Policy**.

Legislation

- 9.2.2. A summary of the relevant legislation is given in Table 9.1.

Table 9.1 Legislation relevant to the ornithology assessment

Legislation	Context
The Conservation of Habitats and Species Regulations 2017 (as amended) ¹	The Habitat Regulations transpose the Habitats Directive ² and elements of the Birds Directive ³ into English and Welsh law. The regulations provide the legislative enforcement for the protection of European sites and protect species and habitats listed in Annex I and II of the EC Habitats Directive. The Habitats Regulations make it an offence to deliberately capture, injure, kill or disturb any European Protected Species (EPS) listed in Schedule 2, or to damage or destroy a breeding site or resting place of such an animal.
Wild Birds Directive (Council Directive 79/409/ EED on the conservation of wild birds) ³	The Wild Birds Directive provides wide ranging protection for Europe's wild birds. It identifies 194 species and sub-species of wild birds that are endangered or at risk and therefore requiring additional conservation measures and consideration. The provisions of the Wild Birds Directive are transposed into UK law by means of Part I of the Wildlife and Countryside Act 1981 ⁴ (as amended) and also under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.
The Environment (Wales) Act 2016 ⁵	The Act makes provisions within Wales for the planning and managing of natural resources at national and local level. Section 6 of the Act introduces the biodiversity and resilience of ecosystems duty whereby public authorities are required to seek to maintain and enhance biodiversity so far as it is consistent with the proper exercise of those functions. Section 7 of the Act (as amended) introduces a list of living organisms and habitats in Wales, known as Priority Species and Priority Habitats, which are considered of key significance to sustain and improve biodiversity in Wales.

¹ UK Government (2017). Conservation of Habitats and Species Regulations 2017 ("the Habitats Regulations") has been amended by (inter alia) the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Available at: <https://www.legislation.gov.uk/uksi/2017/1012/contents> [Accessed June 2026].

² Council Directive 92/43/EEC on the Conservation of natural habitats and wild flora and fauna, May 1992

³ European Commission (1979). Council Directive 79/409/ EED on the conservation of wild birds. (Online) Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31979L0409&from=EN> [Accessed June 2026].

⁴ UK Government (1981). Wildlife and Countryside Act 1981. (Online) Available at: <https://www.legislation.gov.uk/ukpga/1981/69> [Accessed June 2026].

⁵ UK Government (2016). The Environment (Wales) Act 2016. (Online). Available at: <https://www.legislation.gov.uk/anaw/2016/3/contents/enacted> [Accessed June 2026].

Legislation	Context
The Wildlife and Countryside Act 1981 (as amended) (WCA) ⁶	All birds and their nests are protected under the Wildlife and Countryside Act 1981 (as amended). Under the Act it is an offence to move, damage or destroy an active nest at any part of the nesting cycle. A subset of species is listed under Schedule 1 of the Wildlife and Countryside Act and are afforded additional levels of protection that include protection from disturbance while it is building a nest or is in, on or near a nest containing eggs or young; or disturb dependent young of such a bird.
Countryside & Rights of Way Act 2000 ⁷	This Act details further measures for the management and protection of Sites of Special Scientific Interest (SSSIs) and strengthens wildlife enforcement legislation.

Planning Policy

9.2.3. A summary of the relevant national and local planning policy is given in **Table 9.2**.

Table 9.2 Planning policy relevant to the ornithology assessment

Policy	Context
National planning policy	
Future Wales: The National Plan 2040 ⁸	The Welsh national development framework sets the direction for development in Wales to 2040. Policy 9 – Resilient Ecological Networks and Green Infrastructure outlines measures to ensure the enhancement of biodiversity, the resilience of ecosystems and the provision of green infrastructure.
Planning Policy Wales, Edition 12 ⁹	Chapter 6 of Planning Policy Wales (PPW) sets out the Welsh Government's objectives for Distinctive and Natural Places. Planning policy topics covers the historic environment, landscape, biodiversity and habitats, coastal characteristics, air quality, soundscape, water services, flooding and other environmental (surface and sub-surface) risks. This latest revision (edition 12, 2024) focuses on green infrastructure; net benefit for biodiversity and the step-wise approach; protection for Sites of Special Scientific Interest (SSSI); and trees and woodland. The revision seeks to clarify Wales' intentional, diverging approach to Biodiversity Net Gain in respect of the Environment Act 2021, with a focus instead on ecosystem resilience.
Technical Advice Note 5 (TAN5) Nature Conservation and Planning ¹⁰	Technical Advice Note 5 (TAN5) supplements PPW and sets out statutory, protection-specific policies in relation to the protection of biodiversity and geological conservation through the planning system. Such policies include those receiving statutory protection under existing legislative provisions (as well as those sites, habitats and species outside such protection), and aim to ensure that the potential impacts of planning decisions on biodiversity and geological conservation are fully considered
Local planning policy	
Bridgend County Borough Local	The LDP identifies where new developments such as housing, employment, community facilities, and roads will go. It provides a framework for local

⁶ UK Government (1981). The Wildlife and Countryside Act 1981 (as amended). (Online) Available at: <https://www.legislation.gov.uk/ukpga/1981/69/contents> [Accessed June 2026].

⁷ UK Government (2000). Countryside & Rights of Way Act 2000. (Online) Available at: <https://www.legislation.gov.uk/ukpga/2000/37/contents> (Accessed April 2022).

⁸ Welsh Government (2021). Future Wales: The National Plan 2040. (Online). Available at: <https://gov.wales/future-wales-national-plan-2040> [Accessed June 2026].

⁹ Welsh Government (2024) Planning Policy Wales, Edition 12, February 2024. (Online). Available at: <https://gov.wales/planning-policy-wales> [Accessed June 2026].

¹⁰ Welsh Government, (2009). Planning Policy Wales Technical Advice Note 5: Nature Conservation and Planning. (Online) Available at: <https://gov.wales/technical-advice-note-tan-5-nature-conservation-and-planning> [Accessed June 2026].

Policy	Context
Development Plan (LDP) 2018-2033 ¹¹	decision making and brings together both development and conservation interests to ensure that any changes in the use of land are coherent and provides maximum benefits to the community.
Bridgend Biodiversity Duty Plan 2022-25 ¹²	This plan sets out the actions the Borough Council will take to meet its legal duty to maintain and enhance biodiversity, and in so doing, promote ecosystem resilience.
Bridgend County Borough Local Biodiversity Action Plan 2014 ¹³	The national strategy for biodiversity is delivered at local level via Local Biodiversity Action Plans (LBAP). Bridgend County Borough's LBAP is the driver to protect, enhance and manage the biodiversity resource, by setting out objectives, targets and actions for the conservation of biodiversity within Bridgend County Borough.

Technical Guidance

9.2.4. A summary of the technical guidance for ornithology is given in **Table 9.3**.

Table 9.3 Technical guidance relevant to the ornithology assessment

Technical guidance document	Context
Guidelines for Ecological Impact Assessment in the UK and Ireland. ¹⁴	Sets out the industry standard approach to Ecological Impact Assessment (EclA) for assessing the potential effects of a project on ecological receptors, including important ornithology receptors.
Recommended bird survey methods to inform impact assessment of onshore wind farms. ¹⁵	Sets out the industry standard for the level and type of bird surveys required to robustly inform onshore wind farm assessments, including standardised methodologies such as size of survey area, frequency of visits and timing of surveys. Following this technical guidance provides robust data which can be widely interpreted and enables Collision Risk Modelling (CRM) analysis.
Bird Monitoring Methods: A manual of techniques for key UK species. ¹⁶	This guidance sets out the standard methodologies for bird monitoring, including species-specific surveys, such as Nightjar <i>Caprimulgus europaeus</i> surveys. These methods form the basis of the approach to the ornithology assessment with any deviations discussed within the baseline report.
Raptors: a field guide to survey and monitoring (3rd Edition). ¹⁷	This guidance outlines the survey techniques that should be employed to successfully survey each of the raptor species regularly occurring in Britain. These methods form the basis of the approach to the breeding raptor assessment, with any deviations discussed within the baseline report.

¹¹ Bridgend County Borough (2018-2033). Local Development Plan (LDP): Written Statement Adopted Plan. Available online at <https://www.bridgend.gov.uk/media/pq4nmcd2/ad6-written-statement-final-version.pdf> [Accessed June 2026].

¹² Bridgend County Borough (2022-2025). Biodiversity Duty Plan. Available at: <https://www.bridgend.gov.uk/council/plans-and-strategies/biodiversity-duty-plan> [Accessed June 2026].

¹³ Bridgend County Borough Council (2014) Local Biodiversity Action Plan: Biodiversity and Ecosystem Services Assessment. Available at: <https://www.bridgend.gov.uk/council/plans-and-strategies/local-biodiversity-action-plan> [Accessed June 2026].

¹⁴ Chartered Institute of Ecology and Environmental Management (CIEEM) (2022). Guidelines for Ecological Impact Assessment in the UK and Ireland. Version 1.2. Winchester: CIEEM. Available at: <https://cieem.net/resource/guidelines-for-ecological-impact-assessment/> [Accessed June 2026].

¹⁵ NatureScot (2025). Recommended bird survey methods to inform impact assessment of onshore wind farms. Available at: <https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms> [Accessed June 2026].

¹⁶ Gilbert, G, Gibbons, D.W. & Evans, J. (1998). Bird Monitoring Methods: A manual of techniques for key UK species. RSPB, Bedfordshire.

¹⁷ Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. & Thompson, D. (2013). Raptors: a field guide to survey and monitoring (3rd Edition). The Stationery Office, Edinburgh

Technical guidance document	Context
Bird Survey Guidelines: Breeding bird survey methodology. ¹⁸	This guidance outlines the method for surveying breeding birds and are intended to provide data for assessing impacts on breeding birds. This method forms the basis of the approach to the general breeding bird survey, with any deviations discussed within the baseline report.
Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. ¹⁹	This guidance identifies distances at which disturbance could be caused by human related activities to a number of protected UK bird species during the breeding and non-breeding seasons. This guidance has informed the ornithological impact assessment and recommended mitigation measures unless otherwise specified.
Guidance on using an updated collision risk model to assess bird collision risk at onshore wind farms. ²⁰	Collision Risk Modelling (CRM) provides a quantitative estimate of the collision risk for a bird species from a proposed onshore wind farm. The aim of this guidance is to promote a standardised approach to CRM assessment for onshore wind farms, to increase the transparency of calculations and to promote greater confidence in the results.
Assessing the significance of impacts on bird populations from onshore wind farms that do not affect protected areas. ²¹	The purpose of this guidance is to assist with assessments of terrestrial wind farm proposals where potential effects do not affect notified interests or qualifying features of protected areas.
Assessing the cumulative impacts of onshore wind farms on birds. ²²	This guidance details the contribution of a proposed wind farm to cumulative impacts on notable bird species, through its potential impact on habitat availability, bird behaviour and mortality rates.
The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. ²³	Referred to in this report as BoCC 5. Provides guidance for assessing the national conservation status of bird species which breed or overwinter in the United Kingdom. Birds are assessed using a set of different objectives and attributed to either Red, Amber or Green lists subject to their current status. This has been used to inform survey and desk study approaches (i.e. to identify target species) and to inform assessment approaches.
Birds of Conservation Concern Wales 4: The population status of birds in Wales. ²⁴	Referred to in this report as BoCCW 4. This provides specific guidance with respect to the conservation status of breeding, migratory and overwintering bird populations in Wales. It follows the approach described for the UK in Birds of Conservation Concern (BoCC) 5. This has been used to inform survey and desk study approaches (i.e. to identify target species) and to inform assessment approaches.

¹⁸ Bird Survey & Assessment Steering Group (2021). Breeding Bird Survey Methodology. Available: <https://birdsurveyguidelines.org/methods/survey-method> [Accessed June 2026].

¹⁹ Goodship, N.M. and Furness, R.W. (MacArthur Green) (2022). Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283.

²⁰ NatureScot (2024) Guidance on using an updated collision risk model to assess bird collision risk at onshore wind farms Available at <https://www.nature.scot/doc/guidance-using-updated-collision-risk-model-assess-bird-collision-risk-onshore-wind-farms> [Accessed June 2026]

²¹ NatureScot (2025) Guidance note - Assessing the significance of impacts on bird populations from onshore wind farms that do not affect protected areas Available at <https://www.nature.scot/doc/guidance-note-assessing-significance-impacts-bird-populations-onshore-wind-farms-do-not-affect> [Accessed June 2026]

²² NatureScot (2025) Guidance - Assessing the cumulative impacts of onshore wind farms on birds Available at <https://www.nature.scot/doc/guidance-assessing-cumulative-impacts-onshore-wind-farms-birds> [Accessed June 2026]

²³ Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds 114: 723-747.

²⁴ Johnstone, I.G., Hughes, J., Balmer, D.E., Brenchley, A., Facey, R.J., Lindley, P.J., Noble, D.G. and Taylor, R.C. (2024). Birds of Conservation Concern Wales 4: the population status of birds in Wales. Milvus: the Journal of the Welsh Ornithological Society. Available at: <https://tinyurl.com/BoCCW4>

9.3 Consultation and Engagement

Overview

- 9.3.1. The assessment has been informed by consultation responses and ongoing stakeholder engagement. An overview of the approach to consultation is provided in **Section 2.4 of Chapter 2: Approach to EIA**.

Scoping Opinion

- 9.3.2. A Scoping Direction was issued by the Planning and Environment Decisions Wales (PEDW), on behalf of the Welsh Ministers, on 12 June 2026 (reference: DNS CAS-04687-J2G4Q0 - Glanllynfi Garth Wind Farm). A summary of the relevant responses received in the Scoping Opinion in relation to ornithology and confirmation of how these have been addressed within the assessment to date is presented in **Table 9.4**.

Table 9.4 Summary of EIA Scoping Direction Responses for ornithology

Comment ID in Scoping Direction	Consultee	Consideration	How addressed in this Draft ES
ID.42	PEDW	<u>Section 7 list of species</u> On 20 March 2026, a revision was published of the Section 7 list of species and habitats²⁵ under the Environment (Wales) Act 2016. The Applicant should liaise directly with relevant Planning Authorities and Natural Resources Wales (NRW) to ensure that the ES accounts for the updated Section 7 list, and that significant effects on all necessary species are reported in the ES.	The Target Species (see Paragraph 9.4.12) and Secondary Species (see Paragraph 9.4.13) of the ornithological impact assessment, account for the new species added to the Section 7 list.
ID.43	NRW	<u>Scope of ornithological surveys</u> NRW advises that the proposed suite of ornithological surveys is appropriate for the nature of the scheme and welcomes the proposed two years of VP surveys. NRW agrees with the overall assessment approach and the ornithological receptors proposed to be scoped in and out. The ES should present the full survey methodology, survey effort and results, and demonstrate that surveys have been undertaken in accordance with current guidance and best practice.	This Draft ES presents the full survey methodologies undertaken and demonstrates that surveys have been undertaken in accordance with current guidance and best practice survey (see Appendix 9A Baseline Ornithological Report). This Draft ES presents the survey effort and results to date (see Section 9.5 Overall Baseline). At the time of issue of the Draft ES, the ornithological surveys are ongoing and not yet complete. The Final ES will present the complete survey effort and results.

²⁵ Welsh Government (2026). Section 7 list: species and habitats of principal importance in Wales. Available: <https://www.gov.wales/section-7-list-species-and-habitats-principal-importance-wales> [Accessed June 2026].

Comment ID in Scoping Direction	Consultee	Consideration	How addressed in this Draft ES
ID.44	NRW and PEDW	<u>Importance of ornithological receptors</u> NRW advises that the determination of species and population importance should refer to Wales-specific resources and population estimates, including Birds of Wales / Adar Cymru, UK Rare Breeding Birds Panel publications, County Birds Reports and Welsh Birds Reports. PEDW expects the ES to clearly explain the geographical importance of each receptor and justify the valuation methodology adopted.	This Draft ES determines species and population importance (see Section 9.7 Scope of the Assessment) using Wales-specific resources and population estimates including: Rare Breeding Birds in the UK²⁶; Estimating the Sizes of Breeding Populations of Birds in Wales²⁷; The Welsh Bird Report²⁸; Guidelines for the Selection of Wildlife Sites in South Wales;²⁹ and the most recent East Glamorgan Bird Report (2024)³⁰.
ID.45	PEDW	<u>Collision risk, displacement and barrier effects</u> PEDW expects the ES to assess the potential effects of the development on ornithological receptors during construction, operation, and decommissioning, including collision risk, displacement, disturbance, habitat loss and barrier effects where relevant. The assessment should clearly identify significant effects and explain the evidence used to determine significance.	The considerations listed are addressed in Section 9.8.2 to Section 9.16.
ID.46	NRW	<u>Mitigation and enhancement measures</u> NRW advises that details of appropriate mitigation should be provided for any significant effects identified, following the mitigation hierarchy and stepwise approach set out in Planning Policy Wales⁹. Where appropriate, mitigation may include seasonal restrictions on construction activities, habitat management measures, turbine micro-siting or operational measures. The effectiveness of mitigation should be demonstrated within the ES.	A range of environmental measures have been embedded into the Proposed Development as outlined in Section 9.6. The effectiveness of these embedded measures is assessed within Section 9.8.2 to Section 9.16. No significant effects were identified in the ornithological assessment and therefore additional mitigation measures are not required.

²⁶ Rare Breeding Bird Panel (2022) Rare Breeding Birds in the UK in 2022. British Birds, November 2024, Vol.117, p585– 660. Available at: <https://rbbp.org.uk/wp-content/uploads/2025/09/rbbp-report-2022.pdf> [Accessed July 2026].

²⁷ Hughes, J., Spence, I. M, Gillings, S. (2020) Estimating the sizes of breeding populations of birds in Wales. British Trust for Ornithology, The Nunnery, Thetford, Norfolk, IP24 2PU

²⁸ Hughes, J. (2022). Welsh Bird Report. Welsh Ornithological Society. Available at: <https://birds.wales/welsh-bird-report> [Accessed June 2026].

²⁹ The South Wales Wildlife Sites Partnership (2004) Guidelines for the Selection of Wildlife Sites in South Wales. Available at: <https://www.rctcbc.gov.uk/EN/Resident/PlanningandBuildingControl/LocalDevelopmentPlans/LDPEvidenceBaseLibraryandAnnualMonitoringRe/RelatedDocumentsLibrary/SEW5.pdf> [Accessed July 2026].

³⁰ Glamorgan Bird Club (2024). East Glamorgan Bird Report. Available at: <https://glamorganbirds.org.uk/annual-report> [Accessed June 2026].

Comment ID in Scoping Direction	Consultee	Consideration	How addressed in this Draft ES
ID.47	PEDW	<u>Cumulative effects</u> PEDW expects the ES to assess the cumulative effects on ornithological receptors arising from the proposed development in combination with other relevant developments. The assessment should consider cumulative collision risk, displacement and habitat loss where relevant and explain the methodology adopted.	Cumulative effects are assessed in Section 9.17 .
ID.48	Bridgend County Borough Council	<u>Habitats supporting bird population</u> BCBC notes the ecological importance of habitats within and adjacent to the Development Site. The ES should clearly describe habitats used by breeding, wintering, and foraging birds and explain how habitat availability has informed the assessment of ornithological receptors and likely effects.	The habitats utilised by notable species are detailed in Section 9.5 . Habitat availability has informed the assessment of likely effects in Section 9.8.2 to Section 9.16 .

Technical Engagement

- 9.3.3. Technical engagement with consultees in relation to ornithology is ongoing. A summary of the technical engagement undertaken to date is outlined in **Table 9.5**.

Table 9.5 Technical engagement on the ornithological assessment

Consultee	Consideration	How addressed in this Draft ES
Bridgend County Borough Council	In May 2026, WSP consulted Bridgend County Borough Council on whether they expected a second year of breeding Nightjar surveys to be completed, considering that the recently updated Section 7 list omits Nightjar.	As of July 2026, WSP did not receive a response. Therefore, considering Nightjar is still listed on Annex 1 of the Bird Directive and that their breeding success can vary year to year depending on weather conditions, a second year of breeding Nightjar surveys was completed (See Paragraph 9.4.28).

9.4 Data Gathering Methodology

Study Area

- 9.4.1. The ornithological assessment was informed by a desk study and field surveys covering the Study Area, designed to cover the potential Zones of Influence (ZoI) of the Proposed Development, while providing contextual information to assist with determining and evaluating the baseline. For the purposes of this Draft ES, the 'Development Site' refers to

the Northern Array, Southern Array and NGED Connection and excludes the Forestry access track that extends northwards (see **Chapter 4: Development Description**).

- 9.4.2. The Study Area for the ornithology assessment can be broadly split into two categories: desk-based assessment, and survey work.
- 9.4.3. The Study Area for the desk-based assessment varied according to the importance of the feature, ranging from 20 km from the Development Site for internationally designated sites down to 2 km for non-statutory sites. Full details of the desk-based assessment are found within **Appendix 9A Baseline Ornithological Report**.
- 9.4.4. The Study Area for the surveys (survey area) was informed by best practice guidance and varied subject to the mobility, habitat suitability and sensitivity of the species/species-group being surveyed. Survey areas comprise:
- VP survey area – the VP locations including 2 km viewsheds that provides coverage of the Development Site and an additional 500 m buffer;
 - breeding raptor survey area - the Development Site plus a 2 km buffer for surveying Red Kite *Milvus milvus* and Peregrine *Falco peregrinus* and a 1 km buffer for surveying Goshawk *Accipiter gentilis* and Kestrel *Falco tinnunculus*;
 - Nightjar survey area – the Development Site plus a 500 m buffer;
 - general breeding bird survey area – the Development Site plus a 100 m buffer; and
 - non-breeding bird survey area – the Development Site plus a 500 m buffer.
- 9.4.5. The survey areas are mapped within Appendix 9A Baseline Ornithological Report.

Desk Study

- 9.4.6. A desk was undertaken in January 2025 to obtain the following data:
- internationally designated statutory sites (Special Protected Areas (SPA) and Ramsar Sites) of ornithological importance within 20 km of the Development Site;
 - nationally designated statutory sites (Site of Special Scientific Interest (SSSI), National Nature Reserves (NNR) of ornithological importance within 10 km of the Development Site;
 - other statutory and non-statutory sites (e.g. Sites of Importance for Nature Conservation (SINCs)) of ornithological interest within 2 km of the Development Site; and
 - records of protected and/or notable bird species within 2 km of the Development Site.
- 9.4.7. A summary of the organisations that have supplied data, together with the nature of those data is outlined in **Table 9.6**.

Table 9.6 Data sources used to inform the ornithological assessment

Organisation	Data source	Data provided
South East Wales Biological Record Centre (SEWBRcC)	Biological record centre request	Non-statutory site descriptions and designations, protected habitats of ornithological importance and ornithological species data.

Organisation	Data source	Data provided
NRW	Designated Site Search ³¹	Information on protected site designations for sites of importance to ornithology and protected species information.
Multi-Agency Geographic Information for the Countryside (MAGIC)	Interactive website ³²	Spatial information of statutory designated sites within the Study Area
Joint Nature Conservation Committee (JNCC)	Interactive website ³³	Details of statutory site designations including reasons for designation, condition of designated areas and 'features' of designations.

- 9.4.8. The desk study also included a review of major infrastructure applications (under the DNS or Infrastructure Consent Order (ICO) regimes) within the vicinity of the Proposed Development, including other wind farm proposals where the Ornithology information is publicly available from the relevant planning portal. These projects are detailed in **Section 9.17 Assessment of Cumulative (Inter-project) Effects**.

Identification of Target Species

- 9.4.9. With reference to best practice guidance¹⁵, the surveys and assessment focus on 'Target Species' drawn from the following lists:
- Annex I within the Directive 2009/147/EC on the conservation of wild birds, commonly referred to as "the Birds Directive"³;
 - Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)⁶;
 - Section 7 of the Environment (Wales) Act 2016 (as amended)⁵;
 - Red list of Birds of Conservation Concern UK Version 5 (BoCC5)²³; and
 - Red list of Birds of Conservation Concern Wales Version 4 (BoCCW4)²⁴.
- 9.4.10. Species contained within these lists that by virtue of their breeding, roosting, feeding or migrating behaviour may be sensitive to the Proposed Development have been identified as Target Species for assessment purposes.
- 9.4.11. Following best practice guidance¹⁵, passerine species have been scoped out as Target Species to be included within the ornithology impact assessment, except where significant habitat loss/disturbance impacts could potentially arise during vegetation clearance, construction and decommissioning. This is because such species are generally not considered to be at risk of impacts from the operational turbines. This approach was set out in the Scoping Report³⁴ and NRW agreed³⁵ with the ornithological receptors proposed to be scoped in and out.
- 9.4.12. Target Species for the ornithological assessment are defined as:
- all wildfowl (excluding feral or very common species such Canada Goose *Branta canadensis*, Greylag Goose *Anser anser* and Mallard *Anas platyrhynchos*);

³¹ Natural Resources Wales (2026). Find protected areas of land and sea. (Online) Available at: <https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/protected-areas-of-land-and-sea/find-protected-areas-of-land-and-sea/?lang=en> [Accessed June 2026].

³² Defra. Magic (Online). Available at: <https://magic.defra.gov.uk/> [Accessed June 2026].

³³ Joint Nature Conservation Committee (2026). Homepage. (Online) Available at: <https://jncc.gov.uk/> [Accessed June 2026].

³⁴ WSP (2026) Glanllynfi Garth Scoping Report.

³⁵ PEDW (2026) Glanllynfi Garth Wind Farm - EIA Scoping Direction

- raptors, owls and waders included in the lists in **Paragraph 9.4.9**; and
- other notable species including: Long-eared Owl *Asio otus* and Nightjar.

9.4.13. As per the guidance¹⁵, consideration will also be given to ‘Secondary Species’; those species that do not qualify as Target species but are of regional conservation concern. Recording of Secondary Species is subsidiary to recording of Target Species. Secondary Species are defined as:

- all species included in the lists in **Paragraph 9.4.9**;
- all raptors;
- all owls;
- all waterfowl;
- all waders;
- all gulls; and
- Raven *Corvus corax*.

Survey Work

- 9.4.14. Initial bird scoping exercises were completed in September 2024 to identify the suitability of habitats within the Development Site and a 2 km buffer for potential Target Species and to ground-truth VP locations following initial desk-based data collation and viewshed analysis. Viewshed analysis is a desk-based task using topographical data to map the areas visible from any potential VP.
- 9.4.15. The initial bird scoping site visits, alongside the desk study, were used to identify the potential Target Species and the appropriate scope of survey work. The scope of ornithology surveys was confirmed with NRW through the scoping process.
- 9.4.16. The ornithological field survey programme has been designed to provide sufficient information on the Target Species and Secondary Species likely to be affected by the Proposed Development. The following section outlines surveys being undertaken within the ornithological survey programme and the rationale and scope for each survey type. The full methodology of the surveys can be found in **Appendix 9A Baseline Ornithological Report**.

VP Surveys

- 9.4.17. VP surveys are being conducted in accordance with NatureScot guidance¹⁵ and are being undertaken over two consecutive years. The VP surveys commenced in October 2024 and will be completed in September 2026.
- 9.4.18. Following the NatureScot methodology, VPs were chosen to achieve maximum visibility from the minimum number of locations, such that all parts of the survey area are within 2 km of a VP location. Four vantage points were identified to cover the survey area. After the completion of the first year of VP surveys in September 2025, the location of two of the VPs was slightly changed in response to receiving updated turbine specifications and locations. The locations of each VP and VP view-shed are shown in **Figures 9A.2 to 9A.5** in **Appendix 9A Baseline Ornithological Report**.

- 9.4.19. The VP surveys cover the breeding seasons (April to September) and non-breeding seasons (October to March).
- 9.4.20. In order to quantify the potential collision risk associated with the Proposed Development, each of the four VPs will receive a total of 144 hours of survey over two years (six hours each month) upon completion in September 2026.
- 9.4.21. All flights of Target Species within a 2 km viewshed are being recorded (Target Species defined in **Paragraph 9.4.12**). Surveyors are recording the approximate route, duration and height of each flight to enable analysis using Collision Risk Modelling (CRM). Target Species flight heights are recorded at 15 second intervals. Based on the turbine specifications, the following core height bands are being used, with Bands B and C within the collision risk zone:
- A: 0-15m;
 - B: 15-100m;
 - C: 100-200m; and
 - D: >200m.
- 9.4.22. The outputs of the CRM analysis of the data collected between October 2024 and March 2026 are presented in **Appendix 9B Bird Collision Risk Modelling Report**.

Breeding Raptor Surveys

- 9.4.23. Following analysis of the data from the desk study, habitat scoping site visits and the ongoing VP surveys, the following notable raptor species were identified as having potential to breed on the Development Site or in the immediate surrounding area: Goshawk, Red Kite, Peregrine and Kestrel.
- 9.4.24. Dedicated surveys for breeding raptors followed the survey guidelines¹⁷ and were conducted between March and July in 2025 and 2026. The surveys aimed to identify active nests within a 1km buffer for Goshawk and Kestrel and 2km buffer for Red Kite and Peregrine (where access was available).
- 9.4.25. The survey effort comprised four Site visits each breeding season and used a combination of informal VP watches to identify potential nest locations, dedicated searching for nests and monitoring of any identified nests.
- 9.4.26. All raptor surveys were completed by staff holding a relevant Schedule 1 licence from Natural Resources Wales.

Breeding Nightjar Surveys

- 9.4.27. Following analysis of the data from the desk study and habitat scoping site visits, Nightjar were identified as having potential to breed in habitat adjacent to the Development Site.
- 9.4.28. Nightjar-specific surveys were completed in June and July in 2025 and have recently been completed in July 2026. The surveys focused on areas of suitable habitat within the Development Site and within a buffer of 500m.
- 9.4.29. The Nightjar surveys followed the survey guidelines¹⁶, aiming to identify churring males to estimate the number of territories present in the survey area. Transects and VPs were

identified within areas of clear-fell and young plantation woodland. Survey visits were shortly after sunset and before sunrise.

General Breeding Bird Surveys

- 9.4.30. A breeding bird survey was undertaken following a methodology consistent with the Bird Survey Guidelines¹⁸ to collect data on the breeding bird assemblage within the Development Site and a 100m buffer. These guidelines were selected instead of the moorland breeding bird survey³⁶ method recommended within the NS guidance¹⁵, because the survey area of the Development Site includes woodland habitats that are better suited to survey following the Bird Survey Guidelines.
- 9.4.31. Six site visits were undertaken between late March and early July 2026 during which surveyors completed a full walkover of the Development Site and an additional 100m buffer (where access was available).
- 9.4.32. Five of the survey visits started at dawn while one survey visit was timed around dusk, as per the guidelines¹⁸. During the survey visits, every bird detected (visually and/or aurally) was mapped and the species, number of individuals, sex and behaviour recorded.
- 9.4.33. These data will be used to estimate the breeding densities, distribution and overall number of territories of each species within the survey area. The final bird survey visit was completed in July 2026; full analysis of the data, such as territory mapping has therefore not yet been completed but will be presented in the Final ES.

Winter Walkover Surveys

- 9.4.34. Winter walkover surveys were undertaken following the British Trust for Ornithology Farmland Bird Survey³⁷ and other walkover survey methods¹⁶ that were adapted to the upland Development Site.
- 9.4.35. Monthly Site visits were undertaken between October 2024 and March 2025 and between October 2025 and March 2026 to record Target Species and Secondary Species on the Development Site and within a 500m buffer where appropriate.
- 9.4.36. These surveys were completed to collect data on how wintering Target Species and Secondary Species utilise the Development Site, especially wintering waders, that may not be picked up during VP surveys.

Surveys and Species Scoped Out

- 9.4.37. In light of the desk study findings, habitats present, initial survey findings and nature of the Proposed Development, certain bird surveys were scoped out of assessment early on in the survey programme. These surveys and the justification for scoping them out is summarised in **Table 9.7**.

³⁶ A. F. Brown & K. B. Shepherd (1993) A method for censusing upland breeding waders, Bird Study, 40:3, 189-195

³⁷ Atkinson, P.W., Fuller, R.J., Gillings, S. & Vickery, J.A. 2006. A detailed assessment of the Pilot Survey: Counting birds on farmland in winter. Bird Study 53: 303-309.

Table 9.7 Ornithology surveys scoped out

Receptor/Survey	Reason for Scoping Out
Woodland and waterbody point count surveys	Woodland and waterbody point count surveys have been scoped out given the absence of notable waterbodies within the Development Site and lack of anticipated woodland impacts. It was considered that the winter walkover surveys would identify any overwintering/migratory waterfowl or waders using the ponds adjacent to the Development Site (the baseline surveys identified no waterfowl or wader activity on the waterbodies, see Appendix 9A). Woodland Target Species, such as raptors, would be identified through specific survey methods covering these species (the baseline surveys identified raptor activity within the woodland, see Appendix 9A). In addition, VP surveys will capture any pertinent movements of Target Species across the Development Site from or to such features in the wider landscape. No turbines are proposed in the woodland habitats.
Black Grouse <i>Lyrurus tetrix</i> surveys	There is an absence of records of Black Grouse from the desk study and there is limited suitable habitat within the Development Site boundary. The BTO Bird Atlas 2007-11 ³⁸ does not show any records of this species in south Wales.
Barn Owl <i>Tyto alba</i> surveys	No suitable nesting habitat has been identified within or adjacent to the Development Site as there are no buildings present and the adjacent woodland and trees comprise entirely of coniferous plantation.
Targeted Hen Harrier <i>Circus cyaneus</i> or Short-eared Owl <i>Asio flammeus</i> surveys	There is a limited extent of suitable habitat for these species within the Development Site boundary and an absence of records of Short-Eared Owl from the desk study or ongoing Site surveys. There are very limited records of Hen Harrier passing through Site during VP surveys in winter and the BTO Bird Atlas 2007-11 ³⁸ does not show any records of this species in south Wales.

9.5 Overall Baseline

Current Baseline

- 9.5.1. The full survey findings and corresponding figures are set out in **Appendix 9A Baseline Ornithological Report** and summarised below.

Statutory Sites of Ornithological Interest

- 9.5.2. There are no internationally designated statutory sites that are designated for ornithological features within 20 km of the Development Site.
- 9.5.3. There are two nationally designated statutory sites within 10 km of the Development Site that list ornithological features, detailed in **Table 9.8**.

³⁸ Bird Atlas 2007–11 is: Balmer, D.E., Gillings, S., Caffrey, B.J., Swann, R.L., Downie, I.S. & Fuller, R.J. 2013. Bird Atlas 2007–11: the breeding and wintering birds of Britain and Ireland. BTO Books, Thetford.

Table 9.8 National statutory sites designated for ornithological features within 10 km of the Development Site

Site name	Type of designation	Designated features	Approximate distance and direction from the Development Site
Mynydd Ty-isaf	SSSI	The higher crags within the SSSI provide nesting sites for a Schedule 1 raptor.	5.07 km north-east
Eglwys Nunydd Reservoir	SSSI	The reservoir attracts large numbers of wintering waterfowl and passage migrants. Notable breeding species including Great Crested Grebe <i>Podiceps cristatus</i> , Little Grebe <i>Tachybaptus ruficollis</i> , Mallard, Gadwall <i>Mareca strepera</i> and Coot <i>Fulica atra</i> .	9.63 km south-west

9.5.4. These SSSIs are mapped in Figure 9A.12 in Appendix 9A Baseline Ornithological Report.

Non-statutory Sites of Ornithological Interest

9.5.5. There are two non-statutory sites within 2 km of the Development Site that list ornithological features, as detailed in **Table 9.9**.

Table 9.9 Non-statutory sites designated for ornithological features within 2 km of the Development Site

Site name	Type of designation	Designated features	Approximate distance and direction from the Development Site
Lletty Brongu	SINC	The site includes ancient woodland and wet valley bottom. The site supports rare breeding birds such as Kingfisher <i>Alcedo atthis</i> and Dipper <i>Cinclus cinclus</i> .	1.19 km south-west
Tylacoch South	SINC	The site comprises woodland, scrub and grassland and supports rare breeding birds.	1.35 km south

9.5.6. The SINCS are mapped in Figure 9A.13 in Appendix 9A Baseline Ornithological Report.

Records of Target Species and Secondary Species

- 9.5.7. The desk study returned 1,101 records of Target and Secondary bird species from the last 10 years within 2 km of the Development Site, as listed in **Appendix 9A Baseline Ornithological Report** and referenced where appropriate in this ornithological assessment.

Target Species Accounts

- 9.5.8. A summary of the activity recorded across the suite of bird surveys grouped by species is summarised in **Table 9.10**. Full species accounts, including information such as flight-line data, is provided in **Appendix 9A Baseline Ornithological Report**.

Table 9.10 Target Species within the survey area

Species	Conservation / Protection Status³⁹	Key Survey Findings
Golden Plover <i>Pluvialis apricaria</i>	BDir1, S7, WBR	Non-breeding winter visitor. Golden Plover were recorded on nine occasions within the survey area between September and March. Eight of these records were within the Northern Array and were of flocks of between 13 and 150 birds roosting on the shorter grassland in the centre of the Northern Array or circling overhead. There was one record in January 2025 of two Golden Plover on the grassland in the east of the Southern Array.
Curlew <i>Numenius arquata</i>	S7, UKBR, WBR	Passage migrant. In the survey area, a single Curlew was recorded once in September 2025 flying southwards over the Southern Array, presumably migrating over the Development Site.
Nightjar <i>Caprimulgus europaeus</i>	BDir1	Breeding summer visitor. In 2025, seven territories were identified within 500 m of the Development Site within young plantation, clear-fell and scattered scrub to the north of the Northern Array and to the east and north-east of the Southern Array. No individuals were recorded within the Development Site boundary. The 2026 surveys were completed in July 2026 and the results have not yet been included in the baseline report. A peak of twelve churring males was recorded within 500 m of the Development Site, within young plantation, clear-fell and

³⁹ BDir1 = Annex I within the Directive 2009/147/EC on the conservation of wild birds, commonly referred to as “the Birds Directive”

S7 = Section 7 of the Environment (Wales) Act 2016

UKBR = Red list of Birds of Conservation Concern UK Version 5

WBR = Red list of Birds of Conservation Concern Wales Version 4

WCA1 = Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)

Species	Conservation / Protection Status ³⁹	Key Survey Findings
		scrub to the north and to the south-east of the Northern Array and to the north-east of the Southern Array. The closest churring male was recorded approximately 65 m north of the Northern Array.
Goshawk <i>Accipiter gentilis</i>	WCA1	Non-breeding resident. Goshawk were recorded infrequently within the survey area throughout the non-breeding season and breeding season. Most flights were recorded in the valley between the Northern Array and Southern Array, though there were also records of Goshawk flying within the Development Site boundary, mostly limited to the edges close to the woodland habitats that this species favours. Up to two birds were recorded at any one time, although the majority of records relate to single birds soaring and hunting. Male, female and juvenile birds were recorded. Suitable nesting habitat for Goshawk was identified to the north-east of the Northern Array, to the north-east of the Southern Array and between the Arrays. However, no nest sites were identified within the survey area during 2025 or 2026.
Hen Harrier <i>Circus cyaneus</i>	BDir1, WCA1, S7, UKBR, WBR	Infrequent winter visitor in the survey area. Recorded on four occasions between November and February. Male and female both recorded, all flights recorded were brief.
Red Kite <i>Milvus milvus</i>	BDir1, WCA1	Non-breeding resident. Red Kite were regularly recorded every month flying throughout the survey area and occasionally landing briefly to scavenge. Up to four birds were recorded at any one time, although the majority of records relate to single birds. Adults and juveniles were recorded. No nest sites were identified within the survey area in either 2025 or 2026.
Kestrel <i>Falco tinnunculus</i>	S7	Non-breeding resident. Kestrel were recorded hunting frequently between July and March within the survey area. They were most frequently recorded within the rough grassland in the Northern Array. Up to two birds were recorded at once, though the majority of records were of single birds. No nest sites were identified within the survey area in either 2025 or 2026.

Species	Conservation / Protection Status ³⁹	Key Survey Findings
Hobby <i>Falco subbuteo</i>	WCA1	Passage migrant. Within the survey area, a single Hobby was briefly recorded once in August 2025 flying north over the Northern Array. The record may have been of a passage migrant attracted to the large numbers of Swallows <i>Hirundo rustica</i> foraging over the Development Site at the time.
Peregrine <i>Falco peregrinus</i>	BDir1, WCA1	Non-breeding resident. During VP surveys Peregrine were recorded infrequently during the non-breeding season and breeding season. Up to two birds were recorded at once, though the majority of records were of single birds. No nest sites were identified within 2 km of the Development Site in either 2025 or 2026, though an active nest site was identified 3 km away.

Breeding Bird Assemblage

- 9.5.9. The final general breeding bird survey visit was completed in July 2026 and territory mapping is yet to be completed. However, data from five of the six visits have been analysed and two distinct breeding bird assemblages within the survey area have been identified: one within the open grassland and grass-heath habitats that cover the entire Development Site and the other within the coniferous plantation woodland, clear-fell and scrub adjacent to the Development Site.
- 9.5.10. **Table 9.11** lists the Target Species and Secondary Species identified on at least two occasions during the general breeding bird surveys within the grassland and grass-heath habitats of the survey area. Birds that only flew over the survey area and did not land are not included.
- 9.5.11. More details and territory mapping will be included in the appendices of the Final ES.

Table 9.11 Target Species and Secondary Species identified in the breeding season within the grassland and grass-heath habitats

Common Name	Scientific Name	Conservation / Protection Status ⁴⁰
Cuckoo	<i>Cuculus canorus</i>	S7, UKBR, WBR
Skylark	<i>Alauda arvensis</i>	S7, UKBR
Wheatear	<i>Oenanthe oenanthe</i>	S7

⁴⁰ S7 = Section 7 of the Environment (Wales) Act 2016

UKBR = Red list of Birds of Conservation Concern UK Version 5

WBR = Red list of Birds of Conservation Concern Wales Version 4

Common Name	Scientific Name	Conservation / Protection Status ⁴⁰
Meadow Pipit	<i>Anthus pratensis</i>	S7, WBR
Linnet	<i>Linaria cannabina</i>	S7, UKBR, WBR

9.5.12. **Table 9.12** lists the Target Species and Secondary Species identified on at least two occasions during the general breeding bird surveys or Nightjar surveys within the woodland, clear-fell and scrub adjacent to the Development Site. Birds that only flew over the survey area and did not land are not included.

Table 9.12 Target Species and Secondary Species identified in the breeding season within the woodland, clear-fell and scrub

Common Name	Scientific Name	Conservation / Protection Status ⁴¹
Nightjar	<i>Caprimulgus europaeus</i>	BDir1
Green Woodpecker	<i>Picus viridis</i>	S7
Coal Tit	<i>Periparus ater</i>	S7
Willow Warbler	<i>Phylloscopus trochilus</i>	S7, WBR
Whitethroat	<i>Curruca communis</i>	S7, WBR
Firecrest	<i>Regulus ignicapillus</i>	WCA1, S7, UKBR.
Goldcrest	<i>Regulus regulus</i>	S7, WBR
Mistle Thrush	<i>Turdus viscivorus</i>	S7, UKBR
Song Thrush	<i>Turdus philomelos</i>	S7
Dunnock	<i>Prunella modularis</i>	S7
Chaffinch	<i>Fringilla coelebs</i>	S7
Bullfinch	<i>Pyrrhula pyrrhula</i>	S7
Crossbill	<i>Loxia curvirostra</i>	WCA1

⁴¹ BDir1 = Annex I within the Directive 2009/147/EC on the conservation of wild birds, commonly referred to as “the Birds Directive”

S7 = Section 7 of the Environment (Wales) Act 2016

UKBR = Red list of Birds of Conservation Concern UK Version 5

WBR = Red list of Birds of Conservation Concern Wales Version 4

WCA1 = Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)

Wintering and Passage Bird Assemblage

- 9.5.13. The winter walkover surveys and the VP surveys also recorded two distinct assemblages during the non-breeding season within the survey area: one within the open grassland and grass-heath habitats that cover the entire Development Site and the other within the plantation woodland, clear-fell and scrub adjacent to the Development Site.
- 9.5.14. **Table 9.13** Target Species and Secondary Species identified in the non-breeding season within the grassland and grass-heath habitats lists the Target Species and Secondary Species identified during the non-breeding season within the grassland and heathland habitats of the survey area.

Table 9.13 Target Species and Secondary Species identified in the non-breeding season within the grassland and grass-heath habitats

Common Name	Scientific Name	Conservation / Protection Status ⁴²	Peak Count	Observations
Golden Plover	<i>Pluvialis apricaria</i>	BDir1, S7, WBR	150	Golden Plover were recorded on nine occasions within the survey area between September and March. Eight of these records were within the Northern Array and were of flocks of between 13 and 150 birds roosting on the shorter grassland in the centre of the Northern Array or circling overhead. There was one record in January 2025 of two Golden Plover on the grassland in the east of the Southern Array.
Snipe	<i>Gallinago gallinago</i>	S7	2	Recorded rarely in the Northern Array and Southern Array in rough grassland and grass-heath.
Herring Gull	<i>Larus argentatus</i>	S7, UKBR, WBR	10	Recorded occasionally flying over the Northern Array and Southern Array.
Great Black-backed Gull	<i>Larus marinus</i>	S7	1	Recorded rarely flying over the Northern Array and Southern Array.
Lesser Black-backed Gull	<i>Larus fuscus</i>	S7	2	Recorded rarely flying over the Northern Array and Southern Array.

⁴² S7 = Section 7 of the Environment (Wales) Act 2016

UKBR = Red list of Birds of Conservation Concern UK Version 5

WBR = Red list of Birds of Conservation Concern Wales Version 4

Common Name	Scientific Name	Conservation / Protection Status ⁴²	Peak Count	Observations
Cormorant	<i>Phalacrocorax carbo</i>	None	1	Recorded on one occasion flying over the Northern Array.
Hen Harrier	<i>Circus cyaneus</i>	BDir1, WCA1, S7, UKBR, WBR	1	Recorded on four occasions between November and February flying over the Northern Array and Southern Array. Male and female both recorded, all flights recorded were brief.
Red Kite	<i>Milvus milvus</i>	BDir1, WCA1	4	Regularly recorded flying throughout the survey area and occasionally landing briefly to scavenge.
Buzzard	<i>Buteo buteo</i>	None	8	Regularly recorded flying throughout the survey area.
Kestrel	<i>Falco tinnunculus</i>	S7	2	Kestrel were recorded hunting frequently within the survey area. They were most frequently recorded within the rough grassland in the Northern Array.
Peregrine	<i>Falco peregrinus</i>	BDir1, WCA1	2	Peregrine were recorded infrequently flying over the Northern Array and Southern Array.
Raven	<i>Corvus corax</i>	None	11	Regularly recorded flying over the Northern Array and Southern Array and occasionally landing.
Skylark	<i>Alauda arvensis</i>	S7, UKBR	38	Very regularly recorded throughout the survey area.
Starling	<i>Sturnus vulgaris</i>	S7, WBR, UKBR	850	Flocks frequently recorded foraging on the short grassland in the Southern Array.
Mistle Thrush	<i>Turdus viscivorus</i>	S7, UKBR	9	Frequently recorded in the Northern Array and Southern Array.
Redwing	<i>Turdus iliacus</i>	WCA1	20	Occasionally recorded foraging in the Southern Array.
Fieldfare	<i>Turdus pilaris</i>	WCA1, S7, UKBR	20	Occasionally recorded foraging in the Southern Array.
Meadow Pipit	<i>Anthus pratensis</i>	S7, WBR	72	Very regularly recorded throughout the survey area.

Common Name	Scientific Name	Conservation / Protection Status ⁴²	Peak Count	Observations
Linnet	<i>Linaria cannabina</i>	S7, UKBR, WBR	6	Sporadically recorded throughout the survey area.

9.5.15. **Table 9.14** lists the Target Species and Secondary Species identified during the non-breeding season within the woodland, clear-fell and scrub adjacent to the Development Site.

Table 9.14 Target Species and Secondary Species identified in the non-breeding season within the woodland, clear-fell and scrub⁴³

Common Name	Scientific Name	Conservation / Protection Status ⁴⁴	Peak Count	Observations
Sparrowhawk	<i>Accipiter nisus</i>	None	1	Occasionally recorded hunting in woodland adjacent to the Northern Array and Southern Array.
Goshawk	<i>Accipiter gentilis</i>	WCA1	2	Recorded infrequently within the survey area. Most flights were recorded in the valley between the Northern Array and Southern Array, though there were also records of Goshawk flying within the Development Site boundary, mostly limited to the edges close to the woodland habitats that this species favours.
Buzzard	<i>Buteo buteo</i>	None	8	Regularly recorded flying throughout the survey area.
Goldcrest	<i>Regulus regulus</i>	S7, WBR	3	Occasionally recorded in the woodland adjacent to the Development Site.
Mistle Thrush	<i>Turdus viscivorus</i>	S7, UKBR	9	Regularly recorded in the woodland adjacent to the Development Site.
Song Thrush	<i>Turdus philomelos</i>	S7	2	Occasionally recorded in the woodland adjacent to the Development Site.

⁴³ Additional species were added to Section 7 of the Environment (Wales) Act 2016 in April 2026, therefore these species are not included in this table as the surveys were undertaken in the winters of 2024/5 and 2025/6. New Section 7 species that would likely be recorded are Chaffinch, Coal Tit and Green Woodpecker.

⁴⁴ BDir1 = Annex I within the Directive 2009/147/EC on the conservation of wild birds, commonly referred to as "the Birds Directive"

S7 = Section 7 of the Environment (Wales) Act 2016

UKBR = Red list of Birds of Conservation Concern UK Version 5

WBR = Red list of Birds of Conservation Concern Wales Version 4

WCA1 = Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)

Common Name	Scientific Name	Conservation / Protection Status ⁴⁴	Peak Count	Observations
Dunnock	<i>Prunella modularis</i>	S7	2	Occasionally recorded in the woodland adjacent to the Development Site.
Brambling	<i>Fringilla montifringilla</i>	WCA1	2	Recorded on one occasion flying over the woodland adjacent to the Development Site.
Bullfinch	<i>Pyrrhula pyrrhula</i>	S7	1	Rarely recorded in the woodland and scrub adjacent to the Development Site.
Redpoll	<i>Acanthis flammea</i>	S7, UKBR	5	Occasionally recorded in the woodland adjacent to the Development Site.
Crossbill	<i>Loxia curvirostra</i>	WCA1	36	Regularly recorded in the woodland adjacent to the Development Site.

Future Baseline

- 9.5.16. It is anticipated that if the Proposed Development did not proceed, land practices would remain the same, with the majority of the grassland areas continuing to be grazed and the adjacent coniferous plantation commercially managed. Current recreational use is low and largely restricted to public rights of way and is likely to also remain the same or potentially decrease slightly over time, in line with population decline in the local area⁴⁵. Bird species and assemblages would therefore likely remain predominantly the same.
- 9.5.17. However, the rotational felling and planting of coniferous woodland areas is likely to influence the distribution and abundance of certain species adjacent to the Development Site, including target species such as Nightjar and Goshawk.
- 9.5.18. Given current population trends nationally^{46,47}, it is likely that Red Kite and Goshawk numbers will increase within the Development Site over time, while other species that are declining nationally and within Bridgend County Borough, may continue to do so.
- 9.5.19. The changes to temperature and precipitation predicted as a result of climate change would likely change the landscape around us over time in a number of ways. However, it is unlikely that such subtle changes would lead to wholesale change to the future ornithology baseline within the lifetime of the Proposed Development. Changes could include certain bird species becoming more prevalent or declining as their ranges contract or expand, particularly during passage migration and over-wintering. However, given that the Development Site is not near the edge of any of the ranges of the Target Species

⁴⁵ UK Office for National Statistics (2021) Available: <https://www.ons.gov.uk/explore-local-statistics/areas/W04000640-maesteg>

⁴⁶ Welsh Kite Trust (2020). How many Kites are there in Wales? Available at: <http://welshkitetrust.wales/how-many-kites-are-there-in-wales> [Accessed July 2026]

⁴⁷ Rare Breeding Bird Panel (2023) Rare Breeding Birds in the UK in 2023. Available at: <https://rbbp.org.uk/wp-content/uploads/2025/11/2023-RBBP-report-summary-table.pdf> [Accessed July 2026].

recorded, the projected change in climate is not anticipated to result in any significant changes to important ornithological receptors.

- 9.5.20. It is considered that changes to the baseline condition would be minimal in the absence of the Proposed Development by the time it is operational.

9.6 Embedded Measures

- 9.6.1. A range of environmental measures have been embedded into the Proposed Development as outlined in **Section 4.9 Embedded Environmental Measures**. **Table 9.15** outlines how these embedded measures will influence the ornithological assessment.

Table 9.15 Summary of the embedded environmental measures

Receptor	Potential changes and effects	Embedded measures	Compliance mechanism
<i>Construction and Decommissioning</i>			
Breeding birds	Permanent or temporary land-take/changes to habitats to facilitate construction could displace birds from existing habitat and result in direct injury or damage to nest sites.	Proposals have sought to minimise habitat losses. Measures to prevent impacts on breeding birds will include: Vegetation clearance outside of the breeding bird season (i.e., between September and February inclusive); Use of dedicated working areas and construction access routes; Ecological Clerk of Works (ECoW) to carry out pre-works checks and monitoring of construction areas where they cannot be completed outside of the breeding bird season (March to August inclusive); and Any active bird nests in or immediately adjacent to working areas would be identified and provided with appropriate exclusion zones.	Construction Environmental Management Plan (CEMP) and Construction Method Statement (CMS) secured by DNS condition.

Receptor	Potential changes and effects	Embedded measures	Compliance mechanism
Schedule 1 breeding birds Breeding Nightjar Golden Plover	Production of noise or visual disturbance during construction that has the potential to disturb or displace birds.	Construction methods and programme will consider the location of identified nest sites and roost sites. The timing and duration of works will be managed to avoid direct conflict. Additional measures such as the use of protection zones and visual/noise screens would be considered. The use of lighting around the proposed construction compound will be restricted.	CEMP secured by DNS condition.
Operation			
Target Species	Potential killing or injury to birds in flight, through direct collision with moving turbine blades	Strategy developed to monitor the number and frequency of collisions to inform need for additional mitigation during operation such as curtailment or feathering.	A Collision Mitigation and Monitoring Strategy (CMMS) secured via DNS condition.
Nightjar	Potential killing or injury to Nightjar in flight, through direct collision with moving turbine blades or barotrauma.	A minimum of 50m stand-off will be maintained between turbine blade tips and the nearest point of features that may cause commuting Nightjar to fly within the collision risk zone such as woodland.	Embedded in design - secured via DNS condition
Target Species	Displacement of birds from usual foraging and migratory routes due to visual and noise disturbance from operational turbines.	A Habitat Management Plan (HMP) setting out the long-term management and enhancement of habitats for all wildlife including birds. An Outline HMP (oHMP) will be submitted alongside the Final ES.	HMP secured via DNS condition.
Schedule 1 breeding birds	Noise or visual disturbance during routine and emergency maintenance that has the potential to disturb or displace birds resulting in breeding failure and impacts on the local population.	Maintenance methodology to be adopted via CMMS that ensures major maintenance works avoid the breeding season, where possible, and/or are completed sensitively where nest sites of Schedule 1 species are known. HMP will include ongoing long-term management	CMMS and HMP.

Receptor	Potential changes and effects	Embedded measures	Compliance mechanism
		measures to enhance wider opportunities for any disturbed or displaced birds.	

9.7 Scope of the Assessment

Overview

- 9.7.1. Best practice guidelines for EclA¹⁴ recognise an appropriate EclA cannot consider in detail every individual species that may potentially be present at a site or affected by a development. The EclA process therefore aims to focus the assessment on those ecological receptors that could be ‘significantly’ affected by the Proposed Development (i.e. where the effects on the ecological receptors are of sufficient concern that they could influence the decision about whether or not planning permission should be granted), or for which the development could result in the contravention of legislation. The guidelines advocate that the EclA process includes an initial ‘scoping stage’ to identify ecological receptors that are unlikely or likely to be significantly affected by the Proposed Development, thereby allowing the assessment to focus on those ecological receptors that are pertinent to the Proposed Development and planning decision. This process is informed by the site investigations, desk study data and consultation with key stakeholders.
- 9.7.2. This section summarises the approach to, and outcomes of, the ornithological assessment scoping stage, including those ornithology receptors that have been scoped into or out of the assessment, and takes into account comments received in the Scoping Direction (see **Table 9-4**).

The Proposed Development

- 9.7.3. The Proposed Development is a wind farm consisting of a maximum of eight wind turbines, each with a three-bladed rotor with a diameter of up to 150m, a hub height of up to 105m and maximum height to blade tip of 180m.
- 9.7.4. The application also comprises associated infrastructure including:
- two substations including transformer housing;
 - two temporary construction compounds;
 - two temporary site offices;
 - crane pads and cabling;
 - access track construction;
 - overhead line connection (via wooden pole) to an agreed Point of Connection (POC) with National Grid Electricity Distribution (NGED); and
 - internal access tracks.
- 9.7.5. The Proposed Development will be designed with an operational life of 30 years. For the purposes of this assessment, it is assumed that it would be decommissioned at this point,

though there is also the option for the developer to apply for an extension or repowering with new infrastructure.

- 9.7.6. The Proposed Development is described in further detail within **Chapter 4: Development Description**.

Spatial Scope

- 9.7.7. The spatial scope of the assessment of ornithology covers the area of the Development Site, together with the Zols of the Proposed Development. For the purposes of this Draft ES, the 'Development Site' refers to the Northern Array, Southern Array and NGED Connection and excludes the Forestry access track that extends northwards (see **Chapter 4: Development Description**).
- 9.7.8. The Zols of the Proposed Development vary depending on the nature of the environmental change being considered and the sensitivity, mobility and habitat suitability of the ornithological receptor being considered.
- 9.7.9. The most straightforward Zol to define is the area affected by land-take and direct land-cover changes associated with the Proposed Development. This Zol is the same for all affected ornithological receptors.
- 9.7.10. By contrast, for each environmental change that can extend beyond the area affected by land-take and land-cover change (e.g. increased noise associated with construction activities within the land-take area), the Zol may vary between ornithological receptors, dependent upon their sensitivity to the change and the precise nature of the change. For example, a Feral Pigeon *Columba livia domestica* might only be disturbed by noise generated very close to its nest, while nesting Goshawk might be disturbed by noise generated at a much greater distance; other species may be unaffected by changes in noise. In view of these complexities, the definition of the Zols that extend beyond the land-take area was based upon professional judgement informed as far as possible by a review of published evidence (e.g. disturbance criteria for various species) and discussions with the technical specialists who are working on other chapters of the ES.
- 9.7.11. The Zols have formed the basis of the Study Area described in in **Section 9.4 Data gathering methodology**.
- 9.7.12. The spatial scope of the ornithological surveys reduced in the second year of surveys (October 2025 to September 2026) following a contraction in the area of the Development Site. The survey areas during the first and second years are mapped in **Appendix 9A Baseline Ornithological Report**.

Temporal Scope

- 9.7.13. The temporal scope of the assessment is consistent with the period over which the Proposed Development would be constructed and operated as set out in **Chapter 4 Development Description**. This includes an anticipated 22-month construction period and 30-year operation. Effects during decommissioning have not been specifically assessed at this stage as baseline conditions and best practice guidelines may have changed at that time; however, it is considered that they will be similar or no worse than construction effects.

Potential Receptors

- 9.7.14. This section details the approach to identifying ornithological receptors that could be significantly affected by the Proposed Development and that therefore need to be taken forward for further consideration.
- 9.7.15. The general principle is that receptors that could be significantly affected will be identified based on their sensitivity/importance value and the spatial and temporal scope of the assessment.

Resources

- 9.7.16. The importance of each ornithological receptor has been determined using the following resources:
- Schedule 1 of the WCA 1981 (as amended)⁶ – This affords greater protection to certain breeding species that are considered appropriately at risk nationally;
 - Population Estimates of Birds in the UK⁴⁸;
 - Rare Breeding Birds in the UK²⁶;
 - Guidelines for selection of biological SSSIs⁴⁹;
 - Priority species listed under Section 7 of the Environment (Wales) Act 2016 (as amended)⁵;
 - Birds of Conservation Concern Wales Version 4²⁴ –Welsh bird populations are assessed using quantitative criteria to determine the population status of each species and then placed on one of three lists: Red, Amber or Green:
 - Red list species are of high conservation concern, being either globally threatened, having historical Welsh population declines between 1800 and 1995 or a rapid population decline or breeding range contraction by 50% or more in the last 25 years;
 - Amber list species are of medium conservation concern due to a number of factors, for example having suffered between 25% and 49% contraction of Welsh breeding range or a 25-49% reduction in breeding or non-breeding Welsh populations over the last 25 years. Species which have a five year mean of fewer than 30 breeding pairs or an unfavourable European conservation status, or for which the breeding or wintering population in Wales represents 50% or more of the UK population are also listed on the Amber list; and
 - Green list species are those that do not meet the thresholds defined for Red or Amber categories;
 - Estimating the Sizes of Breeding Populations of Birds in Wales²⁷;
 - The Welsh Bird Report²⁸;
 - Guidelines for the Selection of Wildlife Sites in South Wales²⁹; and
 - East Glamorgan Bird Report³⁰.

⁴⁸ Woodward, I., Aebischer, N., Burnell, D., Eaton, M., Frost, T., Hall, C., Stroud, D.A. & Noble, D. (2020). Population estimates of birds in Great Britain and the United Kingdom. *British Birds* 113: 69–104.

⁴⁹ JNCC (2024). Guidelines for selection of biological SSSIs. Available at: <https://jncc.gov.uk/our-work/guidelines-for-selection-of-sssis> [Accessed July 2026].

Criteria

- 9.7.17. The selection of ornithological receptors to be taken forward to the detailed assessment stage has been informed by baseline data collected through the field surveys and desk study. This information will be used to identify those ornithological receptors considered to be 'important' at the level of the Development Site. Following CIEEM guidance¹⁴, the importance of ornithological receptors was determined using a geographic scale and described in the context of UK and Welsh legislation and policy, and with consideration given to the extent of habitat or size of population that may be affected by the Proposed Development.
- 9.7.18. Wherever possible, information regarding the extent and population size, population trends and distribution of the ornithological receptors has been used to inform the categorisation and determine importance at the level of the Development Site. Where detailed criteria or contextual data are not available, professional judgement has been used to determine importance. The criteria for determining the importance of ornithological receptors are provided in **Table 9.16**.

Table 9.16 Criteria for determining importance of ornithological receptors

Geographic context of importance	Description
International or European	International nature conservation sites including SPAs, potential SPAs and Ramsar sites. Populations of qualifying species of international nature conservation sites, that depend on the Development Site (i.e., functionally linked to the designation). Species present in internationally important numbers (>1% of European populations). Species listed on Annex I of the EC Birds Directive if present in qualifying numbers/proportions of international population.
National (UK/Wales)	National nature conservation sites, including any SSSI or NNR designated for ornithology features. Populations of qualifying species of national nature conservation sites, that depend on the Development Site (i.e., functionally linked to the designation). Areas (and the populations of species which inhabit them) which meet the published selection criteria guidelines for selection of biological SSSIs but which are not themselves designated based on field data collected to inform the EcIA, and in agreement with NRW. Section 7 habitats and species, Red listed and legally protected species that are not addressed directly in Part 2 of the "Guidelines for Selection of Biological SSSIs" but can be determined to be of national importance using the principles described in Part 1 of the guidance.

Geographic context of importance	Description
	Breeding or overwintering populations of ecologically sensitive rare bird species (<300 breeding pairs in the UK). Species present in nationally important numbers (>1% Welsh/UK population). Regularly occurring relevant migratory species, which are of rare and/or of significant conservation concern that warrant special consideration on account of the proximity of migration routes, breeding, wintering and staging areas in relation to the Proposed Development.
County (Bridgend County Borough) ⁵⁰	Local nature conservation sites designated for ornithology, including Local Nature Reserves (LNRs) and SINC. Populations of species designated within local nature conservation sites, that depend on the Development Site. County-scale important population/assemblage of bird species listed on Schedule 1 of the WCA or Section 7 of the Environment (Wales) Act 2016. Species present in regionally important numbers (>1% regional population). Significant breeding or overwintering populations of species on the Red List of BoCC within the county context. Significant species, populations or assemblage that would meet the criteria set for SINC designation.
Local	Breeding or overwintering populations of Section 7 species, Red listed and Schedule 1 protected species that based on their extent, population size, quality etc are determined to be at a lesser level of importance than the geographic contexts above. Common and widespread native species occurring within the Study Area in numbers greater than may be expected in the local context.
Less than local	All other species not included in the above categories, such as populations of Green-listed species or smaller populations of certain conservation concern species that are otherwise common and widespread. Such species are normally scoped out of the assessment process.

- 9.7.19. Where protected bird species are present and there is the potential for a breach of the legislation, those species will be considered as 'important' receptors. Except for species receiving specific legal protection, or those subject to legal control (e.g. invasive species), all ornithological receptors determined to be important at Site only level will be scoped out of the assessment. Further, ornithological receptors of greater importance, where justified, will also be scoped out. This is because effects on them would not influence the decision-making about whether consent should be granted for the Proposed Development (in other

⁵⁰ County estimates for breeding and wintering birds specific to Bridgend County Borough were largely unavailable with reports (Glamorgan Bird Club, 2024) referring to the wider "East Glamorgan" area which covers the former preserved county of Glamorgan. Where estimates and assessment refer to the wider Glamorgan area, this has been made clear as part of the assessment.

words a significant effect in EIA terms could not occur). This approach is consistent with that described in CIEEM guidance¹⁴.

Receptors

- 9.7.20. The principal ornithological receptors that have been scoped in as being potentially subject to effects are summarised in **Table 9.17**, with justifications of the determinations of their importance.
- 9.7.21. The principal ornithological receptors that have been scoped out as being potentially subject to effects are summarised in **Table 9.18** with justifications.

Table 9.17 Important ornithological receptors scoped into the ornithological assessment

Receptor	Importance - Legislation	Importance – Proposed Development	Justification
Golden Plover	International	County	Golden Plover is listed on Annex I of the Birds Directive. Within East Glamorgan, the peak count of Golden Plover recorded in 2022 was over 1,500 individuals²⁸. Golden Plover is described as a locally common winter visitor and passage migrant within East Glamorgan, mainly along the coast with Sker Point being the main site supporting up to 1,000 birds in 2024. Inland, small flocks of up to 50 birds are recorded between October and February, though flocks of birds which winter on suitable habitat away from coasts are likely to be under recorded. Golden Plover were recorded flying over or roosting at the Development Site on three occasions in the winter of 2024/25 and on six occasions in the winter of 2025/26. The peak count of 150 is likely to represent a significant proportion of the County population.
Nightjar	International	County	Nightjar is listed on Annex I of the Birds Directive. In East Glamorgan, Nightjar is considered an uncommon breeding summer visitor, confined to replanted clear-fell areas in conifer plantations. The East Glamorgan Bird Report recorded sightings of Nightjar from 21 different locations in 2024, with the records indicating that Nightjar are widely distributed across the northern part of the region where there is suitable habitat. This report records potential breeding at 11 locations in 2024, with confirmation difficult to gain due to the crepuscular nature of Nightjar and difficulties associated with finding their nests. An estimated twelve Nightjar breeding territories were identified within 500m of the Development Site in 2026 and this is likely to represent a significant proportion of the County population. In addition, sites with a breeding population of Nightjar, of any size, should be considered for selection as a SINC in Bridgend County Borough.
Goshawk	National	Local	Goshawk is listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). In East Glamorgan, 19 Goshawk nest sites were recorded in 2022²⁸ and the species is considered an uncommon resident breeder. Goshawk were recorded infrequently within the survey area throughout the breeding season and non-breeding seasons with a peak count of two birds. No active nests sites were identified within 1 km of the Development Site and therefore the importance of the population is considered local only.
Red Kite	International	Local	Red Kite is listed on Annex I of the Birds Directive.

Receptor	Importance - Legislation	Importance – Proposed Development	Justification
			In East Glamorgan 12 Red Kite nest sites were recorded in 2021²⁸ and the species is considered a locally common resident but a rare breeder in the area. Red Kite were recorded regularly every month within the survey area throughout the breeding season and non-breeding seasons with a peak count of four birds. No active nests sites were identified within 2 km of the Development Site and therefore the importance of the population is considered local only.
Kestrel	National	Local	Kestrel is a priority species listed in Section 7 of the Environment (Wales) Act 2016. Within East Glamorgan, 24 Kestrel nest sites were recorded in 2022²⁸ and it is considered a common resident. Kestrel were recorded hunting frequently between July and March within the survey area. No active nests sites were identified within 1 km of the Development Site and therefore the importance of the population is considered local only.
Peregrine	International	Local	Peregrine is listed on Annex I of the Birds Directive. In East Glamorgan, Peregrine is considered a locally common resident breeder though it continues to suffer persecution. In 2024, the South Wales Peregrine Monitoring Group recorded 23 breeding territories within the East Glamorgan area. Peregrine were recorded infrequently within the survey area throughout the breeding season and non-breeding seasons with a peak count of two birds. No active nests sites were identified within 2 km of the Development Site and therefore the importance of the population is considered local only.
Breeding bird assemblage (grassland and grass-heath)	National	Local	For a breeding bird assemblage to be considered for selection as a SINC in Bridgend County Borough, a minimum of eight species listed in the SINC selection guidelines need to be breeding on the site. The breeding bird assemblage of the grassland and grass-heath within the Development Site included four species from the guidelines list: Skylark, Stonechat <i>Saxicola rubicola</i>, Linnet and Reed Bunting <i>Emberiza schoeniclus</i>. Therefore, the assemblage is considered of local importance only.
Breeding bird assemblage (woodland, clear-fell and scrub)	National	Local	For a breeding bird assemblage to be considered for selection as a SINC in Bridgend County Borough, a minimum of eight species listed in the SINC selection guidelines need to be breeding on the site. The breeding bird assemblage of the woodland, clear-fell and scrub adjacent to the Development Site included six species from the guideline list: Nightjar, Green Woodpecker, Firecrest, Song Thrush, Bullfinch and Crossbill. Therefore, the assemblage is considered of local importance only.

Receptor	Importance - Legislation	Importance – Proposed Development	Justification
Wintering bird assemblage (grassland and grass-heath)	National	Local	For a wintering bird assemblage to be considered for selection as a SINC in Bridgend County Borough, a minimum of 12 species listed in the SINC selection guidelines need to be present on the site in winter or on passage refuelling. The wintering bird assemblage of the grassland and grass-heath within the Development Site included nine species from the guidelines list: Golden Plover, Snipe, Hen Harrier, Kestrel, Peregrine, Skylark, Stonechat, Linnet and Reed Bunting. Therefore, the assemblage is considered of local importance only.
Wintering bird assemblage (woodland, clear-fell and scrub)	National	Local	For a wintering bird assemblage to be considered for selection as a SINC in Bridgend County Borough, a minimum of 12 species listed in the SINC selection guidelines need to be present on the site in winter or on passage refuelling. The wintering bird assemblage of the woodland, clear-fell and scrub within the Development Site included three species from the guideline list: Green Woodpecker, Song Thrush and Bullfinch. Therefore, the assemblage is considered of local importance only.

Table 9.18 Important ornithological receptors scoped out of the ornithological assessment

Receptor	Importance - Legislation	Importance – Proposed Development	Justification
Mynydd Ty-isaf SSSI	National	Scoped out	The site is designated as a SSSI, which are subject to strict protection under the Wildlife and Countryside Act 1981 (as amended). The SSSI is designated for a breeding Schedule 1 raptor species which has a core foraging range of 2 km from their nest site during the breeding season⁵¹. Considering the SSSI is 5.07 km from the Development Site, it is considered unlikely to be within the Zol of the Proposed Development.

⁵¹ Scottish Natural Heritage (2016) Guidance Note: Assessing Connectivity with Special Protection Areas (SPAs). Version 3.

Receptor	Importance - Legislation	Importance – Proposed Development	Justification
Eglwys Nunydd Reservoir SSSI	National	Scoped out	The site is designated as a SSSI, which are subject to strict protection under the Wildlife and Countryside Act 1981 (as amended). The SSSI is designated for wintering and passage waterfowl. Considering the only waterfowl recorded during the baseline surveys of the Development Site, was a single Canada Goose flying over in April 2026, the Proposed Development is not considered likely to have significant effects on wintering or passage waterfowl.
Lletty Brongu SINC	County	Scoped out	The site is designated as a SINC. The Bridgend County Borough Local Development Plan stipulates that SINC's must be considered during the determination of planning applications ¹¹ . The SINC is designated for rare breeding birds such as Kingfisher and Dipper. These small bird species are not considered to be at risk of impacts from the operational turbines and were not recorded within the survey area.
Tylacoch South SINC	County	Scoped out	The site is designated as a SINC. The Bridgend County Borough Local Development Plan stipulates that SINC's must be considered during the determination of planning applications ¹¹ . The description of Tylacoch South SINC provided by SEWBRc states that the site is designated for supporting rare breeding birds but does not specify the species. The individual species records provided by SEWBRc includes recent records within the location of Tylacoch South SINC of Skylark, House Martin <i>Delichon urbicum</i> , Meadow Pipit and Bullfinch. Passerines are not considered to be at risk of impacts from the operational turbines ¹⁵ .
Infrequent migratory and non-breeding Target Species	International / National	Scoped Out	Passage migrants and non-breeding notable species recorded in low numbers (one or two birds) and infrequently (i.e. fewer than 5 times) comprised: Curlew, Hen Harrier, Hobby and Snipe. Given the low frequency and numbers recorded for each of these species, any potential effects would not be observable within the wider population.

Likely Significant Effects

- 9.7.22. In accordance with the EIA Regulations⁵², the EIA for the Proposed Development will consider those impacts where there is a risk of a likely significant effect only. The following section identifies those effect-receptor pathways that may potentially lead to a significant effect. This has been informed by best practice guidance and professional judgement.
- 9.7.23. The effects on ornithology receptors which have the potential to be significant and have been taken forward for detailed assessment are summarised in **Table 9.19**.
- 9.7.24. The receptors/effects detailed in **Table 9.20** have been scoped out from being subject to further assessment because the potential effects are not considered likely to be significant.

Table 9.19 Summary of effects scoped into the ornithological assessment

Receptors	Potential Effects	Justification
Construction and Decommissioning		
Golden Plover Nightjar Goshawk	Noise, visual and vibrational stimuli resulting in disturbance and displacement.	Non-breeding Golden Plover can be disturbed by human-related activities 200 m away⁵³. An occasional roosting area for Golden Plover was identified within the central area of the Northern Array, which is approximately 150 m north of Turbine 3 and its proposed access route. Breeding Nightjar can be disturbed by human-related activities 150-500 m away¹⁹. Breeding territories of Nightjar were identified within 150 m of the works, the closest being approximately 70 m north of the proposed location of the substation in the Northern Array. Breeding Goshawk can be disturbed by human-related activities 300-500 m away¹⁹. No active nest sites for Goshawk were identified within 1 km of the Development Site in 2025 or 2026, though suitable nesting habitat was identified for potential future breeding within 300 m of the works. Full consideration of the potential effects of disturbance is provided in Section 9.9 to Section 9.11.
Breeding Bird Assemblage (grassland and grass-heath) Breeding Bird Assemblage (woodland, clear-fell and scrub)	Permanent or temporary loss or changes to habitat.	Permanent and temporary land-take to facilitate the construction of turbines (including possible tree-felling to maintain a bat buffer zone around Turbine 2) and construction of associated infrastructure, has the potential to reduce the availability of nesting, foraging or resting habitats used by the breeding bird assemblage. Full consideration of the potential effects of habitat loss is provided in Section 9.15 and Section 9.16.

⁵² The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (SI 2017/567).

⁵³ Cutts, N, Hemingway, K and Spencer, J (2013) Waterbird disturbance mitigation toolkit. Informing estuarine planning and construction projects. Produced by the Institute of Estuarine & Coastal Studies (IECS) University of Hull, 2013.

Receptors	Potential Effects	Justification
Operation		
Golden Plover Nightjar Goshawk Red Kite Kestrel Peregrine	Physical changes to the spatial environment that could result in barrier effects or collision, injury and fatality.	Sufficient recordings within the collision risk zone, or proximity of breeding territories in the case of Nightjar, to warrant further analysis of the mortality risk to inform the assessment of potential significant effects. Full consideration of the potential effects of habitat loss is provided in Section 9.9 to Section 9.14 .
Golden Plover Nightjar Goshawk	Noise, visual and vibrational stimuli resulting in disturbance and displacement.	Non-breeding Golden Plover can be disturbed by human-related activities 200 m away⁶³. An occasional roosting area for Golden Plover was identified within the central area of the Northern Array, which is approximately 150 m north-east of Turbine 3. Breeding Nightjar can be disturbed by human-related activities 150-500 m away¹⁹. Breeding territories of Nightjar were identified within 500 m of the Turbines, the closest being approximately 200m north of Turbine 1. Breeding Goshawk can be disturbed by human-related activities 300-500 m away¹⁹. No active nest sites for Goshawk were identified within 1 km of the Development Site in 2025 or 2026, though suitable nesting habitat was identified for potential future breeding within 300 m of the works. Full consideration of the potential effects of disturbance is provided in Section 9.9 to Section 9.11.

Table 9.20 Summary of effects scoped out of the ornithological assessment

Receptors	Potential Effects	Justification
Construction and Decommissioning		
Red Kite Kestrel Peregrine Breeding bird assemblages Wintering bird assemblage	Noise, visual and vibrational stimuli resulting in disturbance and displacement.	During the baseline surveys, no Red Kite or Peregrine nests were identified within 2 km and no Kestrel nests were identified within 1 km of the Development Site. In addition, no suitable nesting habitat was identified for these species within the disturbance distances of the works. Regarding the breeding and wintering bird assemblages, Target Species have been taken forward for further assessment where applicable. The wider passerine assemblage is unlikely to be especially vulnerable to such impacts, given passerines typically have far reduced disturbance distances and will have a degree of habituation to farming use of the Development Site. Accounting for the wider landscape habitat availability, it is considered that any associated temporary noise

Receptors	Potential Effects	Justification
		and visual disturbance/-displacement impacts are of insufficient magnitude or duration to have the potential to give rise to significant adverse effects.
Operation		
Breeding bird assemblages Wintering bird assemblage	Physical changes to the spatial environment that could result in barrier effects or collision, injury and fatality.	The wider passerine assemblage is not considered to be at notable risk of collisions with turbines species and have not been taken forward for further assessment. This approach is supported by best practice ¹⁵ .
Red Kite Kestrel Peregrine Breeding bird assemblages Wintering bird assemblage	Noise, visual and vibrational stimuli resulting in disturbance and displacement.	During the baseline surveys, no Red Kite or Peregrine nests were identified within 2 km and no Kestrel nests were identified within 1 km of the Development Site. In addition, no suitable nesting habitat was identified for these species within the disturbance distances of the works. Regarding the breeding and wintering bird assemblages, Target Species have been taken forward for further assessment where applicable. Disturbance during routine operation maintenance will also be temporary in nature (2-3 days). The wider passerine assemblage is unlikely to be especially vulnerable to such impacts, given passerines typically have far reduced disturbance distances and will have a degree of habituation to farming use of the Development Site. Accounting for the wider landscape habitat availability, it is considered that any associated temporary noise and visual disturbance/-displacement impacts are of insufficient magnitude or duration to have the potential to give rise to significant adverse effects.

9.8 Assessment Methodology

Overview

- 9.8.1. The generic project-wide approach to the assessment methodology is set out in **Chapter 2 Approach to EIA**. However, while this has informed the approach that has been used in this ornithological assessment, it is necessary to set out how this methodology has been applied, and adapted as appropriate, to address the specific needs of this ornithological assessment and to align with the standard industry guidance provided by CIEEM¹⁴.
- 9.8.2. The assessment will be based upon not only the results of the desk study and field surveys, but also relevant published information (for example on the status, distribution, sensitivity to environmental changes and ecology of the receptors scoped into the assessment, where this information is available), and professional knowledge of ecological processes and functions.

Geographical Context

- 9.8.3. The guidelines recommend that the value or potential value of the important ecological receptor be determined within a defined geographical context as set out in **Table 9.16**, noting that where a receptor has value at more than one geographical level, its overriding value is that of the highest level.

Valuing Species

- 9.8.4. The guidelines require consideration of all protected species as ‘important’ receptors where there is the potential for a breach in legislation.
- 9.8.5. In assigning value to a species, it is necessary to consider its distribution and status, including a consideration of trends based on available historical records, as well as their legal protection, whilst using any relevant published evaluation criteria available at the time of assessment.

Assessment of Impacts

- 9.8.6. The CIEEM guidelines¹⁴ state that the assessment of impacts should be undertaken in relation to the predicted future baseline conditions during the lifetime of the Proposed Development that are expected to occur if the development were not to take place.
- 9.8.7. Having identified the activities likely to cause significant impacts, it is then necessary to describe the resultant changes and to assess the impact on valued ornithological receptors. The process of identifying impacts should make explicit reference to aspects of ecological structure and function on which the receptor depends. For species that occur within the ZoI, the assessment will consider the total area that is used by the affected individuals or the local population of the species (e.g. for foraging or as breeding territories).
- 9.8.8. When describing changes/activities and impacts on ecosystem structure and function, it is necessary to consider the following parameters:
- beneficial or adverse – whether the change is in accordance with the nature conservation objectives and policy (whereby a beneficial impact is one that improves the quality of the environment, an adverse impact being one that reduces it);
 - extent – the spatial or geographical area over which the environmental change may occur;
 - magnitude – the size, amount, intensity or volume of the environmental change;
 - duration – the length of time over which the environmental change may occur;
 - frequency – the number of times the environmental change may occur;
 - timing – the periods of the day/year etc. during which an environmental change may occur; and
 - reversibility – whether the environmental change can be reversed through restoration actions.

Magnitude of Change

- 9.8.9. Although the characteristics described above are all important in assessing effects by using information about the way in which habitats and species are likely to be affected, a scale for the magnitude of the environmental change, as a result of the Proposed Development, has been described in **Table 9.21** to provide an understanding of the relative change from the baseline position, be that adverse or beneficial changes.

Table 9.21 Guidelines for the Assessment of the Scale of Magnitude

Scale of change	Criteria and resultant effect
High	The change permanently (or over the long-term) affects the conservation status of a habitat/species, reducing or increasing the ability to sustain the habitat or the population level of the species within a given geographic area. Relative to the wider habitat resource/species population, a large area of habitat or large proportion of the wider species population is affected. For designated sites, integrity is compromised. There may be a change in the level of importance of the receptor in the context of the project.
Medium	The change permanently (or over the long term) affects the conservation status of a habitat/species reducing or increasing the ability to sustain the habitat or the population level of the species within a given geographic area. Relative to the wider habitat resource/species population, a small-medium area of habitat or small-medium proportion of the wider species population is affected. There may be a change in the level of importance of this receptor in the context of the project.
Low	The quality or extent of designated sites or habitats or the sizes of species' populations, experience some small-scale reduction or increase. These changes are likely to be within the range of natural variability, and they are not expected to result in any permanent change in the conservation status of the species/habitat or integrity of the designated site. The change is unlikely to modify the evaluation of the receptor in terms of its importance.
Very Low	Although there may be some effects on individuals or parts of a habitat area or designated site, the quality or extent of sites and habitats, or the size of species populations, means that they would experience little or no change. Any changes are also likely to be within the range of natural variability and there would be no short-term or long-term change to conservation status of habitats/species receptors or the integrity of designated sites.
Negligible	A change, the level of which is so low, that it is not discernible on designated sites or habitats or the size of species' populations, or changes that balance each other out over the lifespan of a project and result in a neutral position.

Significance Criteria

- 9.8.10. The guidance defines an ecologically significant impact as 'an effect that either supports or undermines biodiversity conservation objectives' for 'important ecological features' or for 'biodiversity in general'.
- 9.8.11. Once a potential significant effect is identified as likely to affect the integrity/favourable conservation status of a potential ornithological receptor, the value of the receptor will be used to help determine the geographical scale at which

the impact is significant. If an effect is not found to be significant at the level at which the receptor has been valued, it may still be significant at a more local level. An effect that is of significance below a local level, or is deemed not to be significant, will be scoped out of the assessment.

- 9.8.12. Although certain species may not constitute potential ornithological receptors based upon their nature conservation value, they may still warrant consideration during the design and mitigation of the Proposed Development based on their legal protection, their implications for policies and plans, or other issues such as animal welfare issues.
- 9.8.13. The guidance advocates the use of professional judgement, informed by relevant best practice guidance, in determining significant effects over the use of matrices.
- 9.8.14. The significance of the potential effects upon potential ornithological receptors will be assessed considering embedded measures. If significant potential effects remain then additional targeted mitigation will be proposed and a reassessment undertaken considering the additional measures.
- 9.8.15. When assessing the effect of the loss of multiple birds on a population, the effect is influenced by several characteristics of the affected population, notably its size, density, recruitment rate (additions to the population through reproduction and immigration) and mortality rate (the natural rate of losses due to death and emigration). In general, the effect of an individual lost from the population will be greater for species that occur at low density, are relatively long lived and reproduce at a low rate.

9.9 Assessment of Effects: Golden Plover

Construction Phase: Disturbance and Displacement

Construction Activities

- 9.9.1. Construction activities that may give rise to noise, visual or vibrational disturbance, as set out in **Chapter 4 Development Description**, include:
 - Enabling works – required prior to the main construction phase and including:
 - geotechnical investigations (e.g., trial pits or boreholes);
 - upgrading of existing tracks and construction of new access tracks and passing places;
 - installation of temporary construction compounds; and
 - vegetation clearance.
 - Site infrastructure works – required to support construction and safe, reliable operation of the wind farm, this would include construction of:
 - wind turbine foundations;
 - crane hard-standing (to support turbine construction and maintenance);

- cable trenching and routing;
- two substation compounds with transformer housing;
- two temporary site offices; and
- Overhead line connection (via wooden pole) to agreed Points of Connection (POC) with National Grid Electricity Distribution (NGED).
- Turbine installation:
 - installation of eight wind turbine towers, nacelles and blades.

9.9.2. Working hours will be restricted to 07:00-19:00 and it is anticipated that the construction will be phased over a 22-month period.

Assessment of Effects

- 9.9.3. Golden Plover were recorded occasionally roosting and circling over the central area of the Northern Array during the non-breeding periods in 2024/2025 and 2025/2026. This was recorded on eight occasions over the two years with flocks of between 13 and 150.
- 9.9.4. The area utilised by Golden Plover within the Northern Array is approximately:
- 150 m from Turbine 3 working area and access route;
 - 180 m from Turbine 1 working area;
 - 410 m from the Northern Array substation;
 - 510 m from Turbine 2 working area; and
 - 600 m from Turbine 4 working area.
- 9.9.5. There was also a single record in January 2025 of two Golden Plover on the grassland in the east of the Southern Array. Due to the low frequency and number recorded, any potential effects in the Southern Array are not considered significant.
- 9.9.6. Disturbance distances reported for non-breeding Golden Plover (Hotker *et al* 2005)⁵⁴ show minimum displacement distances of 175 m (+/-167 m) associated with wind farms. Construction impacts and responses of non-breeding waders are summarised in Cutts *et al* (2013)⁵³, which identified Golden Plover as being of “Moderate Sensitivity” to both visual and noise disturbances. A precautionary approach is recommended that sees consideration of any birds within 200 m of construction activities.
- 9.9.7. Noise disturbance is often difficult to separate from visual disturbance in birds, with birds typically more susceptible to human presence rather than machinery or noise. Golden Plover have been shown to tolerate noise up to 72 dB (at the bird) with caution recommended at 55 dB. Noise levels reduce significantly with distance, as

⁵⁴ Hötter, H., Thomsen, K.-M. & Jeromin, H. (2006) Impacts on biodiversity of exploitation of renewable energy sources: the example of birds and bats - facts, gaps in knowledge, demands for further research, and ornithological guidelines for the development of renewable energy exploitation. Michael-Otto-Institut im NABU, Bergenhusen.

an example, a noise level of 100 dB (typical for heavy plant) would reduce to <60 dB at a distance of 85 m.

- 9.9.8. Baseline surveys showed that the Golden Plover flocks present on the Development Site were susceptible to human disturbance, flushing or taking flight when disturbed by a farmer walking past. It is therefore assumed that a similar response could occur with respect to the increase in human activity required to construct the wind farm.
- 9.9.9. As detailed in **Section 9.6 Embedded Measures**, a CEMP and CMS will be secured via DNS condition that set out measures to safeguard birds during construction. Such measures are set out in greater detail below:
- monitoring of non-breeding Golden Plover to confirm their number and distribution;
 - scheduling of construction works at Turbine 1, Turbine 3 and their access routes to avoid key periods for Golden Plover on the Development Site (the core wintering season between November and February inclusive);
 - identification of “no walking” areas designed to minimise the risk of visual disturbance to the location identified as an occasional roost; and
 - consideration of whether the use of visual screening is feasible on the Development Site, installed around the construction areas of Turbine 1 and Turbine 3 to minimise risk of human disturbance, and if unfeasible an alternative solution will be found as necessary.
- 9.9.10. Golden Plover were sporadically recorded during the non-breeding seasons at the Development Site. No Golden Plover were recorded at the Development Site between September and December 2024, between February and March 2025, in November 2025 or January 2026. Therefore, it is considered that Golden Plover likely utilise other sites in the wider area for the majority of the non-breeding season. Therefore, should Golden Plover be temporarily displaced by construction activities at the Development Site, the wider area would feature potential alternative refuge areas.
- 9.9.11. Based on the current design and assuming the adoption of embedded measures, the predicted disturbance of non-breeding Golden Plover during construction is considered to be a low magnitude, temporary, diurnal, reversible, adverse effect, that would be **not significant** to the local population.

Operation Phase: Collision with Turbines

- 9.9.12. Mortality from collision has the potential to lead to a decline in the local population of Golden Plover. In view of this, CRM was carried out based on Golden Plover flight data collected from VP surveys undertaken between October 2024 and March 2026. VP surveys during the breeding season of 2026 are ongoing.
- 9.9.13. The methods, workings and results of the CRM for Golden Plover is provided in **Appendix 9B Bird Collision Risk Modelling Report**.
- 9.9.14. **Table 9.22** provides a summary of the CRM results for Golden Plover, with the predicted number of collisions for Golden Plover annually and over the 30-year operation of the Proposed Development. Modelling for Golden Plover was carried out using the recommended avoidance rate of 98%¹⁵.

Table 9.22 Predicted collision rates for Golden Plover

Species	Avoidance rate	Modelled collisions per year	Modelled collisions over 30 years
Golden Plover	98%	7.4	222

- 9.9.15. Results from the CRM of the VP survey data predict that the potential rate of collisions for Golden Plover would be 7.4 collisions per year, equivalent to 222 birds over 30 years.
- 9.9.16. The CRM is based on data from two non-breeding seasons but only one breeding season. Considering Golden Plover were not recorded at the Development Site during the breeding season, this predicted collision rate is considered an overestimate as there is double the amount of data from non-breeding seasons. The Final ES will include CRM based on two entire years of data and therefore be a more accurate estimation and will likely predict a lower collision rate.
- 9.9.17. Within East Glamorgan, the peak count of Golden Plover recorded in 2022 was over 1,500 individuals²⁸. This count comprised Golden Plover wintering at coastal sites and is likely to represent an underestimate for the non-breeding population of the county, with inland sites also supporting flocks of foraging or roosting Golden Plover.
- 9.9.18. The annual mortality rate for adult Golden Plover is 27%⁵⁵, which represents 405 birds each year (based on the county population estimate of 1,500 birds). The mortality predicted from the Proposed Development unmitigated is 7.4 deaths from collision each year, which represents an increase of 1.8% of the background mortality for the county population. This is considered to be a low magnitude, long-term, irreversible, adverse effect, that would be **not significant** to the local population.
- 9.9.19. In addition, embedded measures include provision for a CMMS secured via condition (**Section 9.6 Embedded Measures**), that will monitor collision rates and identify the need for mitigation measures, if required.

Operation Phase: Disturbance and Displacement

- 9.9.20. The operational phase of the Proposed Development could lead to the disturbance and displacement of roosting Golden Plover which in turn could lead to a reduction in survival rates for individual birds as a result of increased energy expenditure and the loss of favoured habitat. The impact on Golden Plover would potentially have an effect over the lifetime of the Proposed Development, though some habituation may occur.
- 9.9.21. The effects of displacement are often difficult to quantify and have been widely studied at wind farm sites across the UK and Europe, often with contradictory evidence or variation in the levels of effect. A review⁵⁴ collating the findings of 127 studies across European, American and Australian wind farm sites found that wind farms could have a displacement effect on Golden Plover, with effects detectable up

⁵⁵ BTO (2026). Bird Facts. Available at <https://www.bto.org/learn/about-birds/birdfacts> [Accessed July 2026].

to a mean distance of 175 m from turbine locations and a maximum distance of approximately 350 m.

- 9.9.22. In the UK, in particular in Scotland, studies⁵⁶ have been carried out with respect to breeding Golden Plover which have also shown displacement effects associated with wind farms, with effects detectable up to 200 m from turbine locations.
- 9.9.23. Precautionarily using the largest of these displacement distances (350 m), it is assumed that the Proposed Development could result in displacement of non-breeding Golden Plover from roosting at the Northern Array. The area utilised by Golden Plover within the Northern Array is approximately 150 m from Turbine 3 and 180 m from Turbine 1.
- 9.9.24. Golden Plover were sporadically recorded during the non-breeding seasons at the Development Site. No Golden Plover were recorded at the Development Site between September and December 2024, between February and March 2025, November 2025 or January 2026. Therefore, it is considered that Golden Plover likely utilise other sites in the wider area for the majority of the non-breeding season. Therefore, should Golden Plover be displaced by operational activities at the Development Site, the wider area would feature potential alternative refuge areas.
- 9.9.25. Considering the low frequency of non-breeding Golden Plover at the Development Site and the observed effects of displacement on Golden Plover by operational windfarms, the predicted displacement or disturbance during operation is considered to be a low magnitude, long-term, reversible, adverse effect, that would be **not significant** to the local population.

9.10 Assessment of Effects: Nightjar

Construction Phase: Disturbance and Displacement

- 9.10.1. Nightjar territories were not identified within the Development Site boundary, where the habitat comprised open grassland and exposed, treeless grass-heath that was unsuitable for nesting Nightjar. The Nightjar recorded during the baseline surveys were restricted to the young plantation, clear-fell and scrub adjacent to the Development Site. Therefore, the Proposed Development would not result in direct loss of suitable nesting habitat for Nightjar.
- 9.10.2. However, there are construction activities that may give rise to noise, visual or vibrational disturbance, as set out in **Chapter 4: Development Description** and in **Section 9.9.1**.
- 9.10.3. Breeding Nightjar rely on cryptic plumage to escape detection and only flush nests when a potential predator is close. One study recorded a maximum upper disturbance limit of <10 m during incubation and 50-100 m during chick rearing⁵⁷. A

⁵⁶ Pearce-Higgins, J.W., Stephen, L., Langston, R.W., Bainbridge, I.P. and Bullman, R. (2009) The distribution of breeding birds around upland wind farms. *Journal of Applied ecology*, 46: 1323-1331.

⁵⁷ Pearce-Higgins *et al* (2012) Greater impacts of wind farms on bird populations during construction than subsequent operation: results of a multi-site and multi-species analysis. *Journal of Applied Ecology*, Volume 49, Issue 2 April 2012, Pages 386-394.

further review of literature⁵⁸ recommends a safe working distance of 250 m at the nest-building stage (they create a shallow scrape to lay their eggs), reducing to 50 m at the nestling stage, while safe working distances of 50-200 m are recommended by Forestry Commission Scotland (now Scottish Forestry)⁵⁹. Studies of disturbance for Nightjar have found that impacts can occur within 500 m of a path with nest failures also occurring within 230 m of regular access routes⁶⁰. However, it was noted that these failures could be linked to predation by dogs or corvids alerted to the presence of nests by initial human presence.

- 9.10.4. Using a disturbance distance of 250 m, three territories fell within this distance of the construction footprint; all located north of the Northern Array. Two of these territories were located part way down the northwards facing valley (at approximate grid references: SS 87035 93320 and SS 86836 93356) and were approximately 200 m and 220 m away from Turbine 1. However, any suitable nesting habitat in this area was screened from the Development Site by trees and the topography of the land. The territory furthest east (at approximate grid reference SS 87190 93190) was approximately 70 m from the proposed substation and construction compound and is not screened from them. Potentially suitable nesting habitat extends up to 10 m north of the proposed substation and construction compound in the Northern Array.
- 9.10.5. As detailed in **Section 9.6 Embedded Measures**, a CEMP and CMS will be secured via DNS condition that set out measures to safeguard birds during construction. Such measures are set out in greater detail below:
- monitoring of breeding Nightjar to confirm their number and distribution;
 - scheduling of construction works at the Northern Array substation and construction compound to avoid key periods for Nightjar (core breeding season between mid-May and mid-August inclusive);
 - identification of “no walking” areas designed to minimise the risk of visual disturbance to breeding Nightjar; and
 - consideration of whether the use of visual screening is feasible on the Development Site, installed around the construction areas of the Northern Array substation and construction compound to minimise risk of human disturbance, and if unfeasible an alternative solution will be found as necessary.
- 9.10.6. Nightjar are a nocturnal species and are active after sunset and before sunrise. They begin egg-laying in mid-May and the fledglings are independent of their parents by mid-August. Working hours of construction will be restricted to 07:00-19:00, which is outside of the activity (courtship, nest-building etc.) of the Nightjar during their breeding season and therefore the risk of disturbance is reduced.
- 9.10.7. Based on the current design and assuming the adoption of embedded measures, the predicted disturbance of Nightjar during construction is considered to be a low

⁵⁸ Currie, F. & Elliott, G. (1997). *Forests and Birds: A Guide to Managing Forests for Rare Birds*. Forestry Authority, Cambridge and Royal Society for the Protection of Birds, Sandy, UK.

⁵⁹ FCS Guidance Note 32: Forest operations and birds in Scottish forests – the law and good practice. November 2006. Available online at: <https://www.forestry.gov.scot/publications/forest-operations-and-birds-scottish-forests> (Accessed July 2026).

⁶⁰ Murison, G (2002). The impact of human disturbance on the breeding success of nightjar *Caprimulgus europaeus* on heathlands in south Dorset, England. English Nature Research Reports No. 483. (Online) Available at: <http://publications.naturalengland.org.uk/publication/128027> (Accessed July 2026).

magnitude, temporary, diurnal, reversible, adverse effect, that would be **not significant** to the local population.

Operation Phase: Collision with Turbines

- 9.10.8. Current literature suggests that Nightjar mortality as a result of collision with wind turbines is an uncommon occurrence^{61, 62}. Nightjar are ground nesting and primarily feed on invertebrates, using feeding perches and catching insects at foliage heights of 1.5 – 5m. They also use such perches for territorial calling and to attract mates. As such, their typical behaviour does not bring them into risk of potential collisions with turbines. However, on a precautionary basis, further assessment has been completed, given the closest territory was recorded 200 m north of Turbine 1 and the closest suitable foraging habitat 70 m from Turbine 1 and 90 m from Turbine 2.
- 9.10.9. Being a nocturnal species, no Nightjar flights were recorded during the VP surveys and CRM could therefore not be completed. The closest suitable foraging habitat is 70 m away from the blade tips of Turbine 1 and 90 m away from the blade tips of Turbine 2. Considering the typically low flight height of foraging Nightjar, this buffer and the height of the blades are likely to be adequate to ensure that the risk of collisions by foraging Nightjar is limited.
- 9.10.10. However, uncertainty still remains around flight heights of Nightjar when commuting or migrating over the landscape, including through or over woodland. There is dense coniferous woodland adjacent to Turbine 2. As set out in **Section 9.6 Embedded Measures**, a minimum 50 m buffer will be maintained between turbine blade tips and the nearest point of woodland habitat, reducing the collision risk with any Nightjar commuting or migrating at height. Recording data on Nightjar flight height at night is not feasible, and therefore professional judgement is required to assess the potential level of the risk and significance of effect.
- 9.10.11. The typical lifespan of Nightjar is four years, with breeding at one year and 1-2 broods per season with on average two eggs, and an adult mortality rate of 30%⁵⁵. Small changes in the mortality rate are therefore unlikely to impact the integrity of the local population within the Study Area, which is estimated at 12 pairs. In light of this, the species' typical low flying behaviour and the relatively low suitability of habitats within the Development Site itself for foraging/commuting (and no notable breeding potential), although uncertain, the magnitude of this irreversible, long-term impact is considered to be low and potential adverse effects are considered **not significant**.
- 9.10.12. Embedded measures include provision for a CMMS secured via condition (**Section 9.6 Embedded Measures**), that will monitor collision rates and identify the need for mitigation measures, if required.

⁶¹ Rydell, J., Ottvall, R., Pettersson, S., and Green, M. (2017). The Effects of Wind Power on Birds and Bats-an updated synthesis report 2017. Gothenburg: Lund University.

⁶² Nicklin M.H. et al (2025). Operational Effects of Wind Farms in Commercial Plantation on European Nightjar *Caprimulgus europaeus*. The Welsh Ornithology Society. *Milvus* Volume 4: Issue 1.

Operation Phase: Disturbance and Displacement

- 9.10.13. During the operational phase of the Proposed Development, there is the potential for disturbance to Nightjar resulting from turbine noise which might lead to the displacement of breeding birds. In addition, the disturbance may cause changes in behaviour (increasing display flight or louder / more regular churring) which could cause greater energy expenditure within the birds that may affect breeding productivity.
- 9.10.14. A review⁶² of three long-term studies of Nightjar at wind farm sites in Wales (each lasting between eight to twelve years, commencing at the pre-planning stage and continuing through the construction and operation phases), identified no evidence of displacement, nor apparent impacts on productivity of Nightjar. The monitoring demonstrated that Nightjar readily nest in close proximity to operational turbines. The minimum distances between productive nests and the nearest operational turbines was 39 m, 43 m and 52 m across the three studies. No correlation between nest productivity and distance from the nearest operational turbine was found.
- 9.10.15. Studies conducted at operational wind farms in Sweden⁶³ have recorded male nightjars churring within 100 m of active turbines, with no evidence of displacement of breeding individuals during the first five years of operation.
- 9.10.16. Considering this evidence and the relatively low suitability of habitats within the Development Site for foraging/commuting (and no notable breeding potential), the predicted displacement or disturbance of Nightjar during operation is considered to be a low magnitude, long-term, reversible, adverse effect, that would be **not significant** to the local population.

9.11 Assessment of Effects: Goshawk

Construction Phase: Disturbance and Displacement

- 9.11.1. There are construction activities that may give rise to noise, visual or vibrational disturbance to breeding Goshawk, as set out in **Chapter 4: Development Description** and in **Section 9.9.1**. Construction will require the presence of multiple contractors and the use of heavy plant and other machinery.
- 9.11.2. No nests sites of Goshawk were identified within 1 km of the Development Site in 2025 or 2026, though suitable nesting habitat was identified for potential future breeding within 500 m of the works (north and east of the Northern Array and north and south-east of the Southern Array).
- 9.11.3. In the UK, Goshawk favour woodland and forestry for nesting and are susceptible to disturbance, in particular during incubation and early nestling stages⁶⁴. Suggested safe working distances (designed to avoid disturbance) have been identified as

⁶³ Naturcentrum AB. (2015). The Uddared wind farm – a follow-up to birds and bats. Report for Stena Renewable AB

⁶⁴ Ruddock, M., Whitfield, D.P., (2007). A review of disturbance distances in selected bird species. Report from Natural Research (Projects) Ltd. to Scottish Natural Heritage. Natural Research, Banchory, UK.

needing to be between 250 m and 500 m by several authors^{58, 65, 66, 67 68}. There is some variation in recommendations with Petty (1996)⁶⁶ suggesting that reductions of buffers down to 200 m can occur, especially during the later stages of nesting. More recent recommendations⁶⁷ suggests that maintaining a buffer of 400 m ensures that fledglings do not prematurely leave nests.

- 9.11.4. Regarding visual disturbance, Goshawk favour nest sites within dense forestry and tree cover. If breeding Goshawk become established within 500 m of the Development Site, it is highly likely that any nesting location would provide natural visual screening regardless of position on the Development Site.
- 9.11.5. Of the construction works identified, those with the highest potential to cause noise disturbance include works to create the wind turbine foundation, installation of crane pads and the final turbine installation.
- 9.11.6. The construction works programme has been estimated to be 22 months in length though the exact start date has not yet been identified. Given the length and nature of the work it is assumed that that opportunities for scheduling works to avoid specific constraints would be possible to some degree. As detailed in **Section 9.6 Embedded Measures**, a CEMP and CMS will be secured via DNS condition that set out measures to safeguard birds during construction. Such measures are set out in greater detail below:
 - monitoring of suitable habitat prior to construction to identify active Goshawk nest locations;
 - phasing and timing of construction works to avoid key nesting periods such as incubation and early stages of young rearing at the nearest turbines; and
 - establishment of “no activity” buffers adjacent to known nest sites. These would be on a case-by-case basis dependant on the positioning and location of any nest site and the nature of any working activities required.
- 9.11.7. Taking into account the likely positioning of any future nest sites, the identified construction methods and locations and the proposed embedded measures, the predicted disturbance of breeding Goshawk during construction is considered to be a low magnitude, temporary, diurnal, reversible, adverse effect, that would be **not significant** to the local population.

Operation Phase: Collision with Turbines

- 9.11.8. Mortality from collision with turbines has the potential to lead to a decline in the local population of Goshawk. In view of this, CRM was carried out based on Goshawk flight data collected from VP surveys undertaken between October 2024 and March 2026. VP surveys during the breeding season of 2026 are ongoing.

⁶⁵ Petty, S.J. (1989). Goshawks, their status, requirements and management. Forestry Commission Bulletin, 81. HMSO; London.

⁶⁶ Petty, S.J. (1996). Reducing the disturbance to goshawks during the breeding season. Forestry Commission Research Information Note, 267. Forestry Commission; Edinburgh.

⁶⁷ Richter, D.J. (2005). Territory occupancy, reproductive success and nest site characteristics of goshawks on managed timberlands in central and northern California 1993-2000. California Fish and Game, 91, 100-118.

⁶⁸ Jones, S. (1979). The Accipiters, Goshawk, Cooper's Hawk, Sharp-shinned Hawk. U.S. Bureau of Land Management Technical Note 335. 51 pp

- 9.11.9. The methods, workings and results of the CRM for Goshawk is provided in **Appendix 9B Bird Collision Risk Modelling Report**.
- 9.11.10. **Table 9.23** provides a summary of the CRM results for Goshawk, with the predicted number of collisions for Goshawk annually and over the 30-year operation of the Proposed Development. Modelling for Goshawk was carried out using the recommended avoidance rate of 98%¹⁵.

Table 9.23 Predicted collision rates for Goshawk

Species	Avoidance rate	Modelled collisions per year	Modelled collisions over 30 years
Goshawk	98%	0.2	6

- 9.11.11. Results from the CRM of the VP survey data predict that the potential rate of collisions for Goshawk would be 0.2 collisions per year, equivalent to six birds over 30 years.
- 9.11.12. Within East Glamorgan, 19 Goshawk nest sites were recorded in 2022²⁸. Using this as a basis and taking into consideration juvenile survival rates and estimated clutch sizes⁶⁹, the total population (including adults and immature birds) in East Glamorgan is estimated to be 65 individuals.
- 9.11.13. The annual mortality rate for adult Goshawk is 17%⁶⁹, which represents 11 birds each year (based on the county population estimate of 65 birds). The mortality predicted from the Proposed Development unmitigated is one death from collision every 5 years, which represents an increase of 1.8% of the background mortality for the county population. This is considered to be a low magnitude, long-term, irreversible, adverse effect, that would be **not significant** to the local population.
- 9.11.14. In addition, embedded measures include provision for a CMMS secured via condition (**Section 9.6 Embedded Measures**), that will monitor collision rates and identify the need for mitigation measures, if required.

Operation Phase: Disturbance and Displacement

- 9.11.15. The operational phase of the Proposed Development could lead to the displacement of nesting and foraging birds and a reduction in reproductive success for the Goshawk population within the area. The impact on Goshawk would potentially have an effect over the lifetime of the Proposed Development, though habituation may occur.
- 9.11.16. A review⁷⁰ found that most bird species were unlikely to be affected by the operational disturbance of a wind farm beyond 600 m, and another review¹⁹ found little evidence of any disturbance effects from wind farms on Goshawk beyond 500 m.

⁶⁹ BTO (2026). Bird Facts. Available at <https://www.bto.org/learn/about-birds/birdfacts> [Accessed July 2026].

⁷⁰ Drewitt, A.L & Langston, R.H.W. (2006). Assessing the impacts of wind farms on birds. Ibis 148, 29-42.

- 9.11.17. A North American study⁷¹ of Goshawk (including radio tracking), found the species selected foraging sites not on the basis of prey abundance, but by prey availability determined by the structure of the forest in which they bred. It concluded that Goshawk are morphologically adapted to hunting in relatively dense areas of forestry (rather than open habitats such as those where the turbines will be located in the Development Site) and thus would not select more open areas for foraging. These findings are in keeping of the observations recorded on the Development Site with flights over open areas infrequent and often short in length as an individual moves between areas of woodland. The majority of flights were associated with the woodland and forestry habitats found to the east of the Northern Array and the north of the Southern Array.
- 9.11.18. There is a scarcity of specific evidence to indicate whether or not disturbance or displacement of Goshawk can occur as a result of the presence and operation of a wind farm. However, it is noted that within Wales and the United Kingdom, onshore wind farm sites are widespread and often occur in close proximity to commercial forestry that supports breeding Goshawk. Given the tolerance that this species shows for nesting in commercial forestry, adapting to changes in tree cover, it is considered that birds could also be tolerant to other changes in the wider landscape. The number of breeding Goshawk continues to increase across Wales²⁸ despite the development of an increasing number of wind farms in rural areas adjacent to forestry.
- 9.11.19. Therefore, considering the current breeding status of Goshawk within the area local to the Proposed Development and the behavioural responses of this species to disturbance, the predicted displacement or disturbance during operation is considered to be a low magnitude, long-term, reversible, adverse effect, that would be **not significant** to the local population.
- 9.11.20. In addition, embedded measures include provision for a CMMS secured via condition (**Section 9.6 Embedded Measures**), that will monitor collision rates and identify the need for mitigation measures, if required.

9.12 Assessment of Effects: Red Kite

- 9.12.1. Mortality from collision has the potential to lead to a decline in the local population of Red Kite. In view of this, CRM was carried out based on Red Kite flight data collected from VP surveys undertaken between October 2024 and March 2026. VP surveys during the breeding season of 2026 are ongoing.
- 9.12.2. The methods, workings and results of the CRM for Red Kite is provided in **Appendix 9B Bird Collision Risk Modelling Report**.
- 9.12.3. **Table 9.24** provides a summary of the CRM results for Red Kite, with the predicted number of collisions for Red Kite annually and over the 30-year operation of the Proposed Development. Modelling for Red Kite was carried out using the recommended avoidance rate of 99%¹⁵.

⁷¹ Beier, P. & Drennan, J.E. (1997). Forest structure and prey abundance in foraging areas of northern goshawks. *Ecological Applications* 7(2), 1997, pp564-571.

Table 9.24 Predicted collision rates for Red Kite

Species	Avoidance rate	Modelled collisions per year	Modelled collisions over 30 years
Red Kite	99%	1.2	39

- 9.12.4. Results from the CRM of the VP survey data predict that the potential rate of collisions for Red Kite would be 1.2 collisions per year, equivalent to 36 birds over 30 years.
- 9.12.5. No up-to-date population estimate for Red Kite within Bridgend County Borough or the former East Glamorgan is available, though 12 nest sites were recorded East Glamorgan in 2021⁷². Using this as a basis and taking into consideration juvenile survival rates and estimated clutch sizes⁶⁹ the total population (including adults and immature birds) in East Glamorgan is estimated to be 36 individuals.
- 9.12.6. The annual mortality rate for adult Red Kite is 39%⁷², which represents 14 birds each year (based on the county population estimate of 36 birds). The mortality predicted from the Proposed Development unmitigated is 1.2 deaths from collision each year, which represents an increase of 8.6% of the background mortality for the county population.
- 9.12.7. Estimating the impacts on the county population of Red Kite is complicated by the absence of accurate estimates of the number of breeding pairs present within Bridgend County Borough or the wider Glamorgan area. Red Kites are current experiencing an increase in numbers across Wales and the UK, with key populations in Powys, Shropshire and Carmarthenshire which could result in movement of individual Red Kite between counties as they search for breeding locations. Research in Wales⁷³ suggests that individuals move up to 22 km between birthplace and breeding place though many birds remain local to their chosen location year to year.
- 9.12.8. Whilst the loss of 1-2 birds each year from the local population could have an impact at a local level, immigration into the area from neighbouring counties is likely to balance any loss from collision. If the population growth rate of Red Kite in Bridgend County Borough (or the wider Glamorgan area) were to stabilise due to density dependent factors (such as the availability of suitable breeding and foraging habitat), then the population would likely benefit from birds relocating into the area from neighbouring counties, where birds unable to establish a suitable breeding territory explore more widely to establish a territory.
- 9.12.9. Based on the observed flight activity levels and the outputs of CRM, and high recruitment rate of Red Kite through immigration, the predicted collision rate of Red Kite is considered to be a low magnitude, long-term, irreversible, adverse effect, that would be **not significant** to the local population.

⁷² BTO (2026). Bird Facts. Available at <https://www.bto.org/learn/about-birds/birdfacts> [Accessed July 2026].

⁷³ Newton, I., Davis, P. E., and Davis, J. E. (2008) Age of first breeding, dispersal and survival of Red Kites *Milvus milvus* in Wales. *Ibis* 131(1):16-21

- 9.12.10. In addition, embedded measures include provision for a CMMS secured via condition (**Section 9.6 Embedded Measures**), that will monitor collision rates and identify the need for mitigation measures, if required.

9.13 Assessment of Effects: Kestrel

Operation Phase: Collision with Turbines

- 9.13.1. Mortality from collision has the potential to lead to a decline in the local population of Kestrel. In view of this, CRM was carried out based on Kestrel flight data collected from VP surveys undertaken between October 2024 and March 2026. VP surveys during the breeding season of 2026 are ongoing.
- 9.13.2. The methods, workings and results of the CRM for Kestrel is provided in **Appendix 9B Bird Collision Risk Modelling Report**.
- 9.13.3. **Table 9.25** provides a summary of the CRM results for Kestrel, with the predicted number of collisions for Kestrel annually and over the 30-year operation of the Proposed Development. Kestrel is sensitive to colliding with turbines owing to their hunting style and as such modelling for Kestrel was carried out using the recommended avoidance rate of 95%¹⁵.

Table 9.25 Predicted collision rates for Kestrel

Species	Avoidance rate	Modelled collisions per year	Modelled collisions over 30 years
Kestrel	95%	1.3	39

- 9.13.4. Results from the CRM of the VP survey data predict that the potential rate of collisions for Kestrel would be 1.3 collisions per year, equivalent to 39 birds over 30 years.
- 9.13.5. The CRM is based on data from two non-breeding seasons but only one breeding season. Considering Kestrel were only recorded at the Development Site between July and March, this predicted collision rate is considered an overestimate as there is double the amount of data from non-breeding seasons. The Final ES will include CRM based on two entire years of data and therefore be a more accurate estimation and will likely predict a lower collision rate.
- 9.13.6. Within East Glamorgan, 24 Kestrel nest sites were recorded in 2022²⁸. Using this as a basis and taking into consideration juvenile survival rates and estimated clutch sizes⁶⁹ the total population (including adults and immature birds) in East Glamorgan is estimated to be 83 individuals.
- 9.13.7. The annual mortality rate for adult Kestrel is 31%⁷⁴, which represents 26 birds each year (based on the county population estimate of 83 birds). The mortality predicted from the Proposed Development unmitigated is 1.3 deaths from collision every year,

⁷⁴ BTO (2026). Bird Facts. Available at <https://www.bto.org/learn/about-birds/birdfacts> [Accessed July 2026].

which represents an increase of 5.0% of the background mortality for the county population.

- 9.13.8. Kestrel have an average clutch size of 4-5 eggs which is a relatively high reproductivity rate, meaning that small increases in mortality are less likely to affect the integrity of the local population.
- 9.13.9. Based on the observed flight activity levels and the outputs of CRM, and high reproductivity rate of Kestrel, the predicted collision rate of Kestrel is considered to be a low magnitude, long-term, irreversible, adverse effect, that would be **not significant** to the local population.
- 9.13.10. In addition, embedded measures include provision for a CMMS secured via condition (**Section 9.6 Embedded Measures**), that will monitor collision rates and identify the need for mitigation measures, if required.

9.14 Assessment of Effects: Peregrine

Operation Phase: Collision with Turbines

- 9.14.1. Mortality from collision has the potential to lead to a decline in the local population of Peregrine. In view of this, CRM was carried out based on Peregrine flight data collected from VP surveys undertaken between October 2024 and March 2026. VP surveys during the breeding season of 2026 are ongoing.
- 9.14.2. The methods, workings and results of the CRM for Peregrine is provided in **Appendix 9B Bird Collision Risk Modelling Report**.
- 9.14.3. **Table 9.25** provides a summary of the CRM results for Peregrine, with the predicted number of collisions for Peregrine annually and over the 30-year operation of the Proposed Development. Modelling for Peregrine was carried out using the recommended avoidance rate of 98%¹⁵.

Table 9.26 Predicted collision rates for Kestrel

Species	Avoidance rate	Modelled collisions per year	Modelled collisions over 30 years
Kestrel	98%	0.0	0

- 9.14.4. Results from the CRM of the VP survey data predict that the potential rate of collisions for Kestrel would be 0.0 collisions per year, equivalent to 0 birds over 30 years.
- 9.14.5. Based on the on the observed flight activity levels and the outputs of CRM, the operation of the proposed turbines is anticipated to have **negligible effects** on the local Peregrine population.

9.15 Assessment of Effects: Breeding Bird Assemblage (Grassland and Grass-heath Assemblage)

Construction Phase: Permanent and Temporary Habitat Loss

- 9.15.1. Within the boundaries of the Northern Array and Southern Array, the habitats comprise grassland and grass-heath.
- 9.15.2. Permanent and temporary land-take to facilitate the construction of the turbines and associated infrastructure has the potential to reduce the availability of nesting, foraging and/or resting habitats for the breeding bird assemblage of the grassland and grass-heath habitats.
- 9.15.3. The Proposed Development will result in the permanent loss of 3.75 ha of grassland and grass-heath habitat, where turbine foundations, crane pads, substation compounds and internal access tracks are proposed. The Proposed Development will result in a further temporary loss of 1.27 ha of grassland and grass-heath habitat during the construction phase, where temporary site compounds, cabling trenching and crane pad extensions are proposed. These temporary areas of habitat loss will be dressed back with topsoil and landscaped into the surrounding area upon completion of construction. Therefore, there will be a total loss of 5.02 ha of grassland and grass-heath habitats during the construction phase. A full description of the layout of the Proposed Development is provided in **Chapter 4: Development Description** and is shown in **Figure 1.3** and **Figure 1.4**.
- 9.15.4. The construction footprint within the Northern Array and Southern Array includes breeding habitat used by Secondary Species recorded during the baseline surveys, comprising Skylark and Meadow Pipit. Territory analysis has yet to be undertaken on the data from the general breeding bird surveys and therefore the number of territories affected cannot be provided in this Draft ES but will be provided in the Final ES. As an estimation in the meantime and taking Skylark as a proxy, breeding densities in optimum habitats can equate to a maximum of 1 nesting pair per hectare⁷⁵; as such, the loss of 5.02 ha would potentially result in the displacement of five to six pairs. It is considered likely the magnitude and extent of impact upon Meadow Pipit would be equally low, particularly in the context of population sizes and wider habitat availability.
- 9.15.5. There is considered to be adequate retained grassland and grass-heath habitats away from the construction footprint areas, to absorb some level of localised displacement during the breeding season.
- 9.15.6. As detailed in **Section 9.6 Embedded Measures**, a HMP and CEMP will be secured via DNS condition that set out measures to safeguard birds during construction. Such measures are set out in greater detail below:

⁷⁵ Browne, S., Vickery, J., and Chamberlain, D. (2000). Densities and population estimates of breeding skylarks *Alauda arvensis* in Britain in 1997. *Bird Study*, 47:1, 52-65.

- Compensation for habitat losses by enhancing retained habitats and potentially increasing their suitability to support nesting (and wintering) birds through appropriate long-term management and monitoring.
- Management of habitats outside of the breeding season prior to construction to discourage breeding birds in working areas and minimise the risk of direct injury to individual birds or damage / destruction of individual nests.
- Employment of Ecological Clerks of Works (ECoWs) during construction to identify and protect active bird nests where work during the breeding bird season is unavoidable.

- 9.15.7. Based on the low species diversity of the assemblage, the relatively small area of land take and the use of embedded measures to minimise impacts, the loss of grassland and grass-heath is considered to be a low magnitude, long-term, irreversible, adverse effect, that would be **not significant** to local populations.

9.16 Assessment of Effects: Breeding Bird Assemblage (Woodland, Clear-fell and Scrub Assemblage)

Construction Phase: Permanent and Temporary Habitat Loss

- 9.16.1. A minimum 50 m buffer will be maintained between turbine blade tips and the nearest woodland and treelines to reduce the collision risk for Nightjar. This 50 m buffer will most likely be achieved by micro-siting turbine locations. However, there is a possibility that trees will be felled in the coniferous plantation north of Turbine 2 to achieve the 50 m buffer if micro-siting is not feasible. This possible tree-felling has precautionarily been included in this ornithological assessment.
- 9.16.2. The tree felling would result in the maximum permanent loss of 0.08 ha of coniferous plantation north of Turbine 2, though likely less than this. The layout of the Proposed Development in the Northern Array is shown in **Figure 1.3**.
- 9.16.3. This permanent habitat loss has the potential to reduce the availability of nesting, foraging and/or resting habitats for the breeding bird assemblage of the coniferous plantation habitat. The plantation is a monoculture of Sitka Spruce *Picea sitchensis* comprising semi-mature trees with no age diversity and few cavities for cavity-nesting species.
- 9.16.4. The footprint of this potential tree-felling includes breeding habitat used by Secondary Species recorded during the baseline surveys, comprising Dunnock and Chaffinch (both are BoCC4 Amber list species). In this small area it is presumed only one nesting pair of each species would be affected.
- 9.16.5. There is considered to be adequate retained coniferous plantation away from the construction footprint area to absorb some level of localised displacement during the breeding season.
- 9.16.6. As detailed in **Section 9.6 Embedded Measures**, a HMP and CEMP will be secured via DNS condition that set out measures to safeguard birds during construction. Such measures are set out in greater detail below:

- Compensatory planting in accordance with those requirements set out within PPW 12⁹, with a minimum ratio of at least three trees planted for every one tree lost.
- Employment of ECoW during construction to identify and protect active bird nests where work during the breeding bird season is unavoidable.

9.16.7. Based on the low species diversity of the assemblage in the affected area, the small area of land take and the use of embedded measures to minimise impacts, the loss of conifers is considered to be a low magnitude, long-term, irreversible, adverse effect, that would be **not significant** to local populations.

9.17 Assessment of Cumulative (Inter-project) Effects

- 9.17.1. A cumulative effects assessment has been undertaken for the Proposed Development which considers the combined impacts with other developments on the same single receptor or resource (inter-project effects). The detailed methodology followed in identifying and assessing potential cumulative effects is set out in **Section 2.8** of **Chapter 2**.
- 9.17.2. Consideration has been given as to whether any of the ornithology receptors that have been taken forward for assessment in this chapter are likely to be subject to cumulative effects because of ornithology effects generated by other developments.
- 9.17.3. Only developments (including other wind farms) which are either built, consented or with submitted planning applications have been considered within 10 km of the Development Site.
- 9.17.4. Details of the approach for identifying other developments are included in **Chapter 2** with a full list of developments provided in **Table 2.4**.
- 9.17.5. **Table 9.27** provides a summary of the projects identified that have potential to have impacts on ornithology receptors.

Table 9.27 Sites within 10 km subject to Cumulative Effects Assessment

Development	Local Authority	Description	Proximity of Project	Status	Ornithology Constraints
P/22/34/FUL – Residential Development	Bridgend County Borough	Application for a residential development of 20no. affordable dwellings and associated works.	1.1km north-west	Consented	Urban site consisting of hardstanding and scrub. Preliminary Ecological Appraisal (PEA) identified common nesting birds within scrub as a constraint.
Foel Trawsnant Windfarm Connection (DNS CAS-02505-N3T6M4)	Bridgend County Borough	Application for a 66kV electricity network infrastructure connection comprising overhead lines and underground cables and associated development.	1.5 km west	Under Consideration	Nightjar, Goshawk, Red Kite, Kestrel recorded. Collision risk considered to have no significant effects.
P/25/648/SOR – Residential Development	Bridgend County Borough	EIA Screening Request for 140 dwellings Southwest of Pont Rhyd-y-Cyff.	1.6 km south-west	Pre-Application	Agriculturally improved grassland of limited biodiversity value adjacent to hedgerows, mature woodland and a river.
P/24/313/FUL – Residential Development	Bridgend County Borough	Application for the erection of 82 new units (73 dwellings and 9 flats), open space, landscaping, access roads and paths and associated infrastructure.	1.7 km south-west	Under Consideration	PEA identified as a constraint common nesting birds within the hedgerows and trees of the 2.2 ha site.
P/24/457/FUL – Residential Development	Bridgend County Borough	Proposed residential development of up to 122 new dwellings, access, landscaping, drainage, peat translocation and enhancements, biodiversity enhancements, engineering and associated works.	2.0 km south-west	Under Consideration	PEA identified as a constraint common nesting birds within the woodland, trees, hedgerows and dense scrub.
Y Bryn Wind Farm (DNS/3264571)	Bridgend County Borough	Application for the installation of up to 18 wind turbines with a maximum tip height of 250m.	2.4 km west	Refused (Under Judicial Review)	Nightjar and Goshawk identified as important receptors. Predicted collision rate of 0.04 Goshawk per year. No significant effects identified.

Development	Local Authority	Description	Proximity of Project	Status	Ornithology Constraints
P/23/226/OUT – Residential Development	Bridgend County Borough	Proposed outline application with all matters reserved for 80no. residential dwellings, commercial uses and associated works.	2.9 km south	Under Consideration	PEA identified as a constraint common nesting birds within the hedgerows, treelines, broadleaved woodland and scrub. The grassland potentially suitable for Meadow Pipit and Skylark.
P/25/597/FUL – Cwm Risca Wind Turbines	Bridgend County Borough	Application for the removal of existing two wind turbines and erection of replacement wind turbine, up to 101.5m blade tip height, and associated development.	3.1 km south	Under Consideration	PEA considered collision risk of birds not to significantly increase from the baseline as one turbine will replace two existing turbines.
Mynydd Ty-talwyn Energy Park (DNS CAS-03018-G7G6H7)	Bridgend County Borough	Installation of an Energy Park comprising up to 6 wind turbines (maximum tip height of 200m) and ancillary infrastructure including turbine foundations, crane hardstanding and erection areas; Solar PV Panels and ancillary infrastructure.	3.7 km south-west	Pre-Application	Scoping report identified Nightjar, low levels of flight activity of Golden Plover and Kestrel and moderate levels of Red Kite. CRM yet to be completed.
Upper Ogmere – Wind Turbines (DNS/3213662)	Bridgend County Borough	Application for the erection of seven wind turbines (four with a maximum tip height of 149.9m and three with a maximum tip height of 130m) and associated infrastructure	4.4 km north-east	Consented	Golden Plover – 0.24 collisions per year Red Kite – 0.31 collisions per year Kestrel – 0.28 collisions per year No significant effect on Golden Plover and Red Kite. Local significant effect on Kestrel.
Ty'n Y Waun Solar (DNS/3279521)	Bridgend County Borough	Application for a 50MW ground mounted photovoltaic solar farm with associated equipment, infrastructure, grid connection and ancillary works.	6.4 km south-east	Consented	No important ornithological receptors of the Proposed Development identified as important receptors of this development.

Development	Local Authority	Description	Proximity of Project	Status	Ornithology Constraints
Mynydd y Gaer (DNS CAS-01773-Z5L1D0)	Bridgend County Borough	Application for the construction and operation of up to 11 wind turbines and associated infrastructure.	6.7 km south-east	Under Consideration	Golden Plover – 0.91 collisions per year Goshawk – 0.10 collisions per year Red Kite – 2.77 collisions per year Kestrel – 2.83 collisions per year No significant effect on Golden Plover and Goshawk. Minor adverse effect on Red Kite and Kestrel. Permanent displacement considered minor adverse effect for Golden Plover
Mynydd Fforch Dwm Wind Farm (DNS/3255801)	Neath Port Talbot	Application for the construction and operation of up to six wind turbines and associated infrastructure, including: up to approximately 10.0 hectares of solar PV panels, mounted on frames fixed to the ground, with associated inverters, security fencing and CCTV system	6.9 km north-west	Consented	Red Kite – 0.323 collisions per year. No significant effect on Red Kite.
Mynydd Emroch Solar Farm (DNS CAS-02430-B1L0D2)	Neath Port Talbot	Application for a proposed 50 MW ground mounted photovoltaic solar farm with associated equipment, infrastructure, grid connection and ancillary works.	7.7 km west	Consented	EIA Screening Report does not identify ornithological constraints.
P/25/507/HYB – Hybrid Application	Bridgend County Borough	Hybrid planning application (outline/full) for a residential development for up to 850 homes, public open space and a primary school, alongside landscaping, drainage, Green Infrastructure with vehicular and pedestrian/cycle access	8.9 km south	Under Consideration	No important ornithological receptors of the Proposed Development identified as important receptors of this development.

Operation Phase: Collision with Turbines

Golden Plover

- 9.17.6. Of the developments where CRM was available, Upper Ogmere and Mynydd y Gaer identified Golden Plover as an important Ornithological receptor. CRM of these developments predicted an annual Golden Plover mortality of 0.24 birds and 0.91 birds respectively. The annual Golden Plover mortality predicted from the Proposed Development is 7.4 birds, therefore combining the annual mortality of the two developments totals 8.55 birds.
- 9.17.7. The annual mortality rate for adult Golden Plover is 27%, which represents 405 birds each year within East Glamorgan (based on the county population estimate of 1,500 birds).
- 9.17.8. The combined annual mortality of the three developments represents an increase of 2.11% of the background mortality for the county population. This is considered to be a low magnitude, long-term, irreversible, adverse effect, that would be **not significant** to the local population.

Goshawk

- 9.17.9. Of the developments where CRM was available, Y Bryn Wind Farm and Mynydd y Gaer identified Goshawk as an important ornithological receptor. CRM of these developments predicted an annual Goshawk mortality of 0.04 birds and 0.10 birds respectively. The annual Goshawk mortality predicted from the Proposed Development is 0.2 birds, therefore combining the annual mortality of the three developments totals 0.34 birds.
- 9.17.10. The annual background mortality rate for adult Goshawk is 17%, which represents 11 birds each year within East Glamorgan (based on the county population estimate of 65 birds).
- 9.17.11. The combined annual mortality of the three developments represents an increase of 3.09% of the background mortality for the county population. This is considered to be a low magnitude, long-term, irreversible, adverse effect, that would be **not significant** to the local population.

Red Kite

- 9.17.12. Of the developments where CRM was available, Upper Ogmere, Mynydd y Gaer and Mynydd Fforch Dwm Wind Farm identified Red Kite as an important Ornithological receptor. CRM of these developments predicted an annual Red Kite mortality of 0.31 birds, 2.77 birds and 0.323 birds respectively. The annual Red Kite mortality predicted from the Proposed Development is 1.2 birds, therefore combining the annual mortality of the four developments totals 4.603 birds.
- 9.17.13. Mynydd Fforch Dwm Wind Farm is located within the area covered by the Gower County bird report. Three Red Kite nests were recorded in the Gower County in 2022. Using this as a basis and taking into consideration juvenile survival rates and

estimated clutch sizes, the total population (including adults and immature birds) in the Gower is estimated to be nine individuals.

- 9.17.14. The annual background mortality rate for adult Red Kite is 39%, which represents 18 birds each year within East Glamorgan and the Gower (based on a combined population estimate of East Glamorgan and the Gower of 45 birds).
- 9.17.15. The combined annual mortality of the four developments represents an increase of 25.6% of the background mortality for the population of the two counties. However, 60% of the predicted collision mortality in the two counties is due to a single proposed wind farm: Mynydd y Gaer. It is assumed that this windfarm will require mitigation to avoid significant adverse effects on the county Red Kite population; none is currently proposed in the ES but the project is still under consideration. The predicted Red Kite collision rate for Mynydd y Gaer wind farm is over 2.3 times greater than the predicted collision rate for the Proposed Development, and the Proposed Development is not considered to significantly contribute to the adverse effect on the county population of Red Kite. Excluding Mynydd y Gaer, the combined collision mortality rate of the other developments represents an increase of 10.2% of the background mortality for the population of the two counties. Considering the high recruitment rate of Red Kite through immigration into the two counties, this is considered to be a low magnitude, long-term, irreversible, adverse effect, that would be **not significant** to the local population.

Kestrel

- 9.17.16. Of the developments where CRM was available, Upper Ogmere and Mynydd y Gaer identified Kestrel as an important Ornithological receptor. CRM of these developments predicted an annual Kestrel mortality of 0.28 birds and 2.83 birds respectively. The annual Kestrel mortality predicted from the Proposed Development is 1.3 birds, therefore combining the annual mortality of the three developments totals 4.41 birds.
- 9.17.17. The annual mortality rate for adult Kestrel is 31%, which represents 26 birds each year in East Glamorgan (based on the county population estimate of 83 birds).
- 9.17.18. The combined annual mortality of the three developments represents an increase of 17.0% of the background mortality for the county population. However, 64% of the predicted collision mortality in the county is due to the proposed Mynydd y Gaer wind farm. It is assumed that this wind farm will require mitigation to avoid significant effects on the county Kestrel population; none is currently proposed in the ES but the project is still under consideration. The predicted Kestrel collision rate for Mynydd y Gaer wind farm is over 2.2 times greater than the predicted collision rate for the Proposed Development, and the Proposed Development is not considered to significantly contribute the adverse effect on the county population of Kestrel. Excluding Mynydd y Gaer, the collision mortality rate of the Proposed Development represents an increase of 6.1% of the background mortality for the county population. Considering the relatively high reproductivity rate of Kestrel, this is considered to be a low magnitude, long-term, irreversible, adverse effect, that would be **not significant** to the local population.

Operation Phase: Disturbance and Displacement

Golden Plover

- 9.17.19. Developments that were not wind farms were included in the cumulative effects assessment, to identify if Golden Plover were likely to be displaced from any of these sites. However, no developments that were not wind farms identified Golden Plover as important receptors.
- 9.17.20. Of the wind farm developments where ES chapters or Baseline reports were available, Mynydd Ty-talwyn Energy Park and Mynydd y Gaer identified Golden Plover on their sites during the non-breeding season. An EIA is yet to be completed for Mynydd Ty-talwyn Energy Park, but over the two years of VP surveys completed at this site, only one flight of four Golden Plover was recorded, and any impacts of the development would unlikely have any significant displacement effect on the Golden Plover population.
- 9.17.21. Mynydd-y-Gaer identified permanent displacement of non-breeding Golden Plover during operation as a low magnitude impact of minor significance. Over two years of survey, 33 flights of Golden Plover were recorded during the non-breeding season, with a peak count of 40 birds.
- 9.17.22. The cumulative effect of displacement of Golden Plover during operation at Mynydd y Gaer and the Proposed Development is considered to be **not significant** to the county population considering the low frequency of use of the Development Site, the low number recorded at Mynydd y Gaer, and the abundance of other suitable habitat within the wider landscape to use as refuges.

Conclusion

- 9.17.23. The Mynydd y Gaer windfarm is predicted to cause high rates of collision for both Red Kite and Kestrel. It is assumed that this wind farm will require mitigation to avoid significant effects on the county populations of Red Kite and Kestrel; none is currently proposed in the ES, but the project is still under consideration and mitigation will lower these predicted collisions rates. The Proposed Development is not considered to significantly contribute these adverse effects.

9.18 Significance Conclusions

- 9.18.1. A summary of the results of the ornithological assessment is provided in **Table 9.28**.

Table 9.28 Summary of significance of effects

Receptor and summary of predicted effects	Sensitivity / importance / value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale
Golden Plover				
Noise, visual and vibrational stimuli during construction resulting in disturbance and displacement.	County	Low	Not significant	Golden Plover were recorded sporadically roosting during the non-breeding season within the Northern Array at a location that is 150 m from Turbine 3 and its access route and 180 m from Turbine 1. Sporadic use indicates the birds use alternative sites in the wider area the majority of the time, which they could use if temporarily displaced from the Development Site during construction. Embedded measures will minimise disturbance within sensitive areas, such as scheduling construction to avoid key periods for Golden Plover, and identification of no walking zones.
Physical changes to the spatial environment from operating turbines that could result in collision, injury and fatality.	County	Low	Not significant	Analysis using CRM suggests that the number of Golden Plover that could collide with operational turbines represents a small increase (1.8%) of annual mortality rates with 7.4 collisions predicted each year. This is likely an overestimation as the data collected is from two non-breeding seasons but only one breeding season. Embedded measures include the monitoring of collision rates during operation and will identify if any mitigation is required.
Noise, visual and vibrational stimuli during operation resulting in disturbance and displacement.	County	Low	Not significant	Golden Plover recorded sporadically roosting during the non-breeding season within the Northern Array at a location that is 150 m from Turbine 3 and its access route and 180 m from Turbine 1.

Receptor and summary of predicted effects	Sensitivity / importance / value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale
				Sporadic use indicates the birds use alternative sites in the wider area the majority of the time, which they could use if displaced from the Development Site.
Nightjar				
Noise, visual and vibrational stimuli during construction resulting in disturbance and displacement.	County	Low	Not significant	A Nightjar territory that is not screened from the construction works was recorded 70 m north of the proposed substation and construction compound in the Northern Array. Potentially suitable nesting habitat extends up to 10m north of these construction areas. Working hours will be between 07:00-19:00 which is outside the active hours of Nightjar during their breeding season. Embedded measures will minimise disturbance within sensitive areas, such as scheduling construction to avoid key periods for Nightjar, and identification of no walking zones.
Physical changes to the spatial environment from operating turbines that could result in collision, injury and fatality.	County	Low	Not significant	The habitat suitability within the Development Site for foraging Nightjar is considered low and they were only recorded outside the Development Site boundary. Current literature suggests that Nightjar mortality as a result of collision with wind turbines is an uncommon occurrence. Their typical flight height while foraging does not bring them into risk of potential collision with turbines. Embedded measures will include maintaining a minimum 50 m buffer between turbine blade tips and woodland, reducing the collision risk of any Nightjar commuting or migrating at height. The measures will also include the monitoring of collision rates during operation and will identify if any mitigation is required.

Receptor and summary of predicted effects	Sensitivity / importance / value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale
Noise, visual and vibrational stimuli during operation resulting in disturbance and displacement.	County	Low	Not significant	Three long-term studies of Nightjar at windfarm sites in Wales (undertaken throughout the pre-construction, construction and operation phases), identified no evidence of displacement from operating turbines, nor apparent impacts on productivity of Nightjar.
Goshawk				
Noise, visual and vibrational stimuli during construction resulting in disturbance and displacement.	Local	Low	Not significant	No nests sites of Goshawk were identified within 1 km of the Development Site in 2025 or 2026, though suitable nesting habitat was identified for potential future breeding within 300 m. If active Goshawk nests are identified. embedded measures will minimise disturbance within sensitive areas, such as scheduling construction to avoid key periods for Goshawk, and identification of exclusion zones.
Physical changes to the spatial environment from operating turbines that could result in collision, injury and fatality..	Local	Low	Not significant	Analysis using CRM suggests that the number of Goshawk that could collide with operational turbines represents a small increase (1.8%) of annual mortality rates with 0.2 collisions predicted each year. Embedded measures include the monitoring of collision rates during operation and will identify if any mitigation is required.
Noise, visual and vibrational stimuli during operation resulting in disturbance and displacement.	Local	Low	Not significant	No nests sites of Goshawk were identified within 1 km of the Development Site in 2025 or 2026, though suitable nesting habitat was identified for potential future breeding within 300 m. The majority of Goshawk flights recorded were restricted to the woodland habitats outside of the Development Site, the habitat they are adapted to hunting within. Goshawk are tolerant of the disturbance from commercial forestry. Given the number of breeding Goshawk continues to increase across Wales, despite the development of an increasing number of wind farms adjacent

Receptor and summary of predicted effects	Sensitivity / importance / value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale
				to forestry, it can be assumed they are tolerant of disturbance from operational turbines.
Red Kite				
Physical changes to the spatial environment from operating turbines that could result in collision, injury and fatality.	Local	Low	Not significant	Analysis using CRM suggests that the number of Red Kite that could collide with operational turbines represents a small increase (8.6%) of annual mortality rates with 1.2 collisions predicted each year. Considering the local Red Kite population has a high recruitment rate via immigration from neighbouring areas, this small increase in mortality rate is considered unlikely to affect the integrity of the local population. Embedded measures include the monitoring of collision rates during operation and will identify if any mitigation is required.
Kestrel				
Physical changes to the spatial environment from operating turbines that could result in collision, injury and fatality.	Local	Low	Not significant	Analysis using CRM suggests that the number of Kestrel that could collide with operational turbines represents a small increase (5%) of annual mortality rates with 1.3 collisions predicted each year. Considering Kestrel has a relatively high reproductivity rate, this small increase in mortality rate is considered unlikely to affect the integrity of the local population. Embedded measures include the monitoring of collision rates during operation and will identify if any mitigation is required.
Peregrine				
Physical changes to the spatial environment from operating turbines that could result in collision, injury and fatality.	Local	Negligible	Not significant	Analysis using CRM suggests that the potential rate of collisions for Peregrine would be 0 birds over 30 years.

Receptor and summary of predicted effects	Sensitivity / importance / value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale
Breeding Bird Assemblage (Grassland and Grass-heath Assemblage)				
Permanent or temporary loss or changes to habitat from construction of the Proposed Development.	Local	Low	Not significant	The Proposed Development will result in the permanent loss of 3.75 ha of grassland and grass-heath habitat and the temporary loss of a further 1.27 ha. This is likely to displace a small number of ground-nesting, grassland birds, estimated to be five to six pairs of Skylark and a similarly low number of Meadow Pipit. Embedded measures will minimise impacts, such as enhancing retained habitats for birds, discouraging nesting birds in working areas, and protecting active nests during construction under supervision of an ECoW.
Breeding Bird Assemblage (Woodland, Clear-fell and Scrub Assemblage)				
Permanent or temporary loss or changes to habitat from construction of the Proposed Development.	Local	Low	Not significant	A maximum of 0.08 ha of Sitka Spruce plantation may need felling to maintain a 50m buffer around Turbine 2, though micro-siting the turbine to avoid tree-felling is more likely. The tree-felling is likely to displace a small number of woodland birds, estimated to be one pair of Dunnock and one pair of Chaffinch. Embedded measures will minimise impacts, such as compensatory tree planting and protecting active nests during construction under supervision of an ECoW.

- 9.18.2. The sensitivity / importance / value of a receptor is defined using the criteria set out in **Table 9.16** according to its geographic scale of importance and is defined as International, National, County, Local or less than local.
- 9.18.3. The magnitude of change on a receptor resulting from activities relating to the development is defined using the criteria set out in **Table 9.21** and is defined as high, medium, low, very low or negligible.
- 9.18.4. The significance of the environmental effects is based on the combination of the sensitivity/importance/value of a receptor and the magnitude of change and is expressed as major (significant), moderate (potentially significant) or minor/negligible (not significant), subject to the evaluation methodology outlined in **Section 9.8**.

9.19 Additional Measures

- 9.19.1. While the assessment of effects has not identified the need for additional mitigation measures at this stage, the CMMS will allow for mitigation measures to be adapted and tailored to the findings of the monitoring surveys as they are undertaken. If the original embedded measures are not as effective as anticipated, the CMMS will allow for additional mitigation measures to be employed (e.g. mitigation to be tailored to each turbine location; requiring additional curtailment at different times of year; or during a wider range of weather conditions; etc.).

9.20 Residual Effects Assessment

- 9.20.1. No residual effects have been identified.

9.21 Further Work to be Undertaken

- 9.21.1. The final assessment of likely significant effects will be reported in the Final ES. This section describes the further work to be undertaken to support the ornithological assessment presented in the ES.

Baseline

VP Surveys

- 9.21.2. The VP surveys need to continue until September 2026 in order to collect the two years of data recommended by best practice guidance¹⁵. The data will be provided in an updated Baseline Ornithological Report.

Walkover Surveys

- 9.21.3. Walkover surveys are required of the Forestry access track to identify potential ornithological constraints and the requirement for further surveys in this location to inform the ornithological assessment.

Assessment

VP Surveys

- 9.21.4. The results of the completed VP surveys will be used to update the CRM, which will inform a re-assessment of the following identified effects:
- physical changes to the spatial environment from operating turbines that could result in collision, injury or fatality of important ornithological receptors; and
 - noise, visual and vibrational stimuli during operation resulting in disturbance and displacement of important ornithological receptors.

Breeding Nightjar Surveys

- 9.21.5. Nightjar territory mapping needs to be undertaken using the data from the recently completed second year of breeding Nightjar surveys. The data have already informed the ornithological assessment of this Draft ES, but the data and analysis need to be provided in an updated Baseline Ornithological Report.

General Breeding Bird Surveys

- 9.21.6. Territory mapping needs to be undertaken using the data from the recently completed general breeding bird surveys. The data analysis will inform a re-assessment of the following identified effect:
- permanent or temporary loss or changes to habitats used by breeding bird assemblages.

Walkover Surveys

- 9.21.7. The data from the walkover surveys of the Forestry access track and from any further required surveys at this location will inform a re-assessment of the following identified effects:
- noise, visual and vibrational stimuli from construction resulting in disturbance and displacement of important ornithological receptors; and
 - permanent or temporary loss or changes to habitats used by important ornithological receptors.

Environmental Measures

- 9.21.8. The results of the re-assessments will be used to develop any additional measures required to address any residual effects as necessary.