6. ORNITHOLOGY

6.1 INTRODUCTION

SLR Environmental Consulting (Ireland) Ltd (SLR) was commissioned by FuturEnergy Ireland to prepare an Ornithological Impact Assessment for the proposed Wind Farm, the grid connection route (GCR) and the turbine delivery route (TDR) (collectively termed the "proposed project"; refer to Glossary of Terms provided in Chapter 1 of Volume II of this Environmental Impact Assessment ("EIA") Report ("EIAR") for an explanation of key terms and definitions).

This Chapter describes and evaluates the current avian interests of the proposed project site and Study Area (full described in Section 6.2.2.2). It assesses all likely significant effects of the proposed project on important bird species and, where necessary, describes proposed mitigation and compensation measures.

No noteworthy limitations were identified in terms of scale, scope or context in the preparation of this assessment. Details of any minor constraints and limitations have been discussed in Section 6.2.5.

This Chapter is supported by the following Appendices which are contained in Volume III of this EIA report:

- Appendix 6-1: Relevant Legislation and Policy;
- Appendix 6-2: Bird Survey Report Breeding 2020;
- Appendix 6-3: Bird Survey Report Winter 2020-21;
- Appendix 6-4: Bird Survey Report Breeding 2021;
- Appendix 6-5: Bird Survey Report Winter 2021-22;
- Appendix 6-6: Bird Survey Report Breeding 2022;
- Appendix 6-7: Bird Survey Report Breeding 2023;
- Appendix 6-8: Bird Survey Report Breeding 2024;
- Appendix 6-9: Bird Survey Report Breeding 2025;
- Appendix 6-10: Species Importance;
- Appendix 6-11: Species Legal and Conservation Status, and Population Trends;
- Appendix 6-12: Hen Harrier Foraging Habitat Loss Report;
- Appendix 6-13: Outline Biodiversity Management Plan;
- Appendix 6-14: Avian Collision Risk Report; and
- Appendix 6-15: Nature Conservation Site Synopses.

6.1.1 Brief Description of the Proposed Project Site

A full description of the proposed project site is given in Chapter 2 of Volume II of the EIAR and the site is shown in Figure 6-1 (Proposed Project Site Overview) and Figure 6-2 (Proposed Project Site Wind Farm Development). A summary of each component of the proposed project as it pertains to ornithology is given below.

6.1.1.1 Wind Farm

The proposed wind farm site comprises of a mixture of coniferous forestry, marginal agricultural land and peatland. The site is in an upland environment, bordering Dough Mountain to the east and Saddle Hill to the west. Land use is primarily commercial forestry and

agriculture. The conifer plantation comprises different stages of clear-feel, second rotation, immature, semi-mature and mature forestry. There are several watercourses within the site.

6.1.1.2 GCR

The GCR primarily utilises existing public roads, with some minor deviations into private lands at watercourse crossings. In such cases, the lands are generally used for pastoral agriculture.

6.1.1.3 TDR

The accommodations along the TDR will be adjacent to artificial, grassy verge, hedgerow and treeline habitats.

6.1.2 Brief Description of the Proposed Project

A full description of the proposed project is given in Chapter 2 – Description of Proposed Project. In summary, the proposed project will comprise 14 wind turbines with an overall blade tip height of 180 m to 185 m, a rotor diameter range of 149 m to 163 m, a hub height range of 101 m to 110.5 m, and all associated ancillary infrastructure including a 100 m tall meteorological mast, an on-site 110kV substation, borrow pits and construction compounds. An underground GCR to the existing 220/110 kV Srananagh Substation in the townland of Ballysumaghan, Co. Sligo is also proposed. The proposed project also comprises accommodations required along the public road network between Killybegs, Co. Donegal and the wind farm site to facilitate turbine and construction material delivery.

The entirety of the proposed project has been considered and addressed as part of this EIAR.

6.1.3 Purpose of this Chapter

The purpose of this Chapter is to:

- Describe the baseline data collection and assessment methods used;
- Summarise the baseline ornithological conditions;
- Identify and describe all likely significant effects on important ornithological features associated with the proposed project;
- Set out the design, mitigation and compensation measures required to ensure compliance with nature conservation legislation and to address any potentially significant ornithological effects;
- Identify how mitigation and compensation measures will be delivered;
- Provide an assessment of the significance of any residual effects in relation to the effects on important ornithological features;
- Identify appropriate enhancement measures and how these will be delivered; and
- Set out the requirements for post-construction monitoring.

6.1.4 Relevant Legislation and Policy

6.1.4.1 Legislation

The following legislation is relevant to this assessment:

- The EU Birds Directive (2009/147/EC; as amended);
- European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), as amended (including S.I. No. 293 of 2021); and

- Wildlife Acts 1976-2021.

The relevant legislation is summarised in more detail at Appendix 6-1. Compliance with relevant planning policy is assessed in the Planning Statement, which accompanies this EIAR.

Figure 6-1: Proposed Project Site Overview

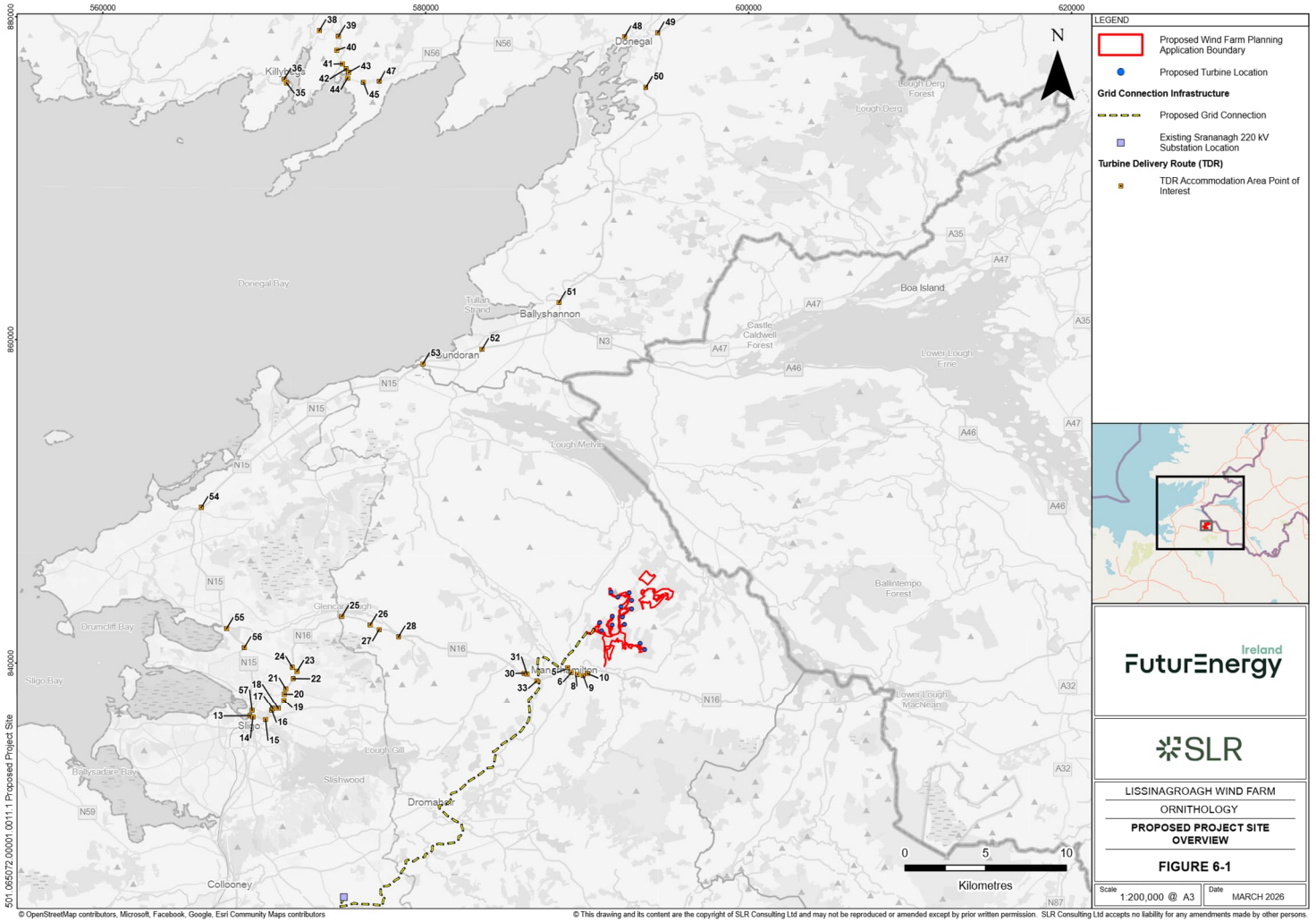
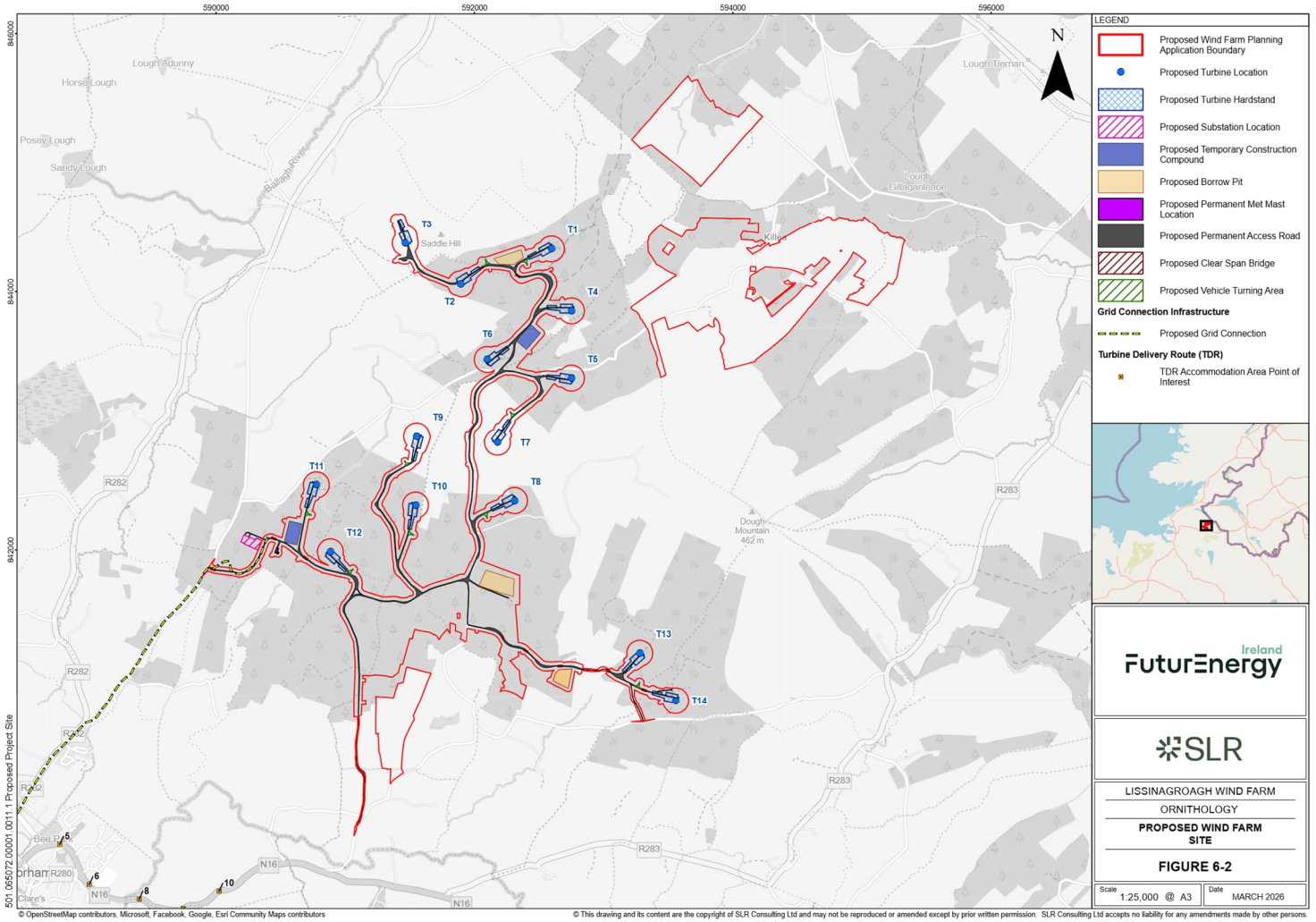


Figure 6-2: Proposed Wind Farm Site



6.2 METHODS

6.2.1 Turbine Range

As stated in EIAR Volume II Chapter 2, a range of turbine permutations between a minimum hub height of 101 m and maximum hub height of 110.5 m, a minimum tip height of 180 m and a maximum tip height of 185 m, a minimum rotor diameter of 149 m and maximum of 163 m, and a minimum ground clearance of 22 m and a maximum of 36 m, has been assessed in this EIAR. For ornithological features, each potential impact pathway was examined with reference to the entire proposed dimensional range. For collision risk, in accordance with NatureScot (2024), the option likely to present the greatest bird collision risk should be assessed. In this case, a turbine with a 103.5 m hub height and 163 m rotor diameter was used as this has the greatest rotor swept area, the largest rotor swept height, and the highest rotor swept height of any of the turbine options under consideration. The dimensions of all the other turbine models under consideration fall within the range of the rotor swept height of a turbine with a 103.5 m hub height and 163 m rotor diameter and would therefore result in a slightly lower collision risk estimate. For all other ornithological impact pathways (including disturbance, displacement, barrier effects, and habitat loss / functional loss), variations in turbine dimensions within the proposed range were determined to have a negligible influence on predicted effects, as these pathways ae driven principally by turbine presence and layout rather than minor dimensional differences.

6.2.2 Scope

The scope of the assessment is outlined below.

6.2.2.1 Ecological Features Considered

6.2.2.1.1 Avian Species

Ecological features considered in this assessment include avian species only. Likely significant effects on habitats and non-avian animal species are considered separately in Chapter 5 - Biodiversity and together with this Chapter provide an assessment of the likely significant effects of the proposed project on biodiversity. This approach of assessing effects on bird species separately is in recognition of the fact that avifauna are a key taxonomic group in the context of wind farm development.

6.2.2.1.1.1 Nomenclature

All bird species' common names in this Chapter follow those given in the AviList Checklist v2025 (Christidis et al., 2025).

6.2.2.1.2 Nature Conservation Sites

Likely significant effects on designated and non-designated nature conservation sites of ornithological importance have been considered in this Chapter, along with any supporting habitats for those bird species that may be located outside their boundaries including other wetland sites designated for non-avian interests.

An assessment of effects on Natura 2000 sites has also been provided within a separate Appropriate Assessment ("AA") screening report and Natura Impact Statement (NIS).

6.2.2.2 Study Area

6.2.2.2.1 Wind Farm Site

The desk study area was the 10 km hectad overlapping with the proposed wind farm site per professional judgment, with further details given in Section 6.2.3.2.

The survey areas used for the ornithological impact assessment differ according to receptor as recommended by relevant NatureScot ("NS") good practice survey guidance (NatureScot, 2025d). These are summarised in Section 6.2.3.2 and are described in more detail within the baseline survey reports (Appendices 6-2 to 6-9).

Regarding designated nature conservation sites, OPR (2021) guidelines suggest that the source-pathway-receptor framework is adopted on a case-by-case basis when assessing the potential for source-receptor connectivity between a project and European sites. A 20 km study area was used initially, in recognition that 20 km is the maximum distance special conservation interest ('SCI') bird species typically travel (NatureScot, 2016). This initial search area was then reappraised during the impact assessment process e.g. to account for downstream hydrological connectivity beyond this search area, reflecting the requirement to implement the source-pathway-receptor framework on a case-by-case basis. This resulted in consideration of one additional nature conservation site outside the 20 km buffer.

The approach described above for designated nature conservation sites was extended to non-designated nature conservation sites also.

6.2.2.2.2 GCR and TDR

No bird surveys were undertaken for the GCR or TDR accommodation areas (see Section 6.2.3.2 for justification) and so survey areas refer to the proposed wind farm site only. However, habitat, invasive species, bat and aquatic surveys were carried out for the GCR and at TDR accommodation areas and any notable bird species were recorded as incidentals if present (see Section 5.2.1.2 in EIAR Volume II Chapter 5).

The study area for the desk study is a precautionary 1 km distance around the GCR and TDR accommodation areas, reflecting that 1 km is the maximum disturbance distance reported by Goodship et al. (2022) for any relevant bird species. This buffer captures habitats likely to experience temporary disturbance from the proposed accommodations, while also allowing for screening of important bird species that may commute or forage in adjacent lands.

The same 1 km search radius was applied for designated nature conservation sites, reflecting the significantly lower potential for ecological impacts associated with these proposed project components. This initial search area was then reappraised during the impact assessment process e.g. to account for downstream hydrological connectivity beyond this search area. This approach was extended to non-designated nature conservation sites also, reflecting the requirement to implement the source-pathway-receptor framework on a case-by-case basis. This resulted in consideration of additional nature conservation sites outside the 1 km buffer due to downstream hydrological connectivity.

6.2.2.3 Consultation

A request for observations on the preparation of the EIAR was issued by TOBIN on 3 December 2024 with a full list of consultees provided in Chapter 1 (Introduction). A summary of key points relating to ornithology taken from the responses received is provided in Table 6-

1 along with details of how the comments have been addressed in this Chapter. Copies of the consultee responses are included in Appendix 1-2.

Table 6-1: Key Issues Raised by Consultees in Relation to Ornithology

Consultee	Date of Response	Summary of Key Issues	Response / Where Addressed in Chapter
Development Applications Unit ("DAU")	11 February 2025	Forestry plantations in the local area around the slopes of Dough Mountain and the adjacent Saddle Hill have been a reliable site for 1-2 pairs of nesting Hen Harrier over a number of years. The locations of nest sites have shifted between years, contingent on suitable habitat in pre-thicket rotations within the afforested areas and other rough grasslands in undisturbed areas. The potential for disturbance to nesting harriers during construction operations is therefore high, with the additional collision risks to adults participating in foraging and display flights during the operational lifespan of the windfarm.	Mitigation measures to prevent disturbance to nesting hen harrier during construction are outlined in Section 6.4.1. These include *inter alia* confirmatory surveys to identify active nests, seasonal restrictions on construction activities during the breeding season, and the establishment of disturbance-free buffer zones around any confirmed nests, as required. A comprehensive operational-phase strategy that aims to compensate for disturbance to nesting and foraging hen harrier is detailed in Section 6.4.9.1 and Appendix 6-13. This includes the creation of two dedicated nesting enhancement areas ("NEAs") and the targeted enhancement of nearby foraging lands to support breeding success and reduce interaction with turbines. Collision risk modelling results are presented in Section 6.4.3.2.1.2.2 and Appendix 6-14. To mitigate potential collision risk, the proposed NEAs and associated foraging habitats are located more than 750 m from the nearest turbine. These measures are designed to encourage breeding hen harrier away from turbine locations, thereby reducing the likelihood of collision during both foraging and display flights. Furthermore, hen harriers are known to exhibit displacement behaviour in response to operational turbines. Since displacement and collision are mutually exclusive outcomes, this behavioural response is expected to further reduce actual collision risk. Post-construction monitoring, as proposed in Section 6.4.11, will be linked to an adaptive management framework. The requirement for post-construction monitoring / surveys does

Consultee	Date of Response	Summary of Key Issues	Response / Where Addressed in Chapter
			not represent a lacuna in the survey assessment but is fully in line with industry best practice.
		The landscape around Dough Mountain also forms part of the wider migration routes for Whooper Swan moving between their breeding grounds in Iceland and wintering areas further south in Ireland. Both Whooper Swan and Hen Harrier are protected under Annex I of the EU Birds Directive 2009/147/EC.	An extensive suite of flight activity surveys was undertaken between the 2020/21 non-breeding season and the 2025 breeding season as described in Section 6.2.3.2.1. These surveys were undertaken following NatureScot (2025d) guidance[1] and included the spring and autumn migratory periods in full in 2020/21 and 2021/22 and in part (April-May and September) during surveys in 2023 to 2025. Surveys encompassed a full spread of daylight hours. Only data collected within the past five years were used for the impact assessment, in line with NatureScot (2025d) guidance. Older data (pre-2020/21 non-breeding season) were included only for contextual background and are summarised in Section 6.3.3.1.1. Although the 2020/21 non-breeding season data sit at the five-year threshold, they remain valid because site habitats and conditions (forestry, peatland, agricultural land) have not materially changed during this period. The potential impacts posed by the proposed project to migrating whooper swan have been assessed in Table 6-23. No significant effects on migrating whooper swan are predicted.
Leitrim County Council	27 January 2025	**Environmental and Ecological Considerations** The EIAR shall take account of all ecological sensitivities and of the likely environmental effects of the proposed project on	A comprehensive suite of bird surveys has been undertaken for the proposed project following NatureScot (2025d) best-practice[1]. This guidance states that a minimum of two years of bird surveys must be undertaken. As shown in Section

[1] The 2017 version of this guidance was used to inform most surveys apart from those conducted in 2025 where the updated guidance was used; however, there are no deviations from the methods used in the current 2025 guidance and so the surveys are also compliant with 2025 guidance. For brevity, we have referred to the 2025 guidance throughout.

Consultee	Date of Response	Summary of Key Issues	Response / Where Addressed in Chapter
		the receiving environment. All in combination and cumulative effects of the proposed project within the zone of influence of the proposal are to be considered together with the following: • Biodiversity with particular attention to species and habitats protected under the Habitats and Birds Directives. In terms of the receiving environment, the EIAR shall include all areas that would be impacted upon, directly or indirectly, by the proposed project. The information contained in the EIAR should therefore be based on comprehensive surveys of the area and have regard to updated data bases which may exist in terms of heritage and ecology.	6.2.3.2.1, this level of effort has been exceeded, giving confidence that the baseline reported in this Chapter is robust. Impacts have been assessed in this Chapter following current best practice CIEEM (2018), NatureScot (2025c) and (NatureScot, 2025a) guidance. A description of how effects have been characterised is given in Section 6.2.6. All potentially significant impacts on ornithology have been assessed in full, with particular attention to species protected under the EU Birds Directive. Cumulative impacts have been assessed for birds following NatureScot (2025a) best-practice guidance and are presented in Section 6.4.7 of this Chapter.
		Ornithology Field survey methodologies should be carried out using survey standards recommended by NatureScot (formerly Scottish Natural Heritage (SNH), 2017), which are widely regarded as representing best practice in Ireland and carried out during suitable times of the year. Two full years of bird survey data, as recommended by current NatureScot (2017) guidance, should be undertaken in forming any analysis/assessment of the potential impacts of the proposed project in this regard	A comprehensive suite of bird surveys has been undertaken for the proposed project following NatureScot (2025d) best-practice guidance[1]. This guidance states that a minimum of two years of bird surveys must be undertaken. As shown in Section 6.2.3.2.1, this level of effort has been exceeded, giving confidence that the baseline reported in this Chapter is robust.
		The scope and nature of the ecological and related surveys should be reviewed with the NPWS section of the Department of Housing, Local Government and Heritage and with the IFI. The work should comply with best practice for seasonality and scope, and the various environmental directives, legislation and guidance documents should be	MKO (the consultants who undertook the baseline bird surveys) consulted with NPWS regarding the scope of the bird surveys conducted for every year of surveys (see Appendices 6-2 to 6-9). An initial response was received from NPWS on 18 June 2018, which provided information on known raptor nests and red grouse records within the survey. All subsequent

Consultee	Date of Response	Summary of Key Issues	Response / Where Addressed in Chapter
		complied with. The comments of the Development Applications Unit on these issues should be sought	responses confirmed that no further information was available. No direct comments were provided regarding the scope of surveys. Survey work was carried out following NatureScot (2025d) best-practice guidance[1] and no limitations regarding seasonality and the scope of the surveys were identified in Appendices 6-2 to 6-9. Comments from the DAU were sought with a response provided by them on 11 February 2025 included in this table but they did not comment on the scope of the surveys. A meeting with NPWS was held on 18 March 2026 to discuss ornithological issues with comments and responses summarised below.
		The EIAR should address the potential for the enhancement of the biodiversity of the site arising from the development and the measures undertaken to maximise these impacts.	Regarding enhancement for ornithology, focus has been given to enhancing habitats for breeding and foraging hen harrier. A comprehensive outline biodiversity management plan ("OBMP") has been developed with details provided in Appendix 6-13.
		Ecology inputs should be provided in the form of an Ecological Impact Assessment (ECIA) which would contain ornithological, aquatic, habitat and bat surveys. Bat, Mammal and ornithological surveys should be undertaken for 2 years to Scottish Natural Heritage standards.	A comprehensive suite of bird surveys has been undertaken for the proposed project following NatureScot (2025d) best-practice guidance[1]. This guidance states that a minimum of two years of bird surveys must be undertaken. As shown in Section 6.2.3.2.1, this level of effort has been exceeded, giving confidence that the baseline reported in this Chapter is robust.
		Cumulative impacts with other developments, including but not limited to other wind farms, should be assessed for all sensitive receptors. Interactions with other environmental	Cumulative impacts have been assessed for birds following NatureScot (2025a) best-practice guidance and are presented in Section 6.4.7 of this Chapter.

Consultee	Date of Response	Summary of Key Issues	Response / Where Addressed in Chapter
		disciplines, especially hydrology and climate should also be assessed.	
Save Dough Mountain Group (Addendum to Leitrim County Council Comments)	27 January 2025	**Topographical Considerations and Avian Impacts** The region's topography, including Dough Mountain's elevation of 460m and surrounding terrains, is central to understanding the potential impacts of wind turbine placement. When combined with turbine blade tip heights (up to 535 m above sea level), the development poses significant risks to birds of prey and other avian species that traverse these altitudes. Request: Accurate topographical modelling must be conducted to assess impacts on local biodiversity, including bird flight paths and potential microclimatic changes caused by turbine operations.	Collision risk modelling ("CRM") has been undertaken following best-practice NatureScot guidance (Band, 2024). Bird flight paths, including their height above ground, have been mapped during flight activity surveys conducted between 2020 and 2025 following best-practice guidance (NatureScot, 2025d)[1] and are illustrated in Appendices 6-2 to 6-9. These flight paths have also formed part of the collision risk modelling process. The modelling is described in full in Appendix 6-14. The results of the CRM have been assessed, considering avian populations, in Section 6.4 of this Chapter.
		Biodiversity Surveys and Cumulative Impact Assessment The region supports species of conservation concern, including the Marsh Fritillary butterfly, Hen Harrier, and Buzzard. Existing ecological data appears incomplete, and cumulative impacts from other developments in the vicinity may not have been adequately considered. Request: Comprehensive biodiversity surveys must be conducted to establish a full baseline for protected species, and cumulative impact assessments must be performed to evaluate the broader ecological implications of the wind farm.	A comprehensive suite of bird surveys has been undertaken for the proposed project following NatureScot (2025d) best-practice guidance[1]. This guidance states that a minimum of two years of bird surveys must be undertaken. As shown in Section 6.2.3.2.1, this level of effort has been exceeded, giving confidence that the baseline reported in this Chapter is robust. Cumulative impacts have been assessed for birds following NatureScot (2025a) best-practice guidance and are presented in Section 6.4.7 of this Chapter.
		The council emphasises that, because the proposed wind farm site lies only three kilometres from the Northern Ireland border, ornithological assessments must incorporate	Northern Irish biodiversity data have been incorporated into ornithological assessments, particularly in relation to nature

Consultee	Date of Response	Summary of Key Issues	Response / Where Addressed in Chapter
Fermanagh and Omagh District Council (FODC)	27 January 2025	Northern Ireland biodiversity data sources, particularly the NBN Atlas and CEDaR datasets. These datasets are important because many bird species in the region move freely across the border or depend on hydrologically linked habitats that extend into County Fermanagh. The council notes that while the scoping report outlines a broad ecological survey programme, additional surveys such as bird surveys including wintering bird surveys, should also be considered.	conservation sites (Section 6.3.3.1.1). A CEDaR request was also made and received on 18 February 2026. Two seasons of non-breeding bird surveys have been undertaken as described in Section 6.2.3.2. The scope of surveys and survey areas reflect industry best-practice guidance (NatureScot, 2025d).
		The council highlights Northern Ireland's Areas of Special Scientific Interest (ASSIs) must be considered in the EIA and in particular, Lough Melvin ASSI given the hydrological connection between the proposed project and the ASSI.	ASSIs have been considered in Section 6.3.1. While Lough Melvin ASSI is hydrologically connected to the proposed project, it is not designated for birds and there is no mention of bird species or ornithological interest as part of its ASSI features. Lough Melvin ASSI's notified features relate to mesotrophic lake habitat, plant communities, and unique salmonid populations. The CEDaR request showed that most bird records for Lough Melvin are for passerines or hirundines, which are generally not considered susceptible to wind farms (see Section 6.3.3.1.1). The only other species recorded at Lough Melvin is osprey *Pandion haliaetus*, which has been considered in Table 6-11.
		In addition, the council supports the preparation of a Nature Impact Statement but stresses that consultees should be given the opportunity to review it. The NIS is expected to provide critical insight into ecological linkages between the site and Northern Ireland's designated bird conservation areas, and its transparency is considered necessary for a robust assessment of implications for protected bird species.	The NIS considers SPAs and Ramsar sites within Northern Ireland.
		Finally, the council states that the proposal is likely to trigger transboundary Environmental Impact Assessment requirements, in part because bird species, habitats, and	Transboundary effects have been considered in Section 6.4.8.

Consultee	Date of Response	Summary of Key Issues	Response / Where Addressed in Chapter
		designated conservation sites span the border. It therefore reserves its position on the planning merits until full survey results including the additional bird surveys it has recommended are available for review.	
An Coimisiún Pleanála (pre-application meeting 1)	20 October 2025	Ensure all NPWS submissions are fully addressed, including any requests for additional surveys. Consider engaging with the Northern Irish authorities, such as the relevant nature conservation body, if relevant. Support assessments with robust scientific evidence and apply the latest NatureScot collision risk model. The impact assessment should be targeted, specific, and proportionate to the proposed development. For example, minimise focus on passerines. Discuss whooper swan migration thoroughly, explaining why impacts are not expected.	All NPWS submissions (including as part of the TOBIN scoping request and those made by MKO during the baseline bird surveys) have been detailed and addressed in this table. Engagement with Northern Irish authorities has been undertaken (see consultation response from Fermanagh and Omagh District Council). Nature conservation sites in Northern Ireland have been considered (see Sections 6.3.1 and 6.3.2) and other projects in Northern Ireland have been considered as part of the cumulative assessment (see Section 6.4.7). Impact assessment has been undertaken using robust scientific evidence. The latest NatureScot collision risk model has been applied (see Appendix 6-14 and Section 6.2.6.1.3 for a further description). NatureScot (2025a) best-practice guidance[1] was followed in the selection of target species for surveys and CIEEM (2018) and NatureScot (2025c) guidance was followed for targeted, specific and proportionate ecological impact assessment. Our approach is given in Section 6.2.6.1. Whooper swan migration and any impacts on the same have been discussed in Table 6-23.
An Coimisiún Pleanála (pre-application meeting 2)	27 January 2026	Ensure any NPWS consultation responses are fully addressed. Provide sufficient examples of similar hen harrier compensation and enhancement measures to demonstrate likelihood of success.	All NPWS submissions have been detailed and addressed in this table. A meeting with NPWS was conducted on 18 March 2026 with comments and responses summarised below.

Consultee	Date of Response	Summary of Key Issues	Response / Where Addressed in Chapter
			Examples of similar hen harrier compensation and enhancement measures are provided in the OBMP Appendix 6-13 and have been referred to in Section 6.4.9.
NPWS (meeting)	18 March 2026	Displacement of nesting habitat and collision mortality must be classified as significant at the regional population level if they negatively affect the small Leitrim-Cavan hen harrier population. Even if impacts are not nationally significant by strict metrics, they may still be nationally significant in terms of range loss if they accelerate decline of an already fragile regional population.	The potential for displacement and collision risk on hen harrier has been fully addressed in the EIAR, with assessment detailed in Section 6.4.5.5. Nesting and foraging displacement have been assessed using the buffers recommended by Goodship et al. (2022) and Pearce-Higgins et al. (2009), and the resulting habitat loss estimates are presented in Appendix 6-12. We agree with NPWS that effects on a small regional population have the potential to contribute to national population status. This issue is addressed directly in the assessment in Section 6.4.5.5, which considers both regional vulnerability and the potential for any national-level influence.
		Emphasised mitigation is preferred to compensation but recognises that compensation may be ultimately required due to site constraints. Accepts that proposed project is outside a designated site for hen harrier, so compensation refers to that used in an EIA sense and not an AA sense. Stated that compensation must be justified and described accurately, with a preference for forest to bog/heath restoration for hen harrier nesting enhancement areas because it creates permanent, non-rotational habitat.	The mitigation hierarchy is described in Section 6.2.6.4 and has been applied throughout this Chapter and is used in an EIA sense throughout. The use of compensation rather than mitigation has been justified in Section 6.4.1.1 and the proposed management involves conversion of forestry to heath/scrub habitats, as described in Section 6.4.9.
		Advises characterisation of compensation lands to demonstrate that sites chosen are suitable for the forestry conversion management measures outlined, noting that past 'forestry conversion' sites in the Ireland and the UK have failed where habitats have become unmanageable as trees have recolonised. Encourages choosing areas that will require	The compensation lands have been characterised in the OBMP (Appendix 6-13), which demonstrate their suitability for conversion from low yield forestry to a scrub-heath mosaic. The management measures proposed have been shown to be practical and realistic.

Consultee	Date of Response	Summary of Key Issues	Response / Where Addressed in Chapter
		lower interventions over the 35-year lifespan of the proposed project using practical, realistic management measures.	
		Advises that simple, robust monitoring indicators are set for the compensation lands including wide coverage and a dense sampling protocol to assess foraging habitat suitability, 2-3 clear, simple objectives with easily replicable metrics, targets for success should be reasonable and time-bound and to outline potential pitfalls if management is not working with remedial actions prescribed via a system of adaptive management.	The monitoring protocol in the OBMP (Appendix 6-13) has been developed following this advice.
		Acknowledges literature is vague on the calculation of hen harrier displacement distances but encourages a reasonable approximation of indirect habitat loss due to displacement that references relevant literature and a greater than 1:1 ratio for foraging habitat compensation, consistent with best practice.	A comprehensive literature review of hen harrier foraging habitat and displacement distances by operational wind turbines has been given in Appendix 6-12, justifying the rationale behind the foraging habitat loss calculation methodology and supported by the latest scientific literature. A greater than 1:1 ratio for foraging habitat compensation is proposed.
		Ensure distribution and abundance surveys consider potential for white-tailed eagle nest sites within the core foraging range for this species and survey accordingly following NatureScot guidance. Contextualise any potential effects given that any impacts on a nesting pair could affect the range of the population nationally.	NatureScot (2025d) guidance states that surveys should be undertaken up to 6 km from development sites for white-tailed eagle in areas where breeding white-tailed eagle are likely to be present. At the time that surveys were carried out there was no information to suggest the possible presence of white-tailed eagle. Nevertheless, field surveys were conducted up to 5 km, and no eagle breeding attempts were identified in any survey year and no activity indicating possible breeding just outside the 5km survey area was recorded. A data request was made to NPWS on 20 March 2026. No confirmed white-tailed eagle nesting attempts are known to NPWS within 6 km of the proposed project; however, a

Consultee	Date of Response	Summary of Key Issues	Response / Where Addressed in Chapter
			tentative nesting attempt may have been made in 2025, 5-6 km away from the nearest turbine (no precise location given and no confirmed breeding was recorded). The impact assessment considers the possibility that the frequency of eagle sightings could increase over the lifespan of the proposed project and any potential effects on eagles have been contextualised on this basis (Section 6.4.5.7), with additional mitigation proposed to reduce the likelihood of eagles flying through the collision risk zone should nesting attempts occur in the wider area in the future (Section 6.4.6).
		Recommends not to consider collision mortality and displacement as mutually exclusive as avoidance rates in the collision mortality analysis provide a method in which displacement effects are quantified.	It is acknowledged that the NatureScot CRM avoidance-rate guidance (NatureScot, 2025f) mentions both displacement and turbine-level avoidance in close proximity, which can create ambiguity if "avoid/avoidance" is read as a single concept. However, NatureScot's broader onshore bird impacts guidance (NatureScot, 2025e) distinguishes these clearly: displacement is an area-level response ("indirect loss of habitat if disturbance causes birds to avoid the wind farm and surrounds"), whereas avoidance rate captures evasive action near the rotor (birds "change their route, time their flight through the rotor or take emergency avoidance action") within collision risk modelling. Accordingly, avoidance rates in the CRM do not include for displacement. They represent the proportion of birds that evade collision when exposed to turbines, applied after estimating exposure from baseline flight activity and distribution. By contrast, displacement means birds avoid the site or surrounds altogether due to disturbance. These processes are conceptually and analytically distinct in NatureScot's guidance (NatureScot, 2025e).

Consultee	Date of Response	Summary of Key Issues	Response / Where Addressed in Chapter
			In line with this distinction, the assessment treats displacement and collision risk as related but separate processes: NatureScot's 'Wind farm impacts on birds' guidance is used to define and assume displacement (NatureScot, 2025e), while NatureScot's CRM 'Use of Avoidance Rates' guidance (NatureScot, 2025f) is used only for the avoidance rate parameter that adjusts modelled collisions for turbine-level evasive behaviour. This avoids conflation of terms and prevents methodological issues. Assuming displacement occurs, observed flight activity within/around the site during operation will be lower than baseline flight activity levels, which reduces collision exposure in addition to any turbine-level evasive behaviour captured by the avoidance rate. For these reasons, it is not correct to state that the CRM avoidance rate "provides a method in which displacement effects are quantified".
		If data indicate collision mortality occurs during the breeding season the default should be to consider impacts to occur on breeding adult hen harrier only unless a clear distinction between adult vs juvenile birds can be made in the survey data.	Collision-related impacts on the breeding population of adult hen harrier have been discussed in Section 6.4.5.5 in-line with NPWS's advice.
		Hen harrier collision mortality impacts must be contextualised using the Leitrim-Slieve Rush-Cavan Complex population as the appropriate sub-unit.	This has been implemented in Section 6.4.5.5.
		Mitigation should, wherever possible, prioritise measures such as turbine layout redesign or seasonal curtailment during the breeding period, rather than relying on compensation. Where such mitigation options are not feasible, the EIAR should clearly explain the reasons why. If compensation measures are proposed, such as habitat improvement or	As explained in Sections 6.3.3.1.3.1 and 6.4.1.1, it was not appropriate to design the turbine layout around historical hen harrier nest locations because the nesting sites were not spatially consistent between years, meaning no fixed exclusion zone could be reliably defined or incorporated into the layout. As a result, layout-based mitigation could not

Consultee	Date of Response	Summary of Key Issues	Response / Where Addressed in Chapter
		predator control to offset potential collision-related mortality of breeding adults, an indication should be provided of the scale of compensation required and whether it is reasonably achievable, noting that these measures primarily influence fledging success rather than adult survival. A simple population-modelling approach, similar to that used in the National Hen Harrier Survey could potentially be adapted for the relevant sub-unit. This could be used to compare a do-nothing scenario, a scenario including predicted impacts, and a compensated scenario demonstrating how proposed measures might offset those impacts. Any demographic parameters used in such modelling should be fully referenced, precautionary in nature, and reflect the lower indicative survival and productivity estimates available for Irish hen harriers. Likewise, any projected improvements in fledging success or juvenile survival arising from the proposed compensation should be supported with appropriate evidence and references.	practicably reduce potential nesting disturbance or displacement. Curtailment is not a viable mitigation option for collision-related impacts as predicted collision risk is too low to justify it and the loss of energy generation could potentially make the proposed project non-viable. The proposed compensation measures outlined in Section 6.4.9 are not intended to mitigate collision-related impacts on hen harrier populations directly, as predicted collision mortality is anticipated to be very low. Instead, these measures specifically address the effective loss of nesting and foraging habitats arising from operational displacement. They may also indirectly reduce collision exposure by increasing the attractiveness of habitats located >750 m from turbines, outside the collision risk zone, and by placing foraging enhancement areas adjacent to these NEAs meaning birds don't need to fly through the turbine area to access foraging areas, as described in Section 6.4.9. Because the proposed compensation measures are designed to address habitat-based effects (i.e., potential loss or displacement of nesting and foraging habitat) rather than to offset collision mortality of breeding adults, a population-modelling exercise aimed at quantifying how compensation might offset collision-related mortality would not be appropriate.

6.2.3 Baseline Data Collection

6.2.3.1 Desk Study

A desk study compiled contextual information on bird populations and nature conservation sites in and around the study area, which was undertaken prior to surveys and completing assessments (described in Appendices 6-2 to 6-9). This included:

- National Parks and Wildlife Service ("NPWS") website (NPWS, 2025b) - searched for information on species trends and designated sites in Republic of Ireland on 02/10/2025;
- Northern Ireland Environment Agency ("NIEA") Natural Environment Map Viewer website (DAERA, 2025) – searched for designated sites in Northern Ireland on 02/10/2025;
- National Biodiversity Data Centre ("NBDC") website (NBDC, 2025) - searched for historical species records on 02/10/2025 with spatial species data given in hectads (hectad G94);
- Northern Ireland CeDAR data request – received historical species records on 18/02/2026 with spatial species data given in hectads (hectads G94, G95, H04, H05);
- The 2022 National Survey of Breeding Hen Harrier in Ireland (Ruddock et al., 2024);
- The Hen Harrier Threat Response Plan 2024-2028 (NPWS, 2024);
- A review of Greenland white-fronted geese *Anser albifrons flavostris* in Ireland 1982/83 – 2011/12 (Burke et al., 2014) – searched for evidence of goose roosts nearby;
- The Irish Wetland Bird Survey (I-WeBS) online species accounts (IWeBS, 2025) – searched for wetland bird species population sizes and trends on 02/10/2025;
- The UK's Wetland Bird Survey online tool (BTO, 2025b) – searched for wetland bird species population sizes and trends on 02/10/2025;
- The Article 12 Web Tool (EIONET, 2025); and
- Birds of Conservation Concern in Ireland 4 ("BoCCI4"): 2020-2026 (Gilbert et al., 2021) – searched for species conservation status.

6.2.3.2 Field Surveys

Baseline ornithology surveys were conducted during the period October 2017 to September 2025. The scope of surveys was informed by NS guidance (NatureScot, 2025d)[1].

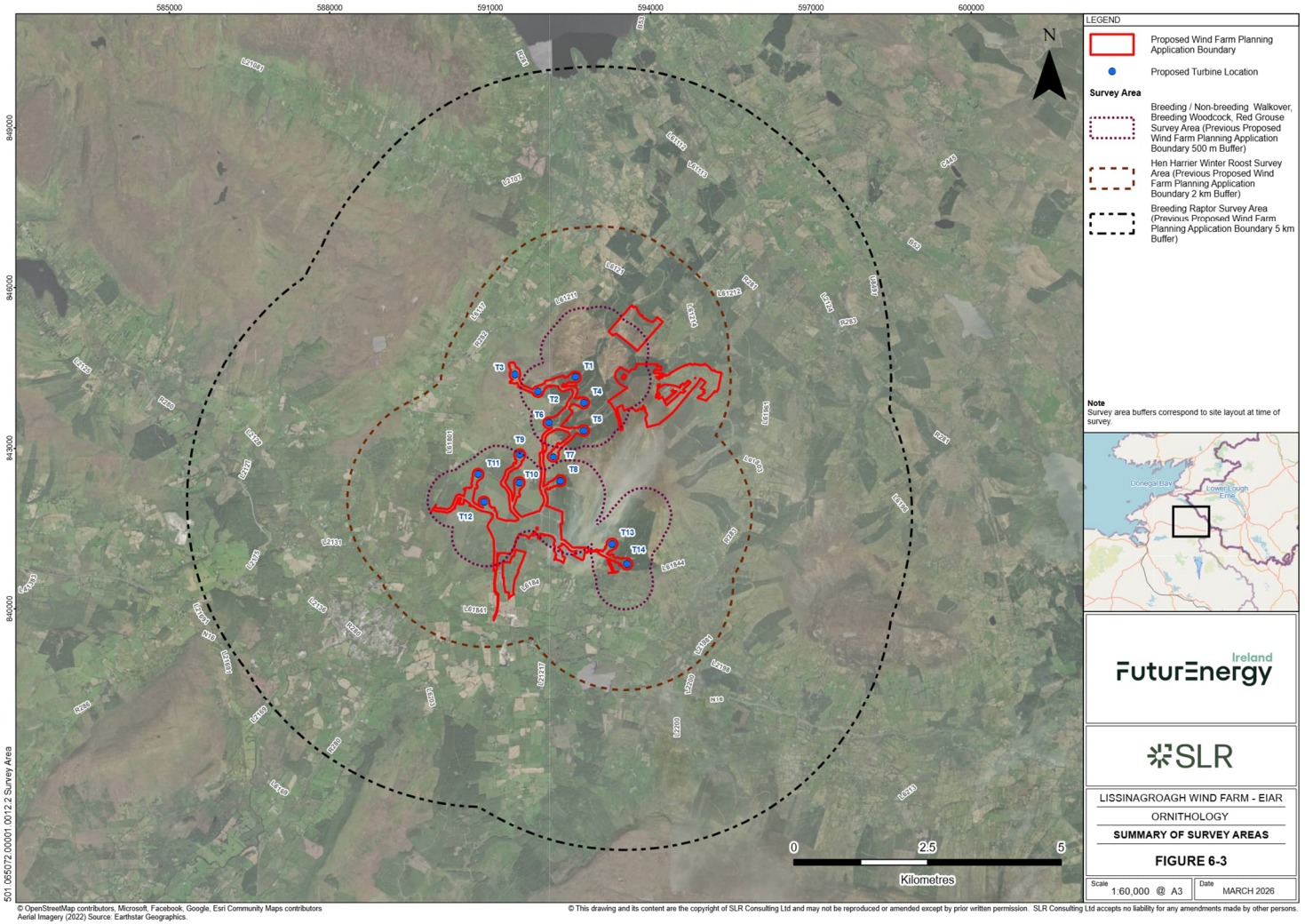
Surveys were focused on the proposed wind farm and surrounding survey-specific buffers; however, no dedicated bird surveys were undertaken for the GCR and TDR accommodation areas. This is because the proposed GCR is located almost entirely within existing public road corridors, which are artificial habitats and not likely to be important for bird species of conservation importance (see Section 5.4.2 of EIAR Volume II Chapter 5 which shows only a small length (10 m) of hedgerow WL1 and very small areas (0.01 ha) of mixed broadleaved woodland WD1 and scrub WS2 are to be lost). Similarly, there are no designated nature conservation sites for birds within 1 km of the GCR and the only potential impacts will be temporary, as the cable is to be buried underground. Along the TDR accommodation areas, accommodations are limited to minor verge-side measures, such as trimming vegetation, with no significant land-take (see Section 5.6.2.3 of EIAR Volume II Chapter 5 which shows the habitats, such as (mixed) broadleaved woodland WD1, scrub WS1, hedgerows WL1 and treelines WL2 within the study area). These areas are highly disturbed and regularly maintained and are likely to support only common bird species adapted to roadside environments.

Only data collected within the last five years have been presented in this Chapter and used for impact assessment, as advised by NS guidance (NatureScot, 2025d). Any data collected prior to the 2020/21 non-breeding season have been used to provide context only and are not described in detail in this Chapter. A summary has been provided in Section 6.3.3.1.1.

From 2023 onwards, additional (i.e. more than recommended by NS guidance) survey efforts focused on the breeding season only, reflecting the presence of breeding hen harrier within the wider study area. This approach aligns with best practice by prioritising survey effort where potential impacts are greatest.

Full details are presented in Appendices 6-2 to 6-9 with a summary provided below. The various Study Areas used are survey-specific and are given under the description for each survey methodology with a summary given in Figure 6-3.

Figure 6-3: Summary of Survey Areas



6.2.3.2.1 Flight Activity Surveys

Flight activity surveys commenced in October 2020 and continued until September 2025. Continuous year-round surveys were carried out for two full years up to end of the 2022 breeding season. From 2023 onwards, survey effort was limited to the breeding season only (2023, 2024 and 2025) to provide focus on breeding hen harrier. The methodology followed that given in NS guidance (NatureScot, 2025d). Survey effort was conducted from each of four vantage points ("VPs") for both non-breeding (NB) and breeding (B) seasons.

The non-breeding season was defined as October to March inclusive, and the breeding season was defined as April to September inclusive.

The number of survey hours completed at each VP in each season is summarised in Table 6-2. The level of survey effort undertaken during the non-breeding season met the requirements of current NS guidance while the level of survey effort during the breeding season was considerably more than the minimum 72-hours of effort per VP per season (over two years) required by NS guidance (NatureScot, 2025d).

Note that for the purposes of collision risk modelling (see Appendix 6-14), the breeding season has been treated as April to August and the non-breeding season as September to March. These seasonal definitions were used to meet NS best-practice guidance for collision risk modelling (NatureScot, 2025d). Therefore, the number of hours presented for each survey season in Appendix 6-14 differs from those presented here; however, this is not considered to have affected the validity of the assessment because all survey effort has been included as part the modelling and the minimum level of survey effort required for each season has been achieved.

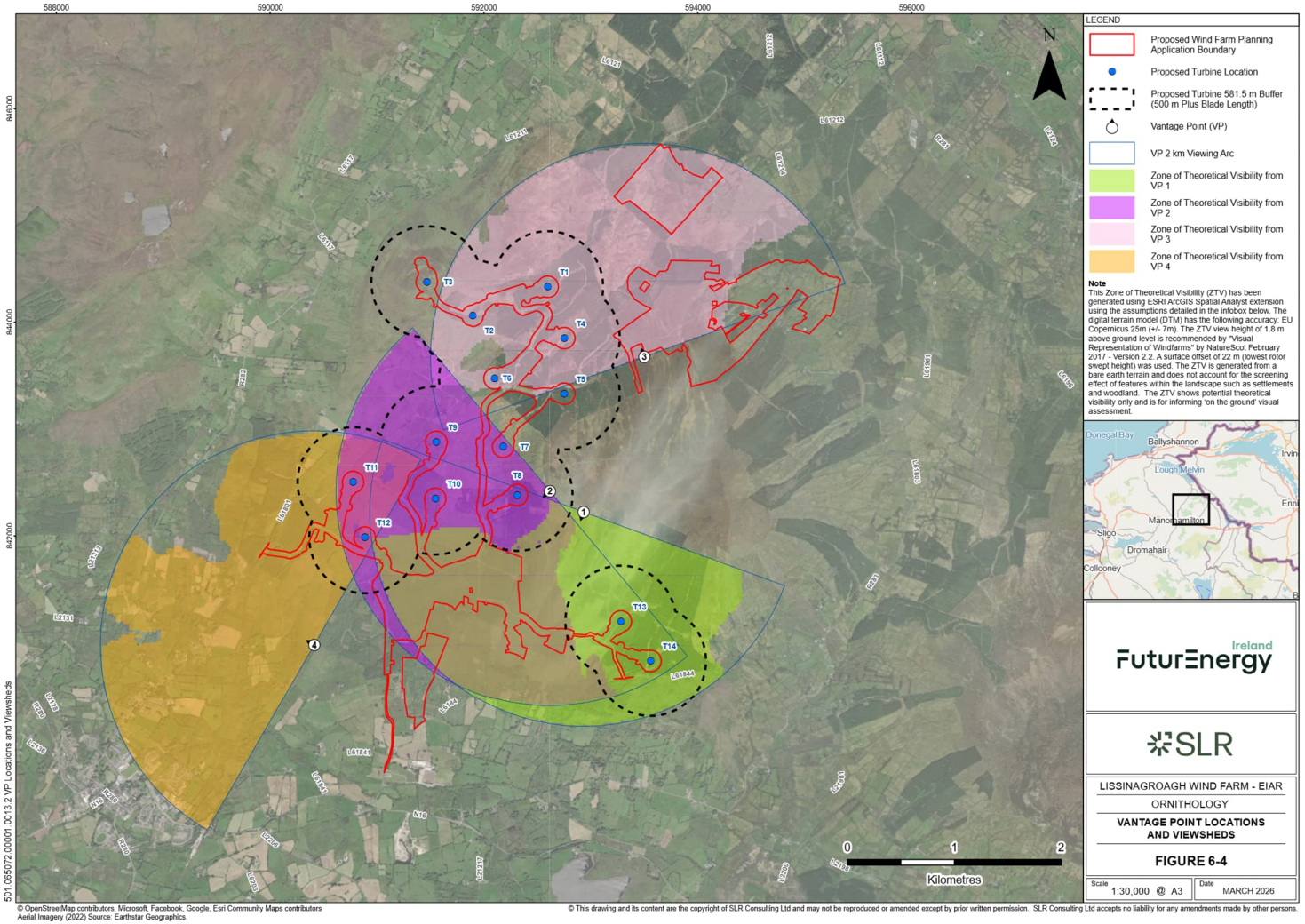
Vantage point locations and viewsheds are shown in Figure 6-4.

Table 6-2: Flight Activity Survey Hours

VP Number	Total Survey Effort Per Season[2] (hours)							Total NB Survey Effort (Hours)	Total B Survey Effort (Hours)	Total Survey Effort (Hours)
	NB 20/21	B 21	NB 21/22	B 22	B 23	B 24	B 25			
1	36	36	36	36	36	36	36	72	180	252
2	36	36	36	36	36	36	36	72	180	252
3	36	36	36	36	36	36	36	72	180	252
4	36	36	36	36	36	36	36	72	180	252

[2] NB = non-breeding season Oct-Mar; B = breeding season Apr–Sep.

Figure 6-4: Vantage Point Locations and Viewsheds



6.2.3.2.1.1 Target Species

NS guidance (NatureScot, 2025d) recommends that species targeted for flight activity surveys are split into two groups: primary and secondary species, which are listed in Appendices 6-2 to 6-9. During field surveys, recording of secondary species is subsidiary to recording of primary species. This approach is explained below in more detail.

6.2.3.2.1.1.1 Primary Target Species

Current NS guidance (NatureScot, 2025d) states that *"in most circumstances the target species will be limited to those species which are afforded a higher level of legislative protection."*

Primary target species were specifically limited to species upon which effects are most likely to be potentially significant, e.g. breeding and non-breeding species forming SCIs for nearby special protection areas ("SPAs") or species listed on Annex I of the Birds Directive.

In addition, some species red-listed under the BoCCI4 scheme (Gilbert et al., 2021) were also included as primary targets, especially if considered susceptible to impacts from wind farms. While being red listed does not afford species a higher level of legislative protection, it does reflect poor conservation status and potential vulnerability of bird populations to negative effects from wind farms. Most red-listed non-passerine species were included as primary target species. Passerine species are not generally considered to be significantly impacted by wind farms (NatureScot, 2025d) and were therefore not included as primary target species.

This approach to identifying primary target species enabled recording to focus on the species of greatest importance without the distraction of having to record detailed flight data for a larger number of more common species.

6.2.3.2.1.1.2 Secondary Target Species

Secondary target species were limited to species that may be affected by wind farms (i.e. non-passerine species) but either lack a higher level of legislative protection (not listed on Annex I of the Birds Directive or listed as SCIs) and/or are not red listed under the latest BoCCI4 scheme.

6.2.3.2.2 Breeding Walkover Surveys

Breeding walkover surveys were undertaken in 2021 and 2022 within different habitat complexes inside the proposed wind farm site, plus surrounding 500 m, using the methodology described in Brown & Shepherd (1993) and Calladine et al. (2009), which is suitable for upland moorland sites. In accordance with current NS guidance (NatureScot, 2025d), four survey visits were undertaken each year in April, May, June and July. Targets were all species of conservation concern.

6.2.3.2.3 Breeding Woodcock Surveys

Breeding Eurasian woodcock *Scolopax rusticola* surveys were undertaken in 2021 and 2022 within suitable woodland habitat inside the proposed wind farm site, plus surrounding 500 m, using the methodology described in Gilbert et al. (1998). Two survey visits were undertaken each year in May and June. While woodcock were the targets of the survey, any other crepuscular or nocturnal birds were recorded.

6.2.3.2.4 Breeding Raptor Surveys

Breeding raptor surveys were undertaken in 2021, 2022, 2023, 2024 and 2025 within suitable habitat inside the proposed wind farm site plus surrounding 5 km using the methodologies described in Hardey et al. (2013). Four survey visits were undertaken each year in April to August inclusive.

The purpose of surveys was to identify potential raptor nesting territories. Surveys involved a combination of raptor vantage point watches of 3 hours and walked transects in areas deemed most likely to hold breeding raptors, based on habitat and observed movements of raptor species in the study area.

6.2.3.2.5 Hen Harrier Foraging Surveys

Surveys to provide additional information on foraging areas used by breeding hen harrier were undertaken in 2023 and 2024. Observations were made from vantage points positioned near confirmed nest sites, with surveyors tracking birds' flight paths to and from nests and recording visible activity. Each survey lasted 3–6 hours during daylight, focusing on peak activity periods, and documented flight lines, habitat types, and behaviours such as prey carrying and food passes.

Foraging surveys started when a nest was identified starting in June and continued until August when breeding birds had left the area.

6.2.3.2.6 Red Grouse Surveys

Red grouse *Lagopus lagopus hibernica* surveys were undertaken in 2022 within suitable habitat inside the proposed wind farm site, plus surrounding 500 m, using the methodologies described in Bibby et al. (2000) and Murray et al. (2013). One survey visit was undertaken in March.

The aim of the survey was to census the local red grouse population. Surveys involved walking a transect playing a tape lure and were carried out under NPWS licence.

6.2.3.2.7 Winter Walkover Surveys

Winter walkover surveys were undertaken in 2020/21 and 2021/22 within different habitat complexes inside the proposed wind farm site, plus surrounding 500 m, using the methodologies described in Bibby et al. (2000) and Brown & Shepherd (1993). Four survey visits were undertaken each season, during the period October to March inclusive.

The aim of the survey was to obtain a fuller picture of activity for species of conservation concern. Surveys involved walking a transect and recording all bird species encountered.

6.2.3.2.8 Hen Harrier Winter Roost Surveys

Hen harrier winter roost surveys were undertaken in 2020/21, and 2021/22 within suitable habitat inside the proposed wind farm site, plus surrounding 2 km, using the methodologies described in Gilbert et al. (1998) and the Irish hen harrier winter roost survey (B. O'Donoghue, 2019). Six survey visits per survey location were undertaken each season, during the period October to March inclusive.

Surveys involved watches of potential hen harrier roost sites from four locations overlooking the most suitable hen harrier roosting habitat.

6.2.4 Statement of Authority - Project Team

6.2.4.1 Jonathon Dunn

This Chapter has been prepared by Jonathon Dunn MCIEEM, PhD, MSc and MA (Cantab.). Jonathon is an Associate Ornithologist at SLR with over 11 years' professional experience and has worked on multiple consented and proposed wind farm projects in Ireland. He has undertaken and designed bird survey programmes for a large volume of onshore wind farms in Ireland, and has written multiple EIAR biodiversity and ornithology chapters, Natura Impact Statements and biodiversity management plans. Jonathon also has undertaken training in collision risk modelling delivered by CIEEM and has implemented and written multiple modelling reports to support planning applications.

6.2.4.2 Duncan Watson

This Chapter has been reviewed by Duncan Watson CEnv MCIEEM MSc BSc (Hons). Duncan is a Technical Director at SLR with over 27 years' professional ecological and ornithological experience. He has particular experience in the renewable energy sector having played a key role in the EIAs for over 90 onshore wind farms across the UK and Ireland. Duncan has a particular interest in Ecological Impact Assessment and was a member of the technical review group responsible for revising and updating the CIEEM Guidelines for Ecological Impact Assessment in the UK (published in 2018). He has also led CIEEM workshops on Ecological Impact Assessment and Habitats Regulations Assessment.

6.2.4.3 Field Surveyors

Bird surveys were carried out by MKO. Details of MKO bird surveyors including evidence of technical competence are provided in Appendices 6-2 to 6-9.

Habitat surveys to assess lands to be enhanced for foraging hen harrier were carried out by Tobin and Bird Surveyors Ltd, the latter of which is directed by Irish hen harrier expert, Dr Marc Ruddock. Details of the surveyors including evidence of technical competence are provided in Appendices 6-12 and 6-13.

6.2.5 Baseline Data Limitations

6.2.5.1 Desk Study

Desk study data is unlikely to be exhaustive, especially in respect of species, and is intended mainly to set a context for the study. The field surveys were designed to address any limitations with the desk study data.

Fine-scale (county or regional) population estimates are not available for most terrestrial bird species in Ireland. National monitoring programmes provide trend data primarily at national or broad-regional scales, with the exception of wetland birds for which site-specific I-WeBS datasets exist. This limitation is recognised in national guidance and evidence reviews (e.g., NPWS (2024)), which note that detailed demographic or spatial modelling is unavailable for most upland and open-habitat birds. Accordingly, this assessment follows accepted practice by combining national trend information with site-specific survey results to evaluate potential impacts in the absence of finer-scale population datasets.

6.2.5.2 Field Surveys

Regarding viewshed coverage (i.e. the areas visible from the VPs), due to local topographical conditions and the evolving turbine layout and dimensions, there are some areas in the northwest and east of the 500 m survey buffer that are not within the 2 km viewsheds. Most turbine locations and most of the 500 m buffer were visible from at least one VP however, and the gaps in the viewsheds are not considered to represent a significant limitation. It is considered that the vantage point data are representative of the proposed wind farm site as a whole and sufficient to inform a robust impact assessment.

NS guidance (NatureScot, 2025d) recommends that baseline data are collected within the last five years. The 2020/21 non-breeding season data is approximately five years old; however, the data from this season remains valid, as site conditions and habitats have not materially changed in the intervening period i.e. forestry, peatland and agricultural habitats still dominate the study area. Furthermore, the non-breeding bird assemblage recorded within the study area is typical of the habitats present and does not comprise features of elevated sensitivity or conservation concern, such that no constraints or issues relating to non-breeding season ornithology have been identified. This conclusion is supported by consistency with earlier non-breeding season survey data collected prior to 2020.

6.2.5.3 Summary

None of the limitations outlined above are considered to affect the validity of the data on which the assessment is based.

6.2.6 Assessment Approach

The evaluation and impact assessment approach used in this chapter is based on Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland ("CIEEM guidelines") (CIEEM, 2018).

Reference is also made to other relevant guidance, within the chapter, as appropriate.

6.2.6.1 Important Ornithological Features (IOFs)

According to CIEEM guidelines (CIEEM, 2018) detailed assessment is only required for IOFs that are potentially affected by the proposed project. For this chapter, IOFs are restricted to avian species for which potential effects from wind farms are most likely to be significant such as species forming SCIs for nearby SPAs, species listed on Annex I of the Birds Directive, and certain non-passerine species with poor conservation status (e.g., those red-listed under BoCCI4).

CIEEM guidelines state that it is not necessary to carry out detailed assessment of ecological features that are sufficiently widespread, unthreatened and resilient to project impacts and would remain viable and sustainable. For example, as noted previously, passerines (relating to the largest order of birds, *Passeriformes*, which includes over half of all living birds and consists chiefly of altricial songbirds of perching habits) are generally not considered to be significantly impacted by wind farms (Beston et al., 2016; Garcia et al., 2015; NatureScot, 2025d; Stewart et al., 2007) due to relatively large populations and high reproductive rates, making populations more resilient.

Therefore, this Chapter only considers IOFs for detailed assessment. The approach to determining importance is described below. A list of IOFs based on survey work completed is included in Table 6-8 and Table 6-9.

6.2.6.1.1 Determining Importance

The importance of an ornithological feature was considered within a defined geographical context. The following frame of reference has been used in this case, relying on known / published accounts of distribution and rarity where available, and professional experience:

- International;
- National (e.g. Ireland);
- Regional (e.g. non-designated important breeding areas for hen harrier);
- County (e.g. Co. Leitrim); and
- Local (e.g. proposed wind farm site plus circa 5 km).

The above frame of reference is applied to the ornithological features identified during the desk study and surveys to inform this Chapter.

For designated sites, importance reflects the geographical context of the designation. For example, an SPA is considered internationally important, while a Natural Heritage Area ("NHA") or proposed NHA ("pNHA") is considered nationally important.

In assigning a level of value to a species, its distribution and status were considered, including a consideration of trends based on available historical records. Reference has therefore been made to published lists and criteria where available. Examples of relevant lists and criteria include:

- species of European conservation importance (as listed on Annex I of the Birds Directive); and
- BoCCI4 (Gilbert et al., 2021).

Where appropriate, the value of resident or regularly occurring species populations has been determined using the standard '1% criterion' method (Holt et al., 2012; Percival, 2003). Using this, the presence of >1% of the international population of a species is considered internationally important, >1% of the national population is considered nationally important and so on.

Where available, regions were defined based on established scientific literature and reports. For instance, the Hen Harrier Threat Response Plan (NPWS, 2024) was used to identify non-designated but regionally important breeding areas for hen harrier.

County-level populations of wintering wildfowl were assessed using I-WeBS data, incorporating records from all I-WeBS sites within County Leitrim. However, this dataset is limited to wintering wildfowl and does not cover all bird species or breeding populations.

In cases where detailed regional or county population estimates were unavailable, national estimates were used as a benchmark to determine likely importance. This assessment considered:

- frequency of occurrence on the site;
- peak count totals;
- evidence of sustained or regular habitat use (e.g. foraging, roosting, breeding); and

- the ecological significance of that use, particularly during sensitive periods such as breeding.

Species recorded only occasionally, in low numbers, and with no evidence of regular habitat use were assigned less than county importance. In contrast, species using the site regularly and in ecologically meaningful numbers were valued as county or regional importance, depending on the strength of evidence.

Where it was not possible to clearly differentiate between regional and county importance, professional judgment and a precautionary approach was applied.

For this assessment, bird species evaluated as important at the county scale or above were scoped in for detailed assessment provided a realistic pathway for significant effects from the proposed project exists (e.g. regular on-site breeding, foraging and roosting, or potentially significant collision risks). In certain cases, species evaluated as important at the local scale were scoped in if there was a credible impact pathway and the resulting effect could be significant given the species' importance. For example, if the levels of flight activity recorded on-site were sufficiently high that collision could present a significant risk to the species.

The same general principles were applied to nature conservation sites i.e. only those with a plausible pathway for impact were scoped in for detailed assessment.

Effects on other ornithological features are considered unlikely to be significant in terms of legal or policy implications.

6.2.6.1.2 Impact Assessment

The impact assessment process involves the following steps:

- identifying and characterising potential impacts;
- incorporating measures to avoid and mitigate (reduce) these impacts;
- assessing the significance of any residual effects after mitigation;
- identifying appropriate compensation measures to offset significant residual effects (if required); and
- identifying opportunities for ecological enhancement.

When describing impacts, reference has been made to the following characteristics, as appropriate:

- Positive or negative;
- Magnitude (quantified wherever possible, e.g. number of birds displaced, number of birds predicted to collide with turbines, etc);
- Duration (specifically whether impacts would be permanent or temporary, and if temporary over what period);
- Timing and frequency (how frequently bird species may be affected and at what times of year, times of day, etc); and
- Reversibility (i.e. whether impacts may be reversible and over what timescales, e.g. re-establishment of habitats used by bird species following temporary loss or disturbance).

The impact assessment process considers both direct and indirect impacts: direct impacts are changes that are directly attributable to a defined action, e.g. the physical loss of habitat occupied by a bird species during the construction process. Indirect impacts are attributable to an action, but which affect ornithological resources through effects on an intermediary

ecosystem, process or feature, e.g. the creation of roads which cause hydrological changes, which, in the absence of mitigation, could lead to the drying out of wetland habitats used by IOFs.

Disturbance impacts have been assessed with reference to the relevant literature (Drewitt & Langston, 2006; Goodship et al., 2022; Hötker et al., 2006; Pearce-Higgins et al., 2009), and the literature has also been used to recommend appropriate disturbance-free buffer zones considered likely to be required to help prevent nest failure due to disturbance during construction and operation.

6.2.6.1.3 Collision Risk Modelling

The latest NatureScot-recommended, standard Band 'random flights' CRM (Band, 2024) was used to estimate collision risk based on recorded target species activity levels and flight behaviour, proposed turbine numbers and specifications, and the relevant species biometrics and flight characteristics.

Modelling collision risk under the Band CRM is a two-stage process:

- Stage 1 estimates the number of birds that fly through the rotor swept disc; and
- Stage 2 predicts the proportion of these birds that have the potential to be hit by a rotor blade.

Combining both stages produces an estimate of collision mortality in the absence of any avoidance action/behaviour by birds. Avoidance rates are then applied to generate predicted rates of collision mortality. Further details of the CRM methodology are provided in Appendix 6-14.

In line with the latest NatureScot CRM guidance, nocturnal flight activity has been incorporated using the recommended species-specific correction factors. These factors adjust observed daytime activity to reflect the proportion of additional flight activity expected to occur during low-light or night-time periods, ensuring that total activity levels used in the CRM represent a full 24-hour period rather than daylight surveys alone. This approach aligns the assessment with current best practice and provides a precautionary estimate of potential collision risk.

CRM is based on several assumptions, such as flight speeds and the distribution of flights (both spatially and within height bands), which generally offer a precautionary estimate of collision risk. This should be considered when interpreting the results.

6.2.6.2 Likely Significant Effects

Significance is always context-specific and tailored criteria should, thus, be developed for each project and its settings.

The concept of ecological significance is addressed in paragraphs 5.24 through to 5.28 of CIEEM guidelines (CIEEM, 2018). Significance is a concept related to the weight that should be attached to effects when decisions are made. For EIA, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general.

Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local and the scale of

significance of an effect may or may not be the same as the geographic context in which the feature is considered important.

NatureScot (2025c) also provides guidance for assessing the significance of impacts on bird populations from onshore wind farms that do not affect protected areas. NatureScot guidance is widely recognised as the industry-standard for assessing wind farm impacts on birds in the UK and Ireland and broadly follows the latest CIEEM guidance described above. NatureScot (2025c) guidance states that:

'The EIA report should set out the consequences for the integrity of the species population in terms of its size, trend, distribution (where known) and the area of suitable habitat. The assessment should identify whether the impact is likely to negatively affect the conservation status of the species, by:

- *Preventing a recovering or reintroduced species from reaching favourable conservation status, at a national or international level; or*
- *Changing a species' status from favourable to unfavourable; or*
- *For a species that is already in decline, the assessment should focus on whether the proposal would undermine the potential for halting its decline and allowing it to recover to favourable conservation status.'*

6.2.6.3 Cumulative Effects

Cumulative effects result from effects arising from two or more developments and/or from different elements of the same project. Effects may be:

- Additive: where combined effects are equivalent to the simple summation of the individual effects;
- Antagonistic: the cumulative impact is less than the sum of the individual effects; or
- Synergistic: the cumulative impact is greater than the sum of the individual effects.

NatureScot (2025a) guidance was used to assess cumulative effects on birds due to onshore wind energy developments. While antagonistic or synergistic models may occur in real-life settings, the approach adopted in the guidance is based on a simpler additive model.

Cumulative effects have been assessed for all bird species for which detailed assessment has been undertaken in this chapter for which potential negative effects are likely. The potential for cumulative effects with other wind farms, and other developments, due to disturbance and collision mortality has been assessed. The cumulative assessment is based on consideration of residual effects, i.e. assuming that proposed mitigation measures for other wind farm projects are implemented.

Regarding the spatial extent of the cumulative assessment, current NatureScot (2025a) guidance indicates that the default approach should be to assess cumulative effects at the Natural Heritage Zone ("NHZ") scale, unless there is a reasonable alternative. As there are no NHZs in Ireland, or widely accepted alternative, the approach used is based on a 20 km search distance recommended by (IWEA, 2012). With respect to designated sites, other developments, plans and projects which lie within core foraging distances of relevant designated features of the relevant designated sites are considered.

The likely significance of cumulative effects has been determined using the same methods adopted in the assessment of effects for the proposed project considered on its own (see Section 6.2.6.2).

6.2.6.4 Avoidance, Mitigation, Compensation and Enhancement

Where potentially significant effects have been identified, the mitigation hierarchy has been applied, as recommended in the CIEEM guidelines (CIEEM, 2018). The mitigation hierarchy sets out a sequential approach beginning with the avoidance of impacts where possible, the application of mitigation measures to minimise unavoidable impacts and then compensation for any remaining impacts. Once avoidance and mitigation measures have been applied residual effects are then identified along with any necessary compensation measures, and incorporation of opportunities for enhancement.

The differences between avoidance mitigation, compensation and enhancement are defined here as follows:

- Avoidance is used to seek options that avoid harm to ecological features, e.g. through changes in scheme design;
- Mitigation is used to refer to measures to avoid or minimise a specific negative effect, for example, timing restrictions during construction to avoid key periods for certain species;
- Compensation describes measures taken to offset significant residual effects, i.e. where mitigation is not possible, for example, creation of new habitats to compensate for habitats lost or effectively lost due to displacement; and
- Enhancement is the provision of net benefits for biodiversity over and above the requirements for avoidance, mitigation or compensation.

6.2.6.5 Relationship between EIA and AA

It is important to note that the term 'compensation', as defined in the CIEEM guidance in relation to the mitigation hierarchy, is different to 'compensatory measures', which have a specific legal meaning under Article 6(4) of the Habitats Directive (92/43/EEC) in the context of Appropriate Assessment. Compensatory measures in the context of Appropriate Assessment are those measures which are implemented only where a plan or project is permitted to proceed despite adverse effects on the integrity of a European site, in order to ensure that the overall coherence of the Natura 2000 network is maintained.

The Natura Impact Statement (NIS) prepared for the proposed project concludes that, no adverse effects on the integrity of any European site are predicted. Accordingly, compensatory measures, within the context of Article 6(4) of the Habitats Directive, are not required for the proposed project.

Where 'compensation' is referred to within this EIAR it should be understood as referring to 'compensation' within the meaning of the CIEEM guidance (as defined above) rather than 'compensatory measures' within the context of the Appropriate Assessment process.

This assessment for the EIA assesses likely significant effects on IOFs on the basis that standard mitigation by design and good-practice construction controls (e.g., pollution prevention, timing restrictions, nest checks) form part of the proposed project and will be implemented (embedded mitigation). The AA process adopts a different sequencing, initially screening European sites on the basis of plausible pathways and then evaluating whether mitigation ensures no adverse effect on integrity. While the framing differs, the underlying controls assumed are consistent across assessments and, where pathways exist (e.g., hydrological connectivity), the same mitigation measures are relied upon to inform the assessment conclusions.

6.3 EXISTING ENVIRONMENT

6.3.1 Sites Designated for Nature Conservation

Sites that are statutorily designated for their ornithological interest (i.e. SPAs, Ramsar sites[3], Areas of Special Scientific Interest ("ASSIs"), and NHAs) within the relevant study areas are shown in Figure 6-5, Figure 6-6 and Figure 6-7. A brief description of each site within 20 km of the proposed wind farm site and 1 km of the GCR and TDR accommodation areas is provided in Table 6-3, Table 6-4 and Table 6-5. Additional sites with downstream hydrological connectivity or potential ecological connectivity up to and beyond these 20 km and 1 km initial search distances are also shown. Site synopses are shown in Appendix 6-15.

6.3.1.1 Proposed Wind Farm Site

There are two SPAs within the Republic of Ireland ("ROI") and one within Northern Ireland ("NI") within 20 km of the proposed wind farm site, with one additional SPA located beyond 20 km where potential ecological connectivity is possible. There are also two Ramsar sites within 20 km of the proposed wind farm site, both located within NI. There are no NHAs designated for birds within 20 km of the proposed wind farm site but one ASSI with birds mentioned in the citation documents within the same distance. There is only one of these sites with remote downstream connectivity to the proposed wind farm site.

Table 6-3: SPAs, Ramsar Sites and NHAs within Study Area of the Proposed Wind Farm Site and Beyond Where Relevant

Country	Site Name (Code)	Distance & Direction from Site Boundary	Features of Special Conservation Interest[4]
SPAs			
ROI	Sligo / Leitrim Uplands SPA (004187)	9.2 km northwest	Peregrine falcon *Falco peregrinus* (r) Red-billed chough *Pyrrhocorax phyrrhocorax* (r)
	Donegal Bay SPA (004151)	16.5 km northwest (remote downstream hydrological connectivity via Lough Melvin)	Common scoter *Melanitta nigra* (w) Great northern diver *Gavia immer* (w) Light-bellied brent goose *Branta bernicla hrota* (w) Sanderling *Calidris alba* (w) Wetlands and waterbirds

[3] Ramsar sites are recognised under the Ramsar convention (1971), but they do not have standalone statutory protection in Ireland, and their protection derives from overlapping designations such as SPA, SAC or NHA.
[4] Population type for SCI species: p = permanent, r = reproducing, w = wintering and c = concentration

Country	Site Name (Code)	Distance & Direction from Site Boundary	Features of Special Conservation Interest[4]
	Lough Derg (Donegal) SPA (004057)	31 km northeast	Lesser black-backed gull *Larus fuscus* (r) Herring gull *Larus argentatus* (r)
NI	Pettigoe Plateau SPA (UK9020051)	17 km northeast	European golden plover *Pluvialis apricaria* (r) Greenland white-fronted goose *Anser anser albifrons* (w)
Ramsar sites			
NI	Pettigoe Plateau	17 km northeast	European golden plover (r)
	Cuilcagh Mountain	17 km southeast	European golden plover (r) Merlin *Falco columbarius* (p)
ASSIs			
NI	Cuilcagh Mountain ASSI	17 km southeast	European golden plover (r) Peregrine falcon (r) Merlin (r)

6.3.1.2 GCR

There are no SPAs, Ramsar sites or NHAs designated for birds located within 1 km of the GCR. There is one SPA with remote downstream hydrological connectivity to the GCR.

Table 6-4: SPAs, Ramsar Sites and NHAs within Study Area of the GCR and Beyond Where Relevant

Country	Site Name (Code)	Distance & Direction from Site Boundary	Features of Special Conservation Interest[5]
SPAs			
ROI	Ballysadare Bay SPA (004192)	16.2 km northwest but with remote, downstream hydrological connectivity	Light-bellied brent goose (w) Grey plover *Pluvialis squatarola* (w) Dunlin *Calidris alpina* (w)

[5] Population type for SCI species: p = permanent, r = reproducing, w = wintering and c = concentration

Country	Site Name (Code)	Distance & Direction from Site Boundary	Features of Special Conservation Interest[5]
			Bar-tailed godwit *Limosa lapponica* (w) Common redshank *Tringa totanus* (w)

6.3.1.3 TDR Accommodation Areas

There are four SPAs and two Ramsar sites within 1 km of the TDR accommodation areas with one site having downstream hydrological connectivity also. There are no NHAs designated for birds located within the same distance.

Table 6-5: SPAs and Ramsar Sites within Study Area of TDR Accommodation Areas and Beyond Where Relevant

Country	Site Name (Code)	Distance & Direction from Site Boundary	Features of Special Conservation Interest[6]
SPAs / Ramsar sites			
ROI	Cummeen Strand SPA (004035) / Ramsar site	20 m from accommodations area 13 and downstream hydrological connectivity	Light-bellied brent goose (w) Eurasian oystercatcher *Haematopus ostralegus* (w) Common redshank (w) Wetlands and waterbirds
	Sligo / Leitrim Uplands SPA (004187)	216 m from accommodation area 25	Peregrine falcon (r) Red-billed chough (r)
	Drumcliff Bay SPA (004013)	250 m from accommodation area 55 (part 2)	Sanderling (w) Bar-tailed godwit (w) Wetlands and waterbirds
	Donegal Bay SPA (004151)	300 m from accommodation area 53	Common scoter (w) Great northern diver (w) Light-bellied brent goose (w) Sanderling (w) Wetlands and waterbirds

[6] Population type for SCI species: p = permanent, r = reproducing, w = wintering and c = concentration

Figure 6-5: Designated Sites for Nature Conservation - Wind Farm Site

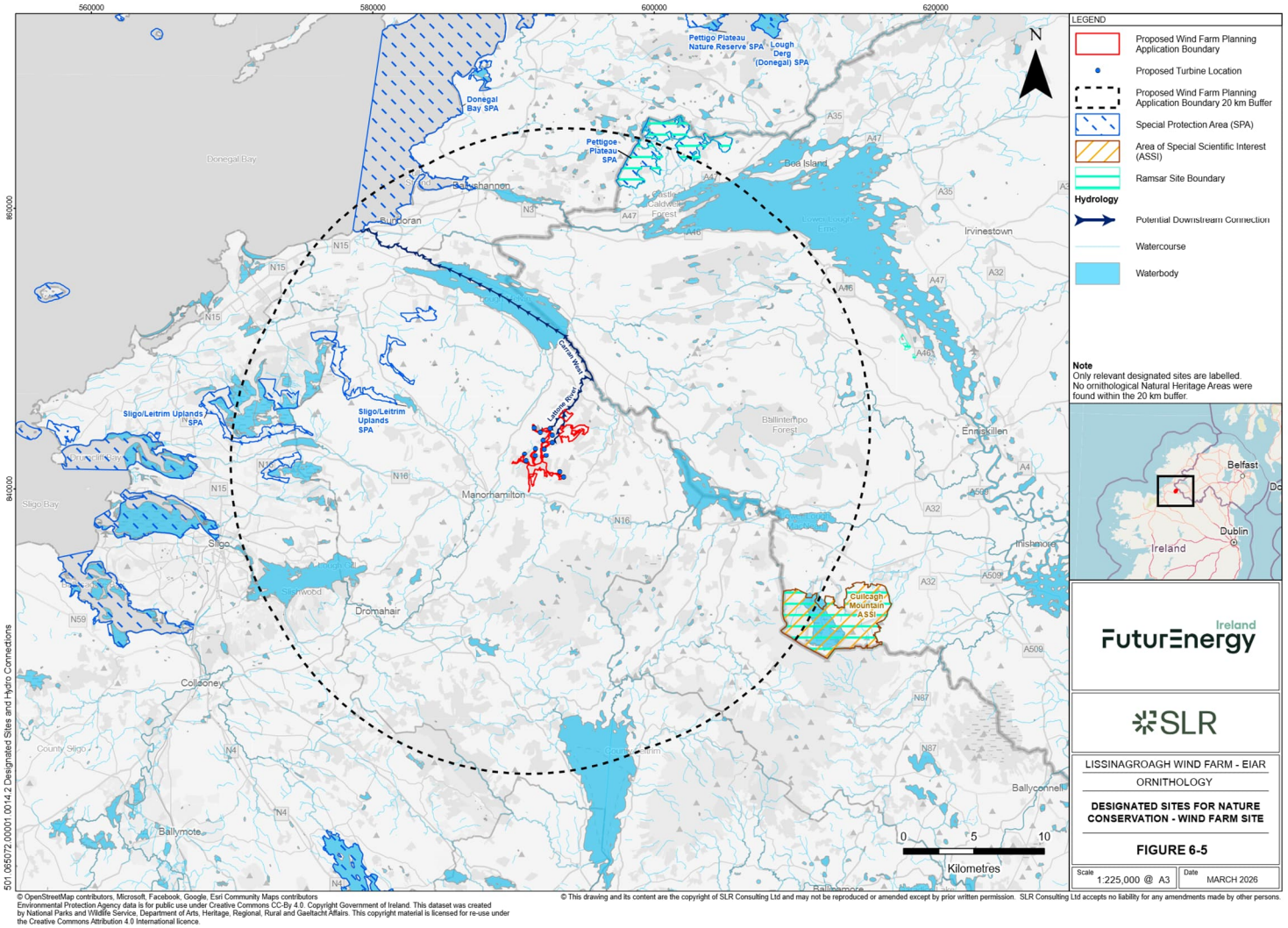


Figure 6-6: Designated Sites for Nature Conservation – GCR

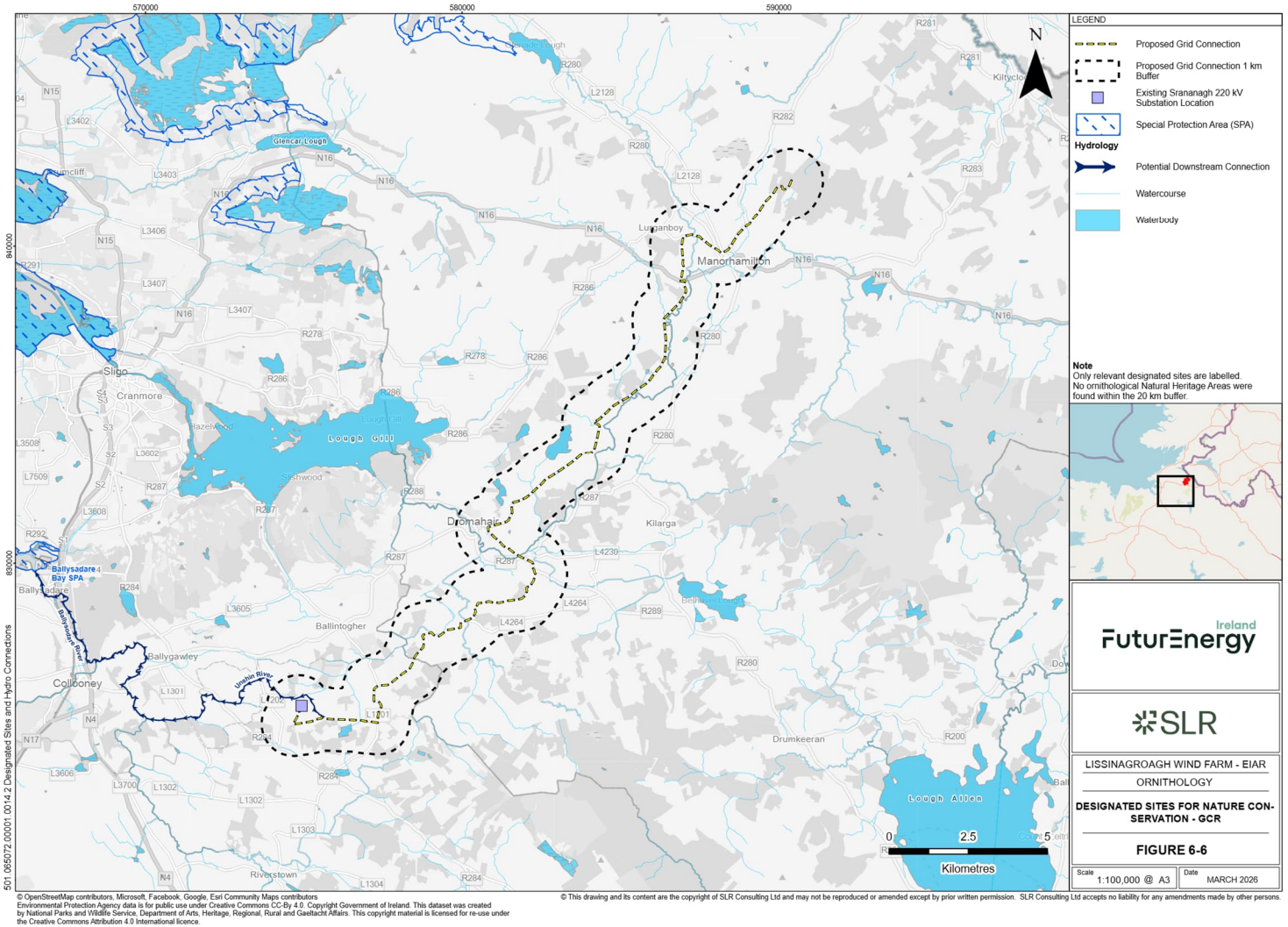
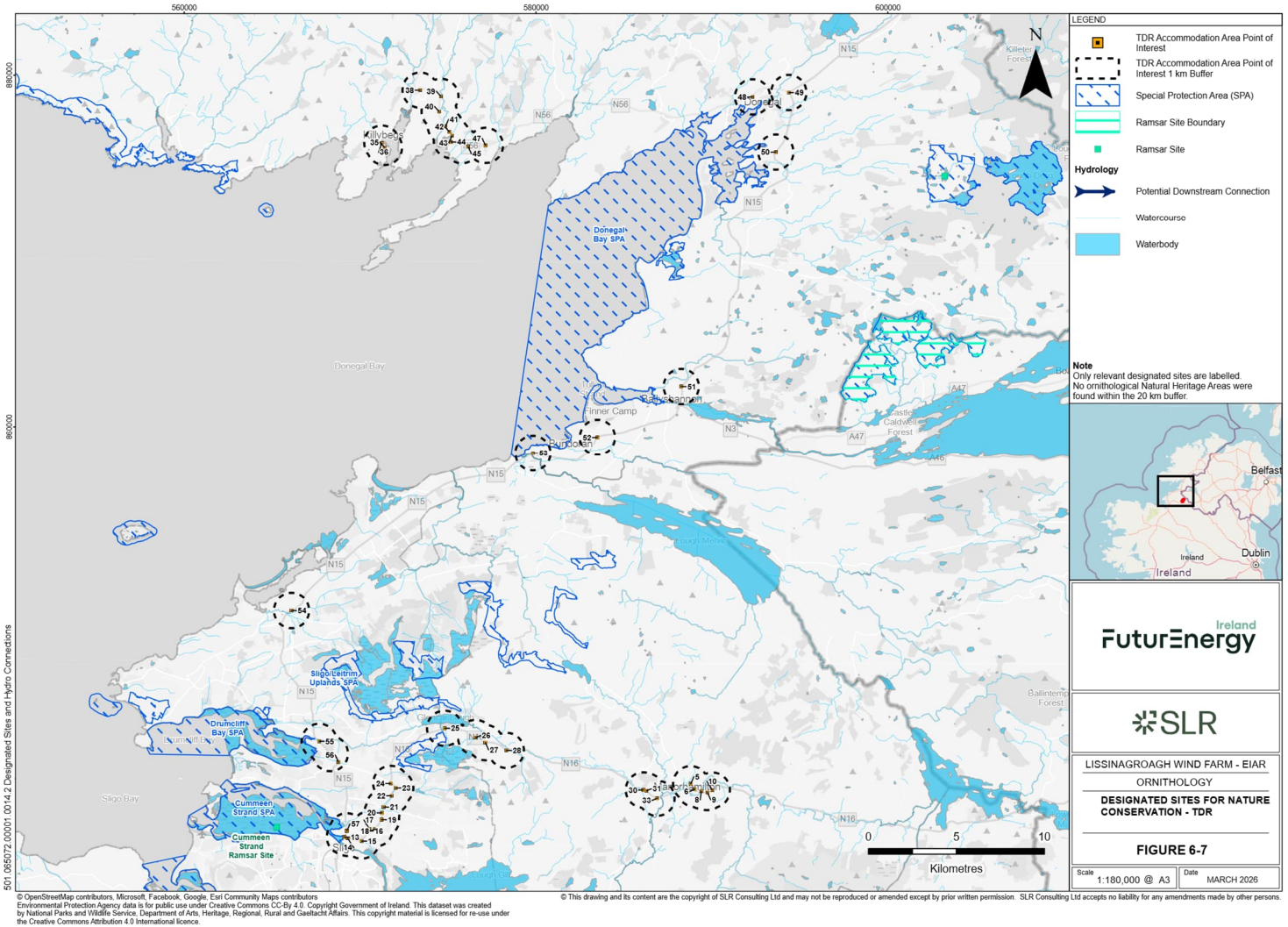


Figure 6-7: Designated Sites for Nature Conservation -TDR



6.3.2 Other Sites of Conservation Interest

Other sites of conservation interest where birds are mentioned are shown in Figures 6-8, 6-9 and 6-10. A brief description of each site within 20 km of the proposed wind farm site and 1 km of the GCR and TDR accommodation areas is provided in Table 6-6 and Table 6-7. Additional sites with downstream hydrological connectivity up to and beyond these 20 km and 1 km initial search distances are also presented. Site synopses are shown in Appendix 6-15.

6.3.2.1 Proposed Wind Farm Site

There are three pNHAs and three non-designated important breeding areas for hen harrier within 20 km of the proposed wind farm site. The Leitrim Uplands non-designated important breeding area for hen harrier overlaps with the site.

There are no nature reserves where birds are mentioned in the site synopses within 20 km of the proposed wind farm site within ROI or NI.

Table 6-6: pNHAs and Hen Harrier Non-Designated Important Breeding Areas within Study Area of the Proposed Wind Farm Site and Beyond Where Relevant

Country[7]	Site Name (Code)	Distance / Direction from Site Boundary	Species[8]
pNHAs			
ROI	Owengar Wood pNHA (001419)	16.8 km south	Common pheasant *Phasianus colchicus* (u) Eurasian woodcock (u)
	Colgagh Lough pNHA (001658)	16.5 km southwest	Common goldeneye *Bucephala clangula* (u) Common pochard *Aythya ferina* (u) Green-winged teal *Anas crecca* (u) Grey heron *Ardea cinerea* (u) Little grebe *Tachybaptus ruficollis* (u) Mallard *Anas platyrhynchos* (u) Mute swan *Cygnus olor* (u) Tufted duck *Aythya fuligula* (u) Whooper swan *Cygnus cygnus* (w)

[7] ROI = Republic of Ireland, NI = Northern Ireland
[8] Key to populations: b = breeding, r = resident, w = wintering and u = unspecified

Country[7]	Site Name (Code)	Distance / Direction from Site Boundary	Species[8]
	Erne Estuary / Finner Dunes pNHA (000139) – partially overlaps with Donegal Bay SPA	16.5 km northwest	Common ringed plover *Charadrius hiaticula* (w) Dunlin *Calidris alpina* (w) Eurasian oystercatcher (w) Eurasian wigeon *Mareca penelope* (w) Great cormorant *Phalacrocorax carbo* (w) Green-winged teal (w) Long-tailed duck *Clangula hyemalis* (w) Northern lapwing *Vanellus vanellus* (w) Red-breasted merganser *Mergus serrator* (w) Sanderling (w)
Hen Harrier Non-Designated Important Breeding Areas			
ROI	Leitrim Uplands	0 km	Hen harrier (b)
	South Donegal 2	15.5 km northeast	
	Slieve Rushen	16.8 km southeast	

6.3.2.2 GCR

The Leitrim Upland non-designated important breeding area for hen harrier overlaps with the northern component of the GCR nearest to the proposed wind farm site.

There are no pNHAs where birds are mentioned in the site synopses or nature reserves within 1 km of the GCR and no downstream hydrological connectivity to the same.

6.3.2.3 TDR Accommodation Areas

There is one pNHA where birds are mentioned in the site synopsis that is within 1 km of the TDR accommodation areas and no sites with downstream hydrological connectivity.

Table 6-7: pNHAs and Hen Harrier Non-Designated Important Breeding Areas within Study Area of the TDR Accommodation Areas

Country[9]	Site Name (Code)	Distance / Direction from Site Boundary	Species[10]
pNHAs			
ROI	Erne Estuary / Finner Dunes pNHA (000139) – partially overlaps with Donegal Bay SPA	785 m from accommodations area 52	Common ringed plover (w) Dunlin (w) Eurasian oystercatcher (w) Eurasian wigeon (w) Great cormorant (w) Green-winged teal (w) Long-tailed duck (w) Northern lapwing (w) Red-breasted merganser (w) Sanderling (w)

[9] ROI = Republic of Ireland, NI = Northern Ireland
[10] Key to populations: b = breeding, r = resident, w = wintering and u = unspecified

Figure 6-8: Other Sites of Conservation Interest - Wind Farm Site

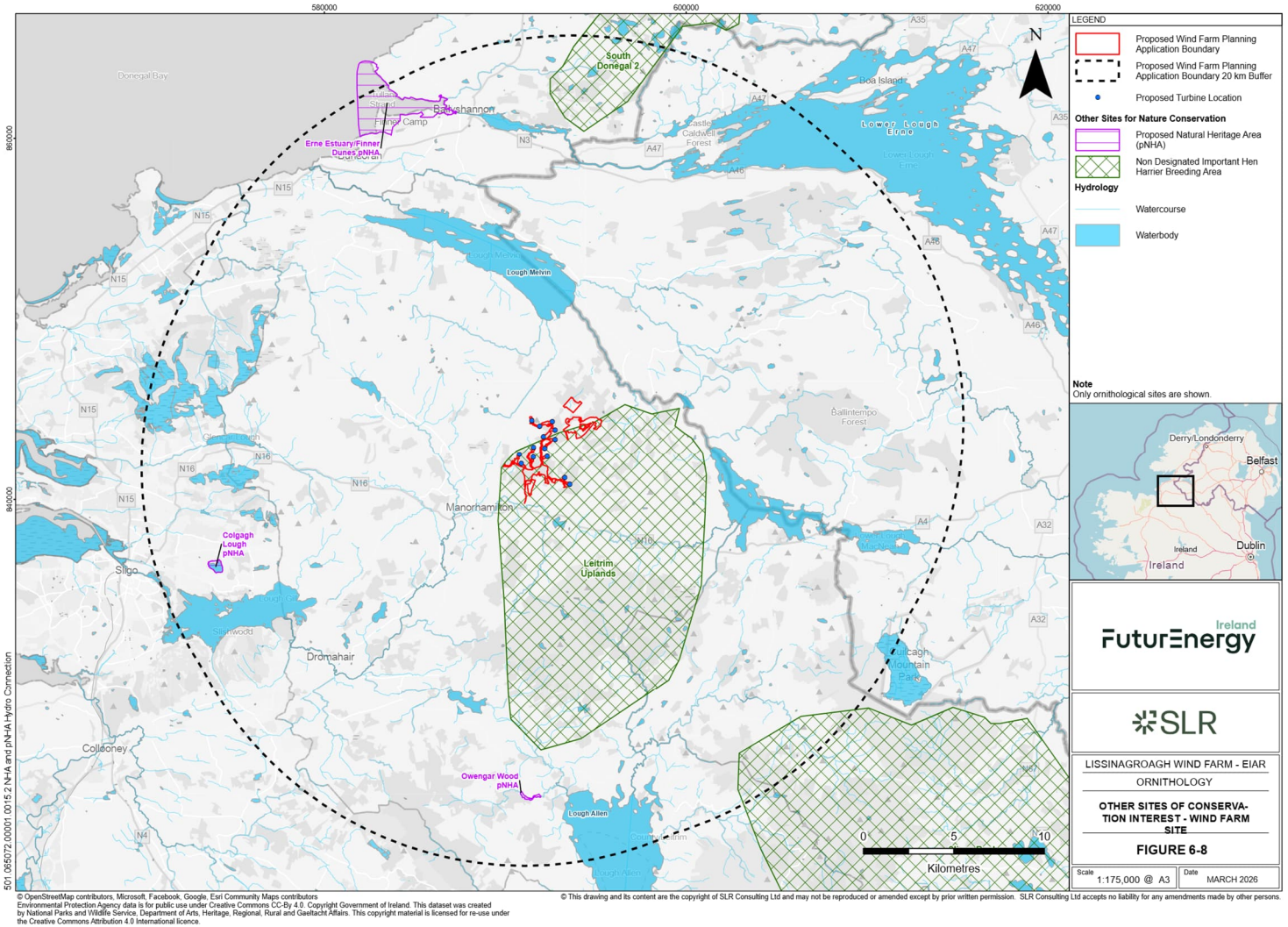


Figure 6-9: Other Sites of Conservation Interest – GCR

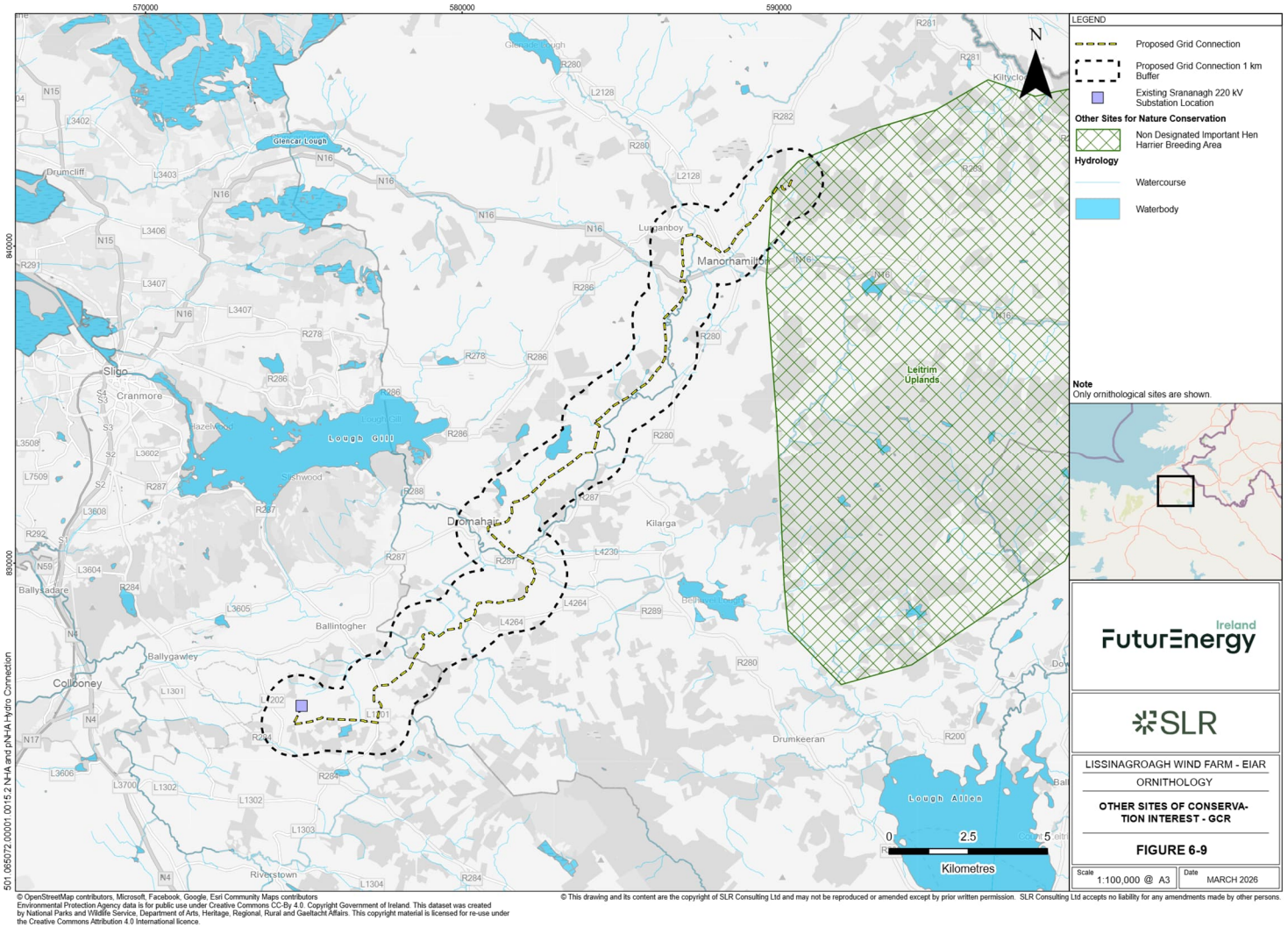
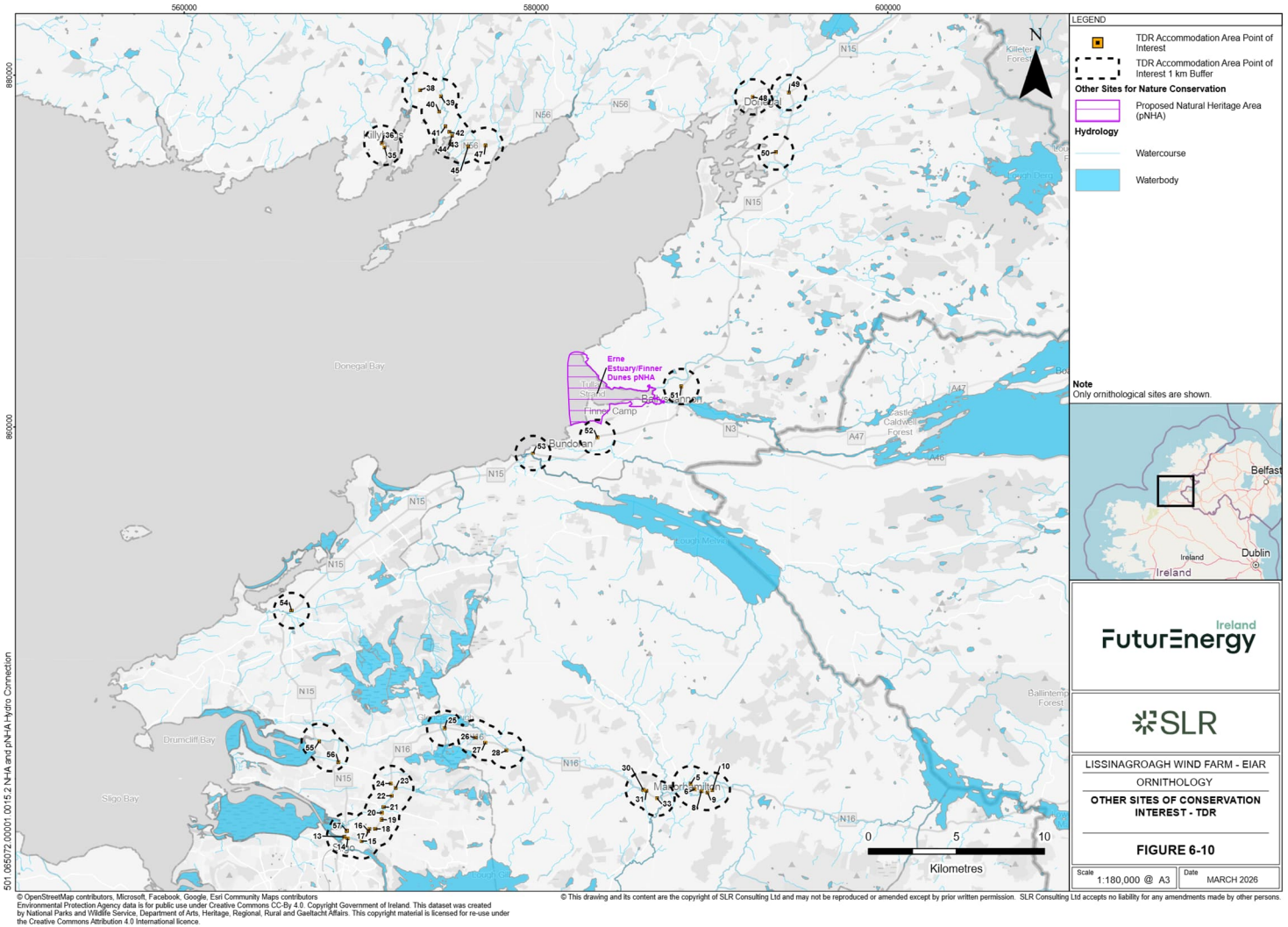


Figure 6-10: Other Sites of Conservation Interest - TDR



6.3.3 Bird Species

6.3.3.1 Proposed Wind Farm Site

6.3.3.1.1 Previous Survey Data

Survey information relating to the 2018, 2019 and 2020 breeding seasons and 2017/18 and 2018/19 non-breeding seasons (MKO, 2018a, 2018b, 2019, 2020, 2025) has been summarised below. These data have not been used for the current Chapter but provide background context, with only data from the 2020/21 non-breeding season onwards used to represent the Existing Environment and for impact assessment.

In general, the assemblage of upland and woodland species previously recorded was the same as for surveys conducted for the 2020/21 non-breeding season onwards, with similar levels of flight activity recorded also.

Across the three-breeding season and two non-breeding season surveys, confirmed breeding was recorded for hen harrier in all years with two nests identified in 2020, one of which fledged at least one chick. Common kestrel bred near but outside the proposed wind farm site in all seasons. Breeding evidence for Eurasian woodcock and common snipe was present throughout the surveys, with confirmed territories for both species in 2020. Red grouse remained present throughout, with probable breeding within the general area but outside 500 m of the proposed wind farm site. Occasional observations of European golden plover, and whooper swan were recorded.

One flock of four whooper swan was recorded during the 2017/18 non-breeding season in October 2017 but off-site, more than 500 m from the proposed turbine locations to the west. Another flock of four whooper swan was also recorded in the 2018/19 non-breeding season in November 2018, below collision risk heights and well beyond 500 m from the proposed turbine locations, again to the west near Tawnyfeacle.

No hen harrier winter roosts were recorded during the 2017/18 and 2018/19 non-breeding season.

Peregrine falcon was recorded in earlier survey datasets but was not detected during the first four years of surveys informing the current assessment. The species was observed once in the 2017/18 non-breeding season survey, once in the 2019 breeding season survey, and once in the 2020 breeding season survey. It was subsequently recorded again in the 2025 breeding season. Across all survey years, there was no indication of regular site use or breeding activity, and the species is therefore assessed as an occasional visitor.

Barnacle goose *Branta leucopsis* was also recorded in the 2017/18 non-breeding season, comprising a flock of 23 birds flying over the collision risk zone during an October vantage point survey. No further sightings were made in any subsequent survey and there was no evidence of regular site usage.

There were no records of golden eagle *Aquilla chrysaetos*, osprey *Pandion haliaetus* and white-tailed eagle *Haliaeetus albicilla* in the previous survey data. However, NPWS consultation in March 2026 identified a tentative (non-confirmed) breeding attempt by white-tailed eagle in 2025 c.5-6 km from the proposed wind farm site.

The CEDaR data request showed that there are no species of migratory birds recorded at the proposed project site within the dataset informing this assessment that are also known to occur

regularly within Northern Ireland. While osprey is a scarce summer migrant and has been recorded both at Lough Melvin and during surveys at the proposed project, its migratory behaviour involves long-distance movements to Africa (Mackrill, 2024) rather than cross-border movements within Ireland, and therefore does not give rise to any meaningful transboundary pathway (see Section 6.4.8).

6.3.3.1.2 Flight Activity Surveys

A summary of the 16 primary target species recorded during flight activity surveys undertaken from the 2020-21 non-breeding season onwards is given in Table 6-8. This represents a summary of the raw data presented in Appendices 6-2 to 6-9 so includes all recorded flights, not just those within 500 m of proposed turbine locations (the collision risk zone). Thus, this table differs to that used for CRM shown in Appendix 6-14, which exclusively focuses on those within the collision risk zone, and uses slightly different seasonal definitions (see Section 6.2.5.2).

Flight activity was low for most species throughout the study period. The main exceptions were for common kestrel, common snipe, lesser black backed gull, and breeding hen harrier, with concentrations of flight activity around nest sites for the latter species.

Note there are some minor discrepancies in the number of flight lines reported in this Chapter and in Appendices 6-2 to 6-9 as the results in Appendices 6-2 to 6-9 are framed in terms of 'observations' rather than flight lines. Some observations in these appendices are of stationary birds and so the results in this Chapter and figures reflect flying birds only given the survey type (flight activity surveys). All subsequent impact assessment for collision risk is based on flight lines only.

Table 6-8: Summary of Flight Activity Survey Results for Primary Target Species

Species	Number of Flight Lines per Season								Peak Count in Any Single Flight Line	Cumulative Number of Birds	Total Time Spent at Collision Risk Heights ("CRH") (s)	Any Flight Lines Within Collision Risk Zone
	NB 20/21	B 21	NB 21/22	B 22	B 23	B 24	B 25	Total				
Black-headed gull *Chroicocephalus ridibundus*	-	-	-	1	11	2	2	16	134	349	5,880	Yes
Common kestrel *Falco tinnunculus*	2	3	7	11	8	28	16	74	2	72	17,496	Yes
Common snipe *Gallinago gallinago*	6	8	10	10	25	74	52	181	21	398	29,749	Yes
Eurasian woodcock	4	-	3	1	1	-	-	9	1	9	13	No
European golden plover	1	4	12	3	-	2	-	22	100	739	3,376	Yes
Great cormorant	-	-	-	-	1	1	1	3	3	6	340	Yes
Hen harrier	5	79	11	24	34	17	8	178	4	196	10,494	Yes
Herring gull	-	-	-	-	4	-	2	6	18	33	2,060	Yes
Lesser black-backed gull	-	2	-	8	19	27	15	71	37	475	11,706	Yes
Little egret *Egretta garzetta*	-	-	-	-	2	-	-	2	3	5	320	No
Mallard	-	-	-	-	1	-	1	2	13	16	334	No
Merlin	1	-	-	1	1	5	3	11	1	10	170	Yes
Peregrine	1	-	-	-	-	-	2	3	1	3	195	Yes

Species	Number of Flight Lines per Season								Peak Count in Any Single Flight Line	Cumulative Number of Birds	Total Time Spent at Collision Risk Heights ("CRH") (s)	Any Flight Lines Within Collision Risk Zone
	NB 20/21	B 21	NB 21/22	B 22	B 23	B 24	B 25	Total				
Red grouse	2	-	-	1	1	-	-	4	1	4	0	Yes
White-tailed eagle	-	-	-	-	1	1	2	4	1	5	1,840	Yes
Whooper swan	-	-	1	-	-	-	-	1	8	8	50	No

An overview of the flight activity data for each IOF species collected is given in Figures 6-11 to 6-25, with the exception of hen harrier flight activity, as the patterns of flight activity are strongly associated with nesting locations (see Section 6.3.3.1.3.1.1 for further information on treatment of sensitive ornithological data).

Figure 6-11: Overview of Flight Activity Data for All Species Except Hen Harrier: Black-Headed Gull

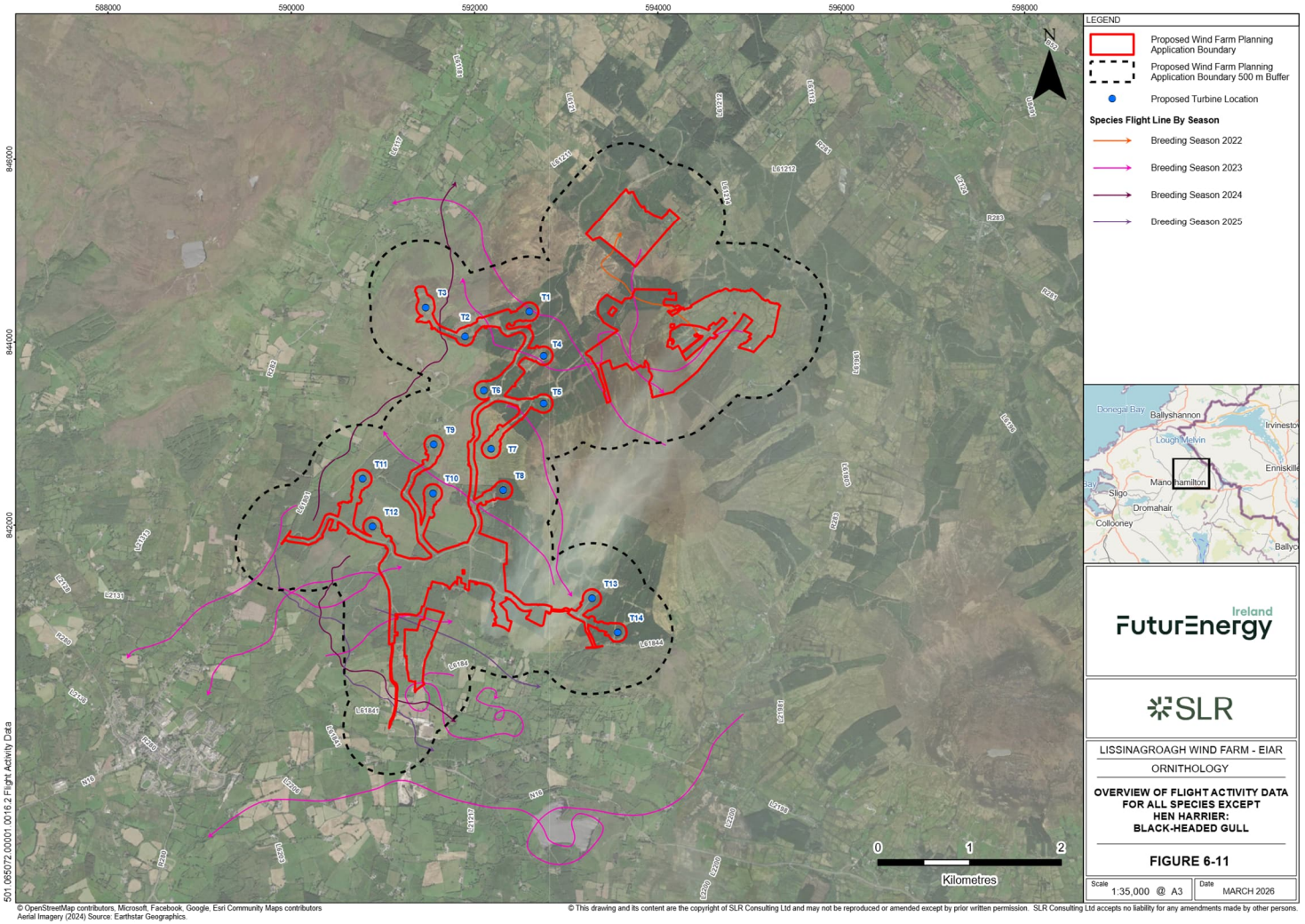


Figure 6-12: Overview of Flight Activity Data for All Species Except Hen Harrier: Common Kestrel

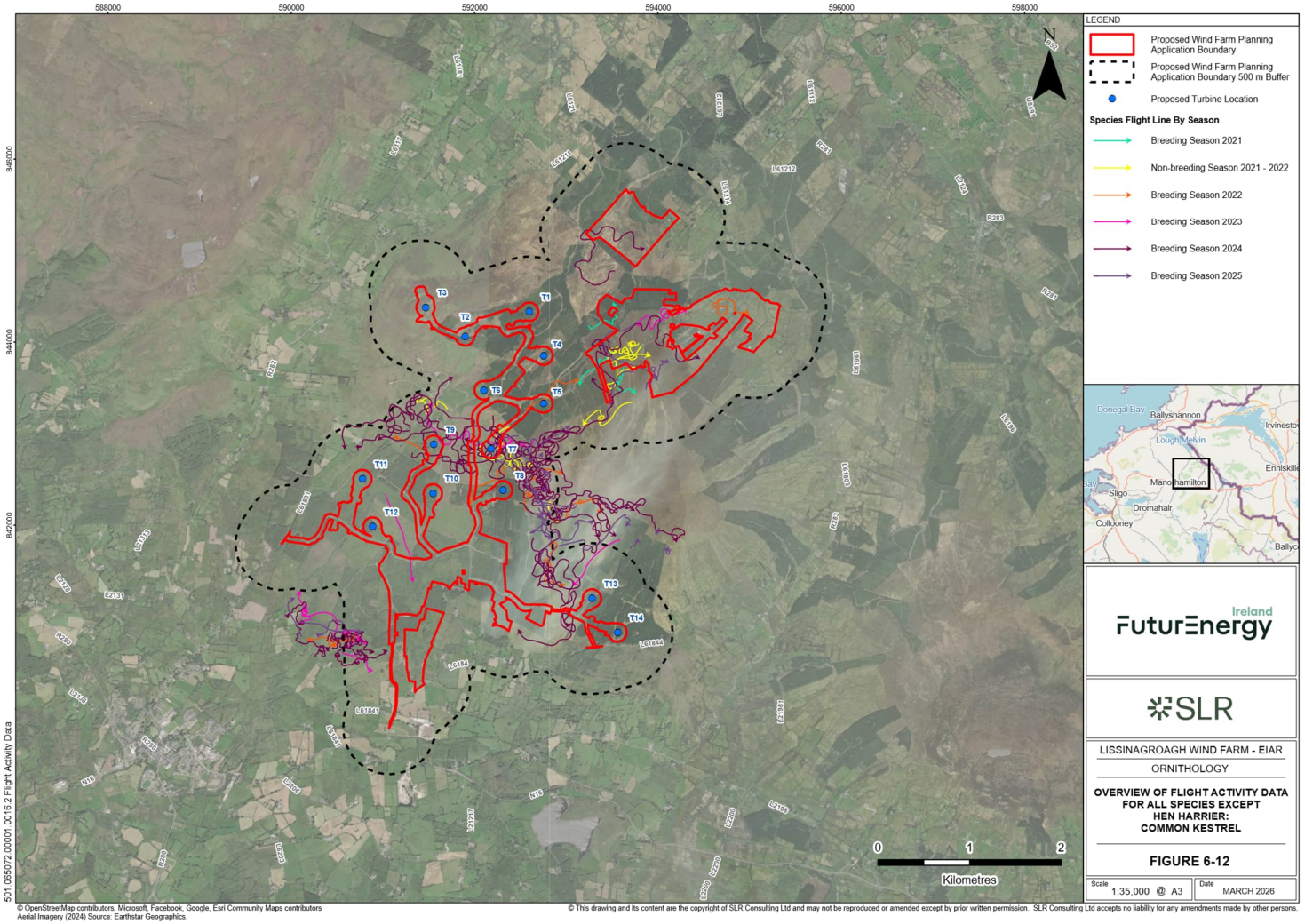


Figure 6-13: Overview of Flight Activity Data for All Species Except Hen Harrier: Common Snipe

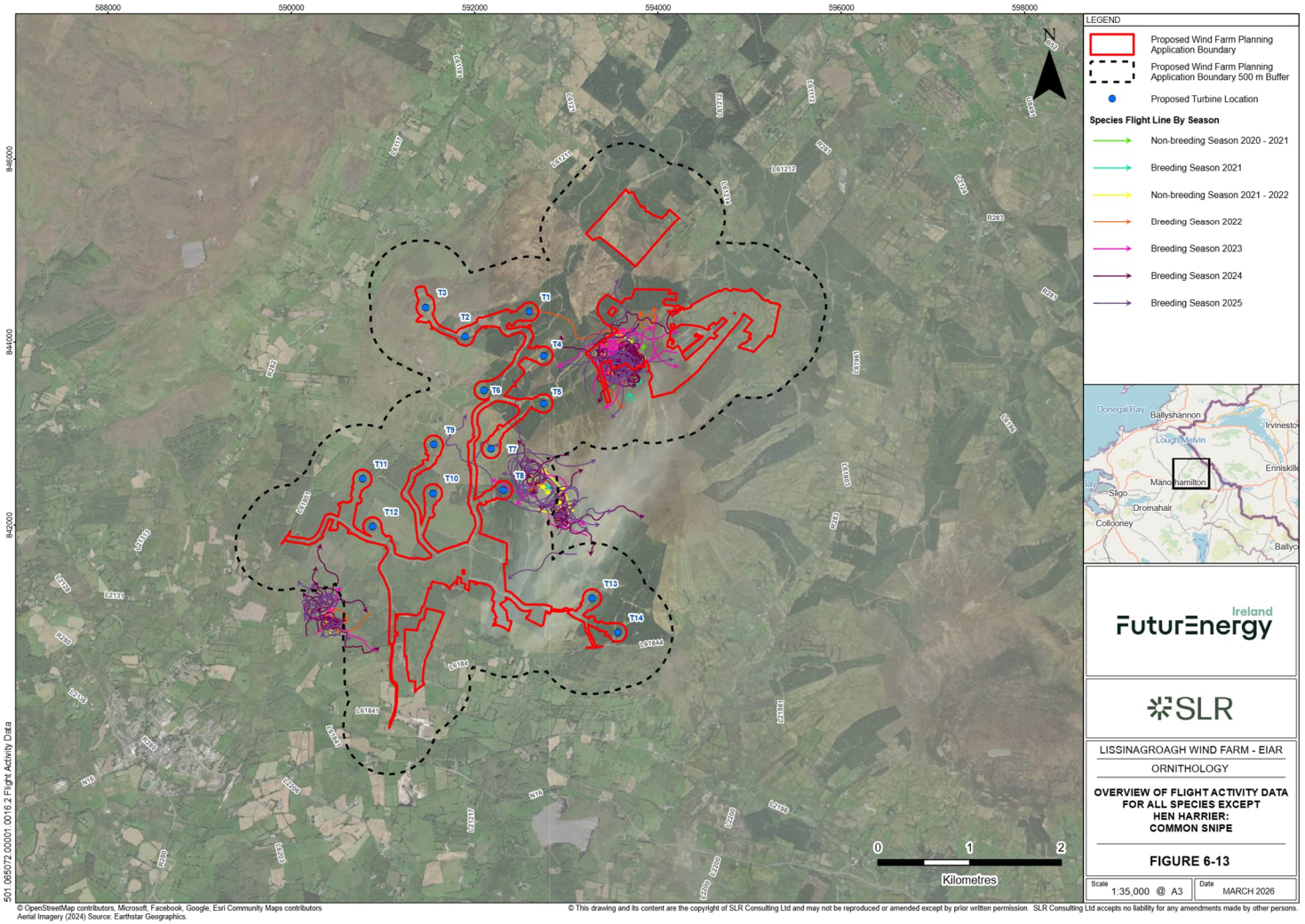


Figure 6-14: Overview of Flight Activity Data for All Species Except Hen Harrier: Eurasian Woodcock

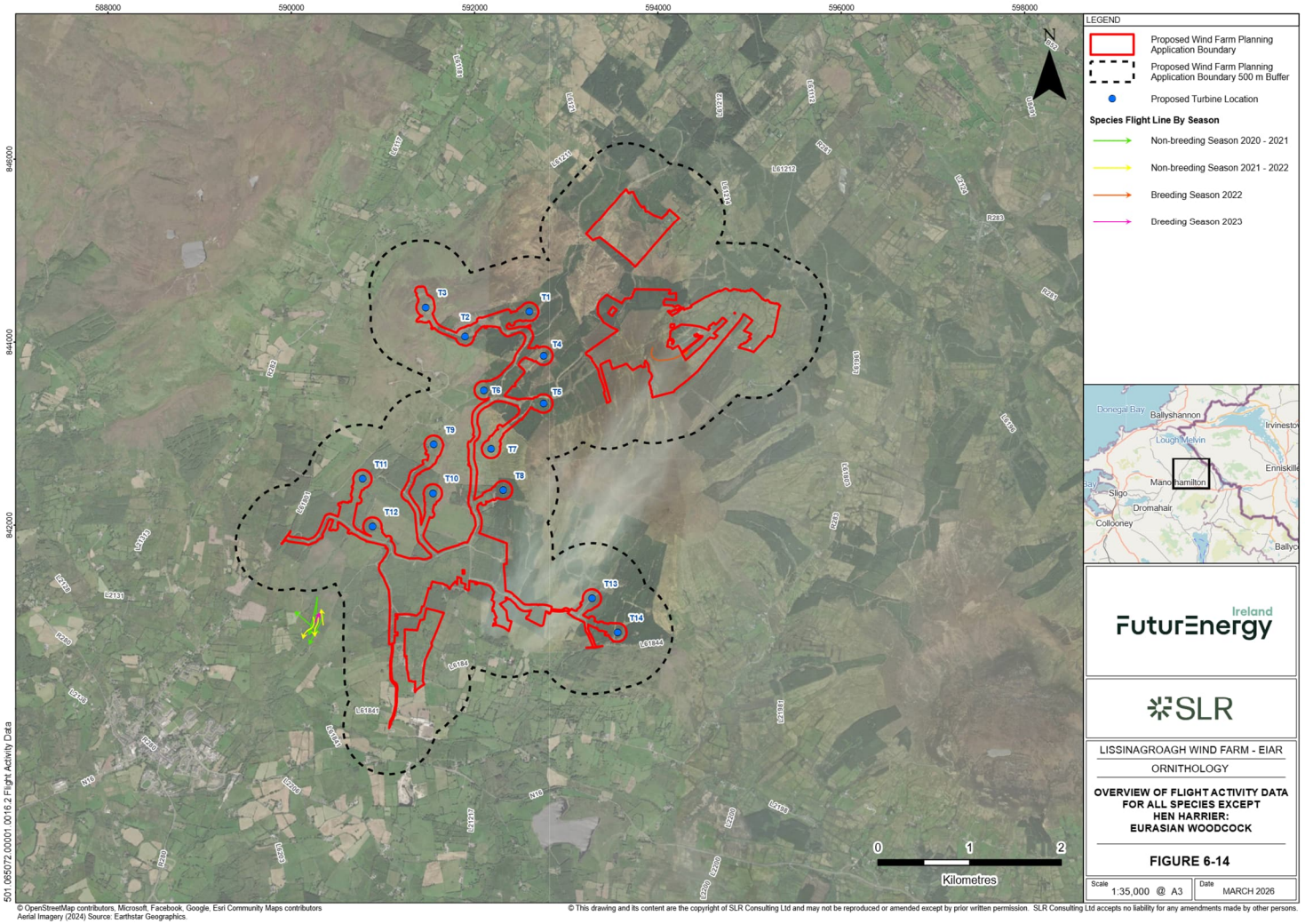


Figure 6-15: Overview of Flight Activity Data for All Species Except Hen Harrier: European Golden Plover

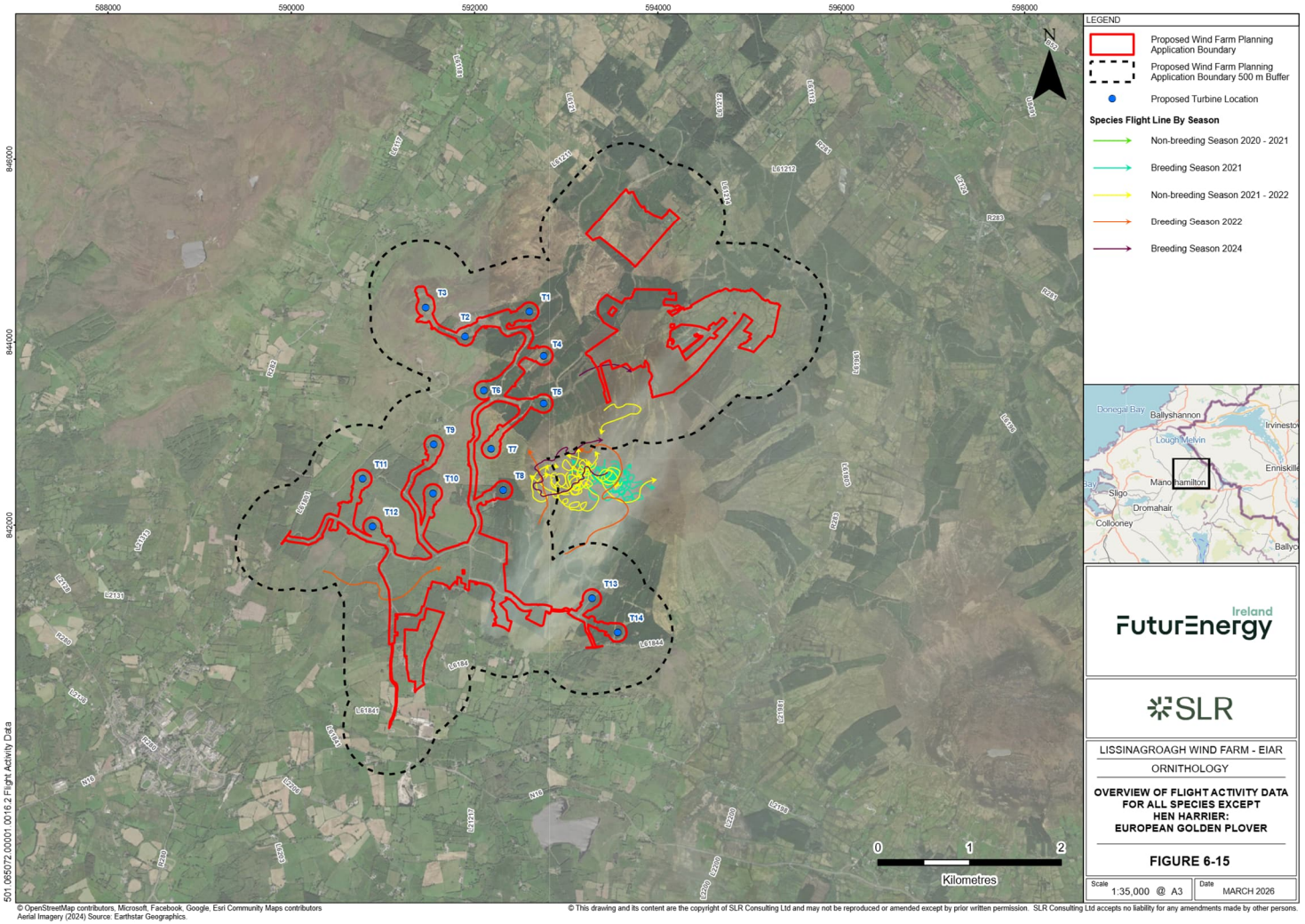


Figure 6-16: Overview of Flight Activity Data for All Species Except Hen Harrier: Great Cormorant

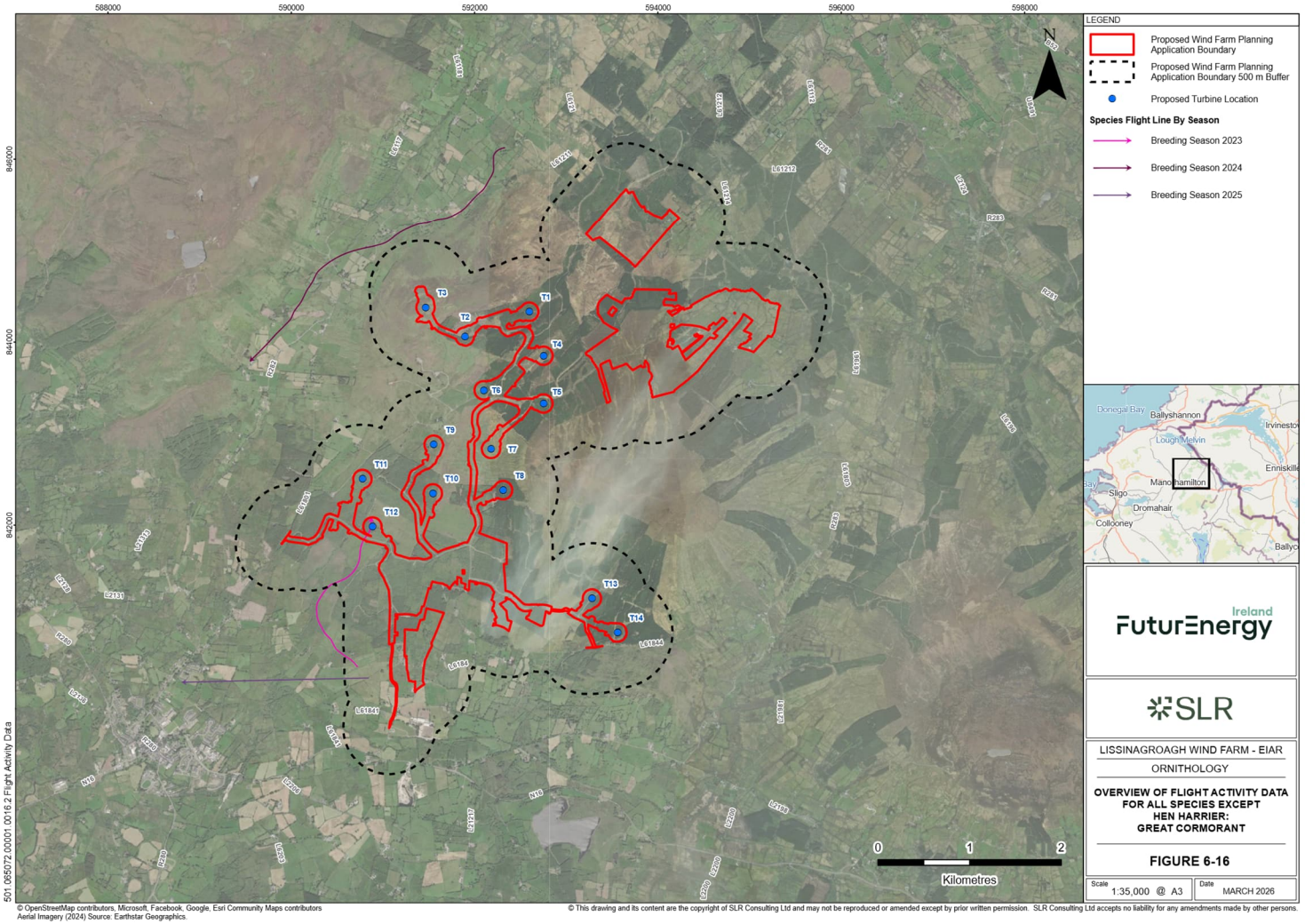


Figure 6-17: Overview of Flight Activity Data for All Species Except Hen Harrier: Herring Gull

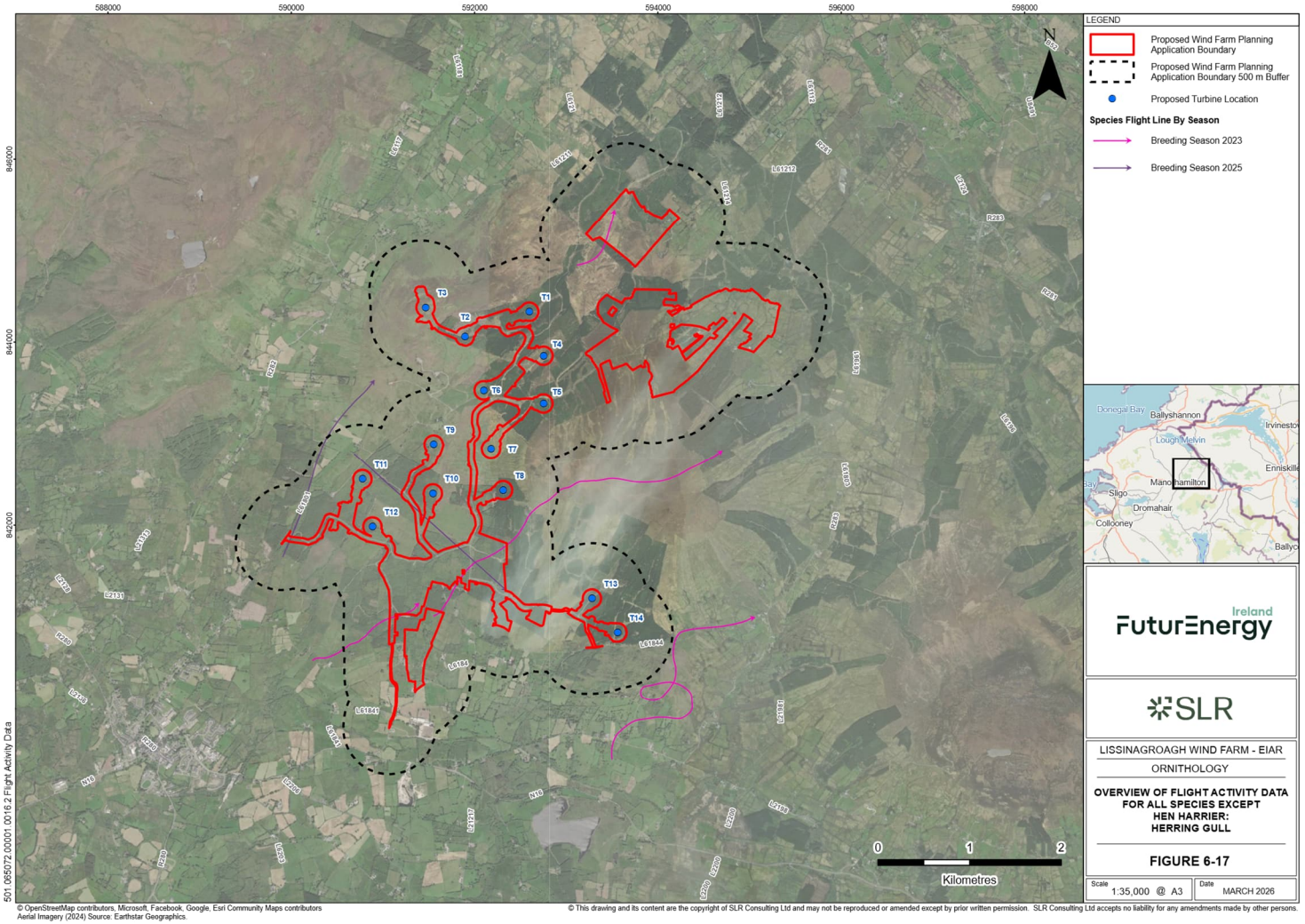


Figure 6-18: Overview of Flight Activity Data for All Species Except Hen Harrier: Lesser Black-Backed Gull

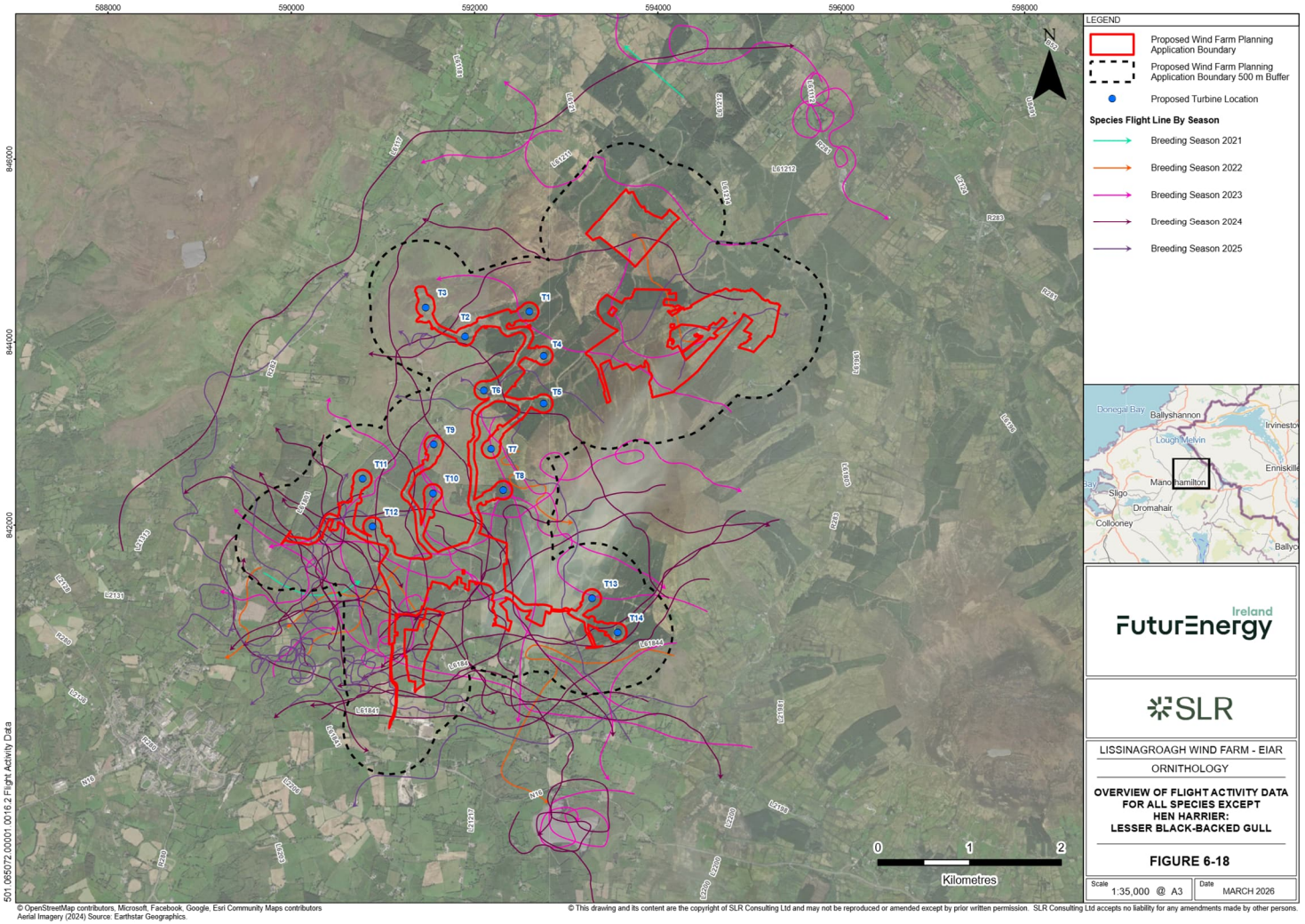


Figure 6-19: Overview of Flight Activity Data for All Species Except Hen Harrier: Little Egret

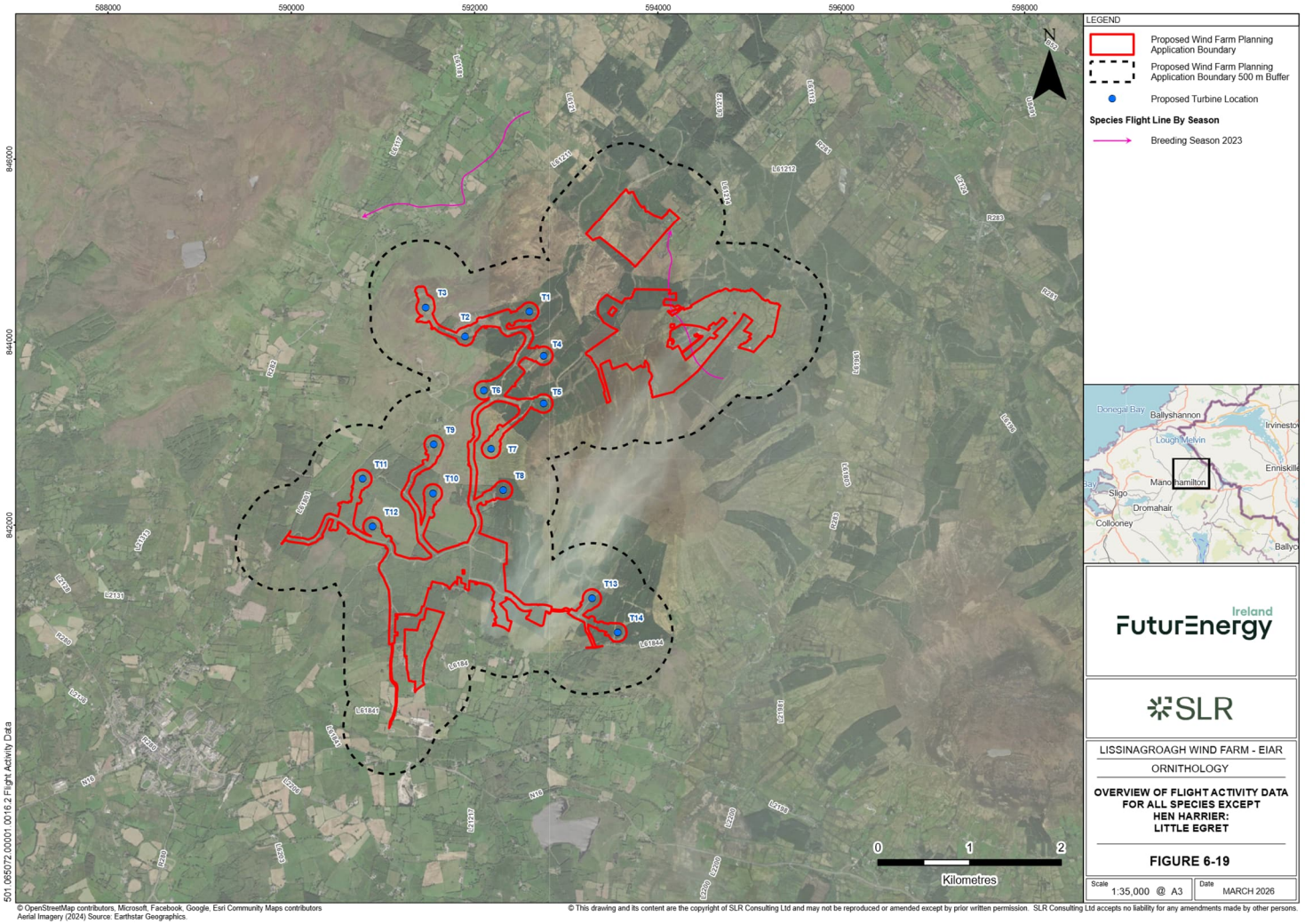


Figure 6-20: Overview of Flight Activity Data for All Species Except Hen Harrier: Mallard

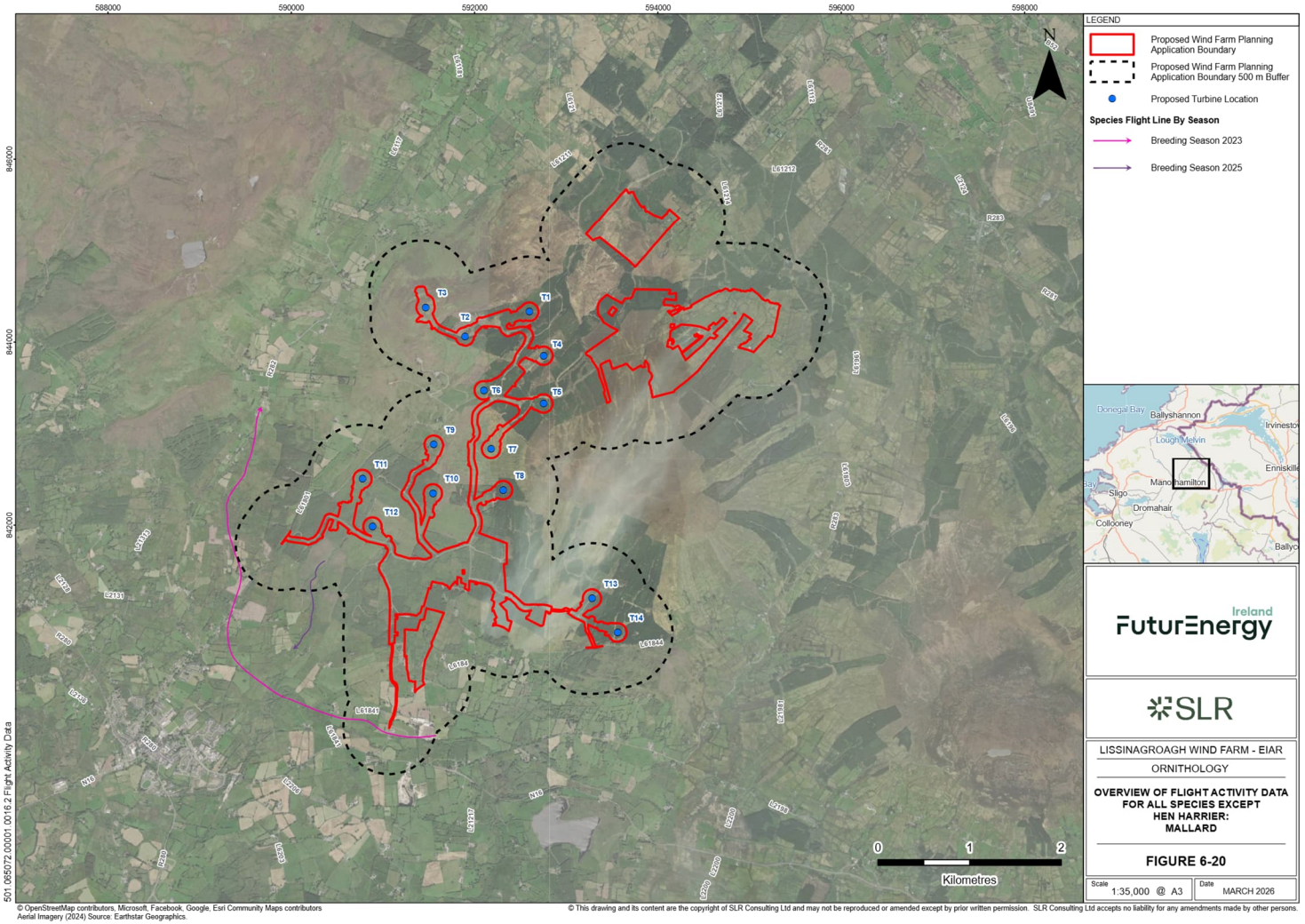


Figure 6-21: Overview of Flight Activity Data for All Species Except Hen Harrier: Merlin

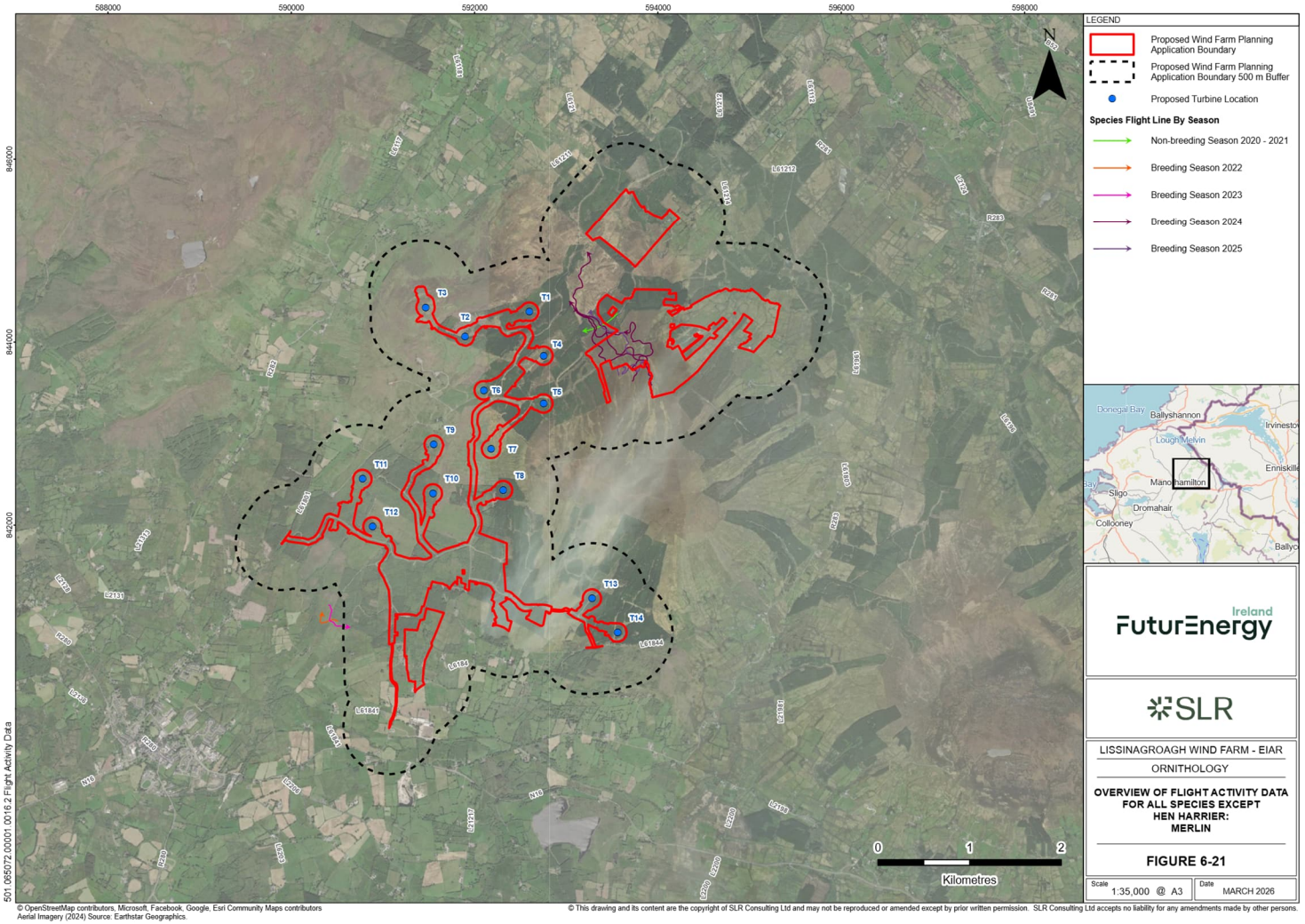


Figure 6-22: Overview of Flight Activity Data for All Species Except Hen Harrier: Peregrine

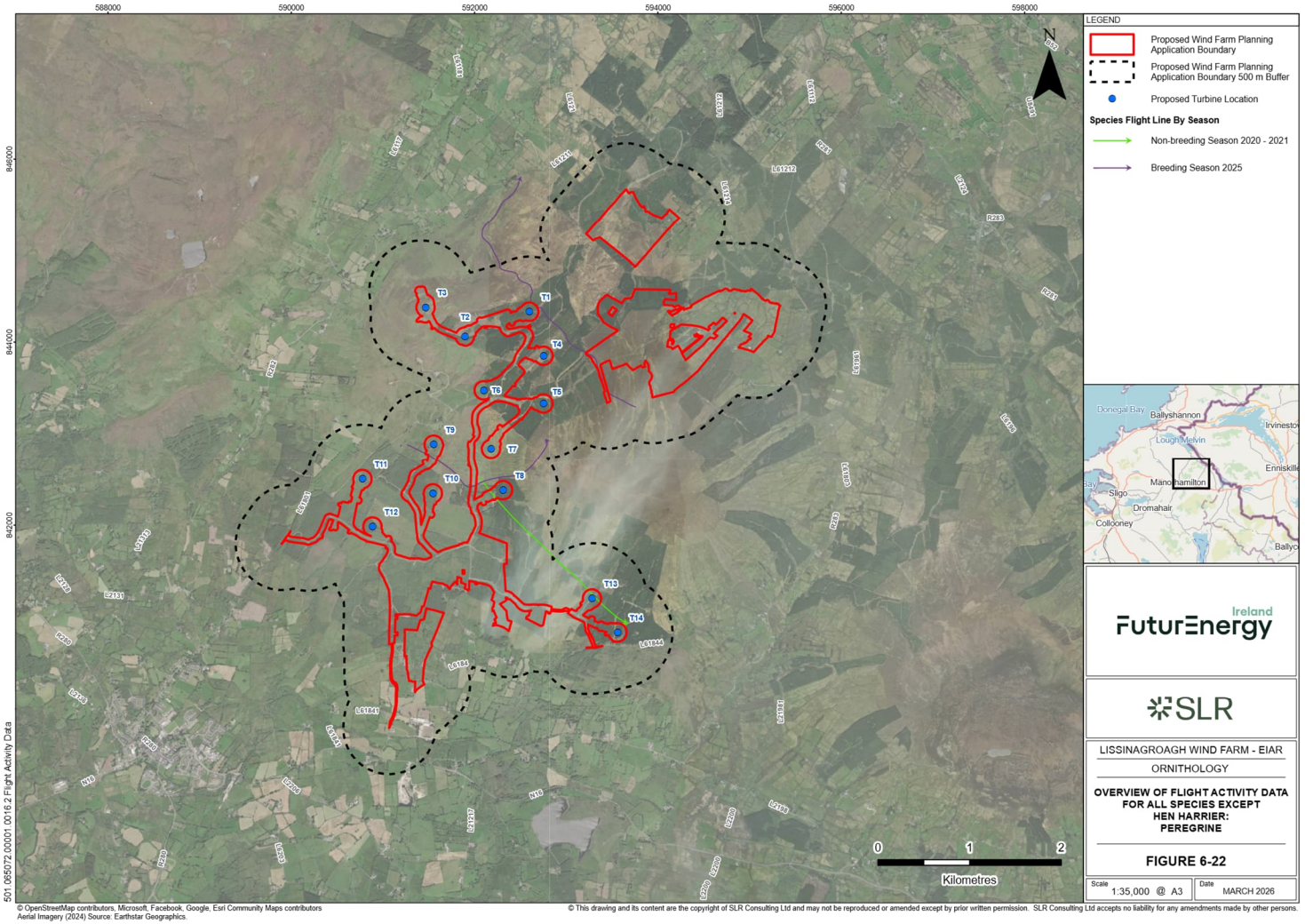


Figure 6-23: Overview of Flight Activity Data for All Species Except Hen Harrier: Red Grouse

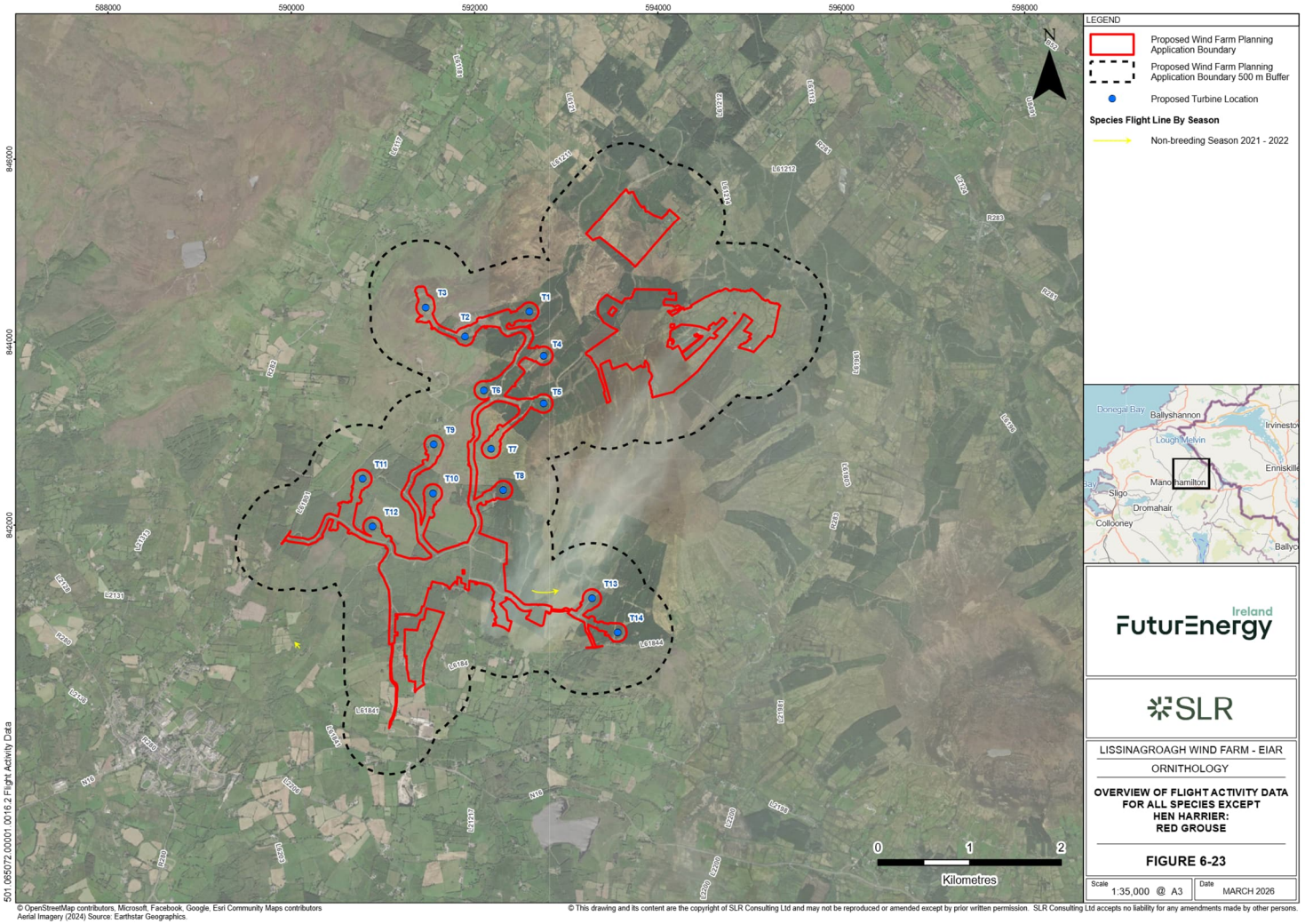


Figure 6-24: Overview of Flight Activity Data for All Species Except Hen Harrier: White-Tailed Eagle

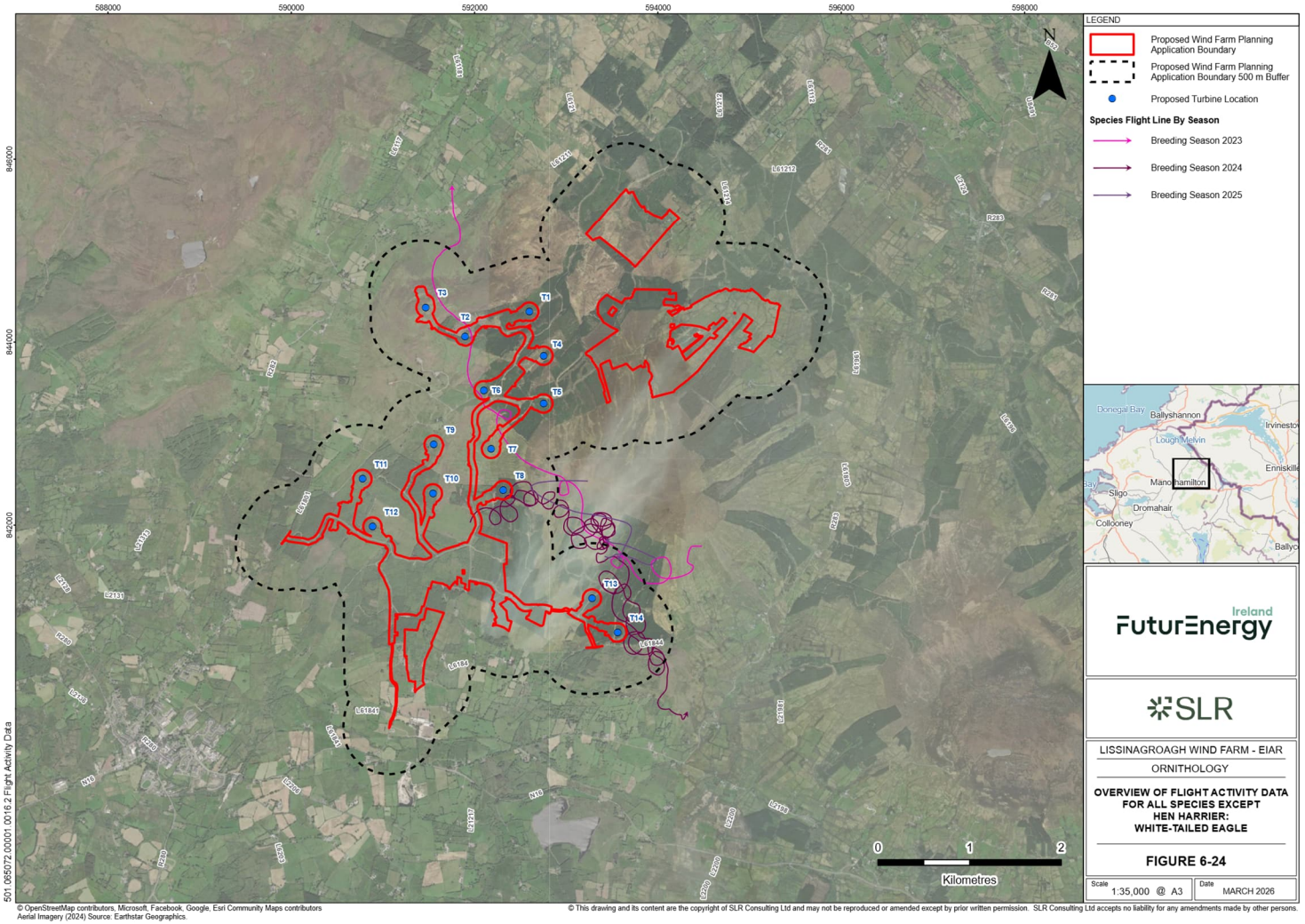
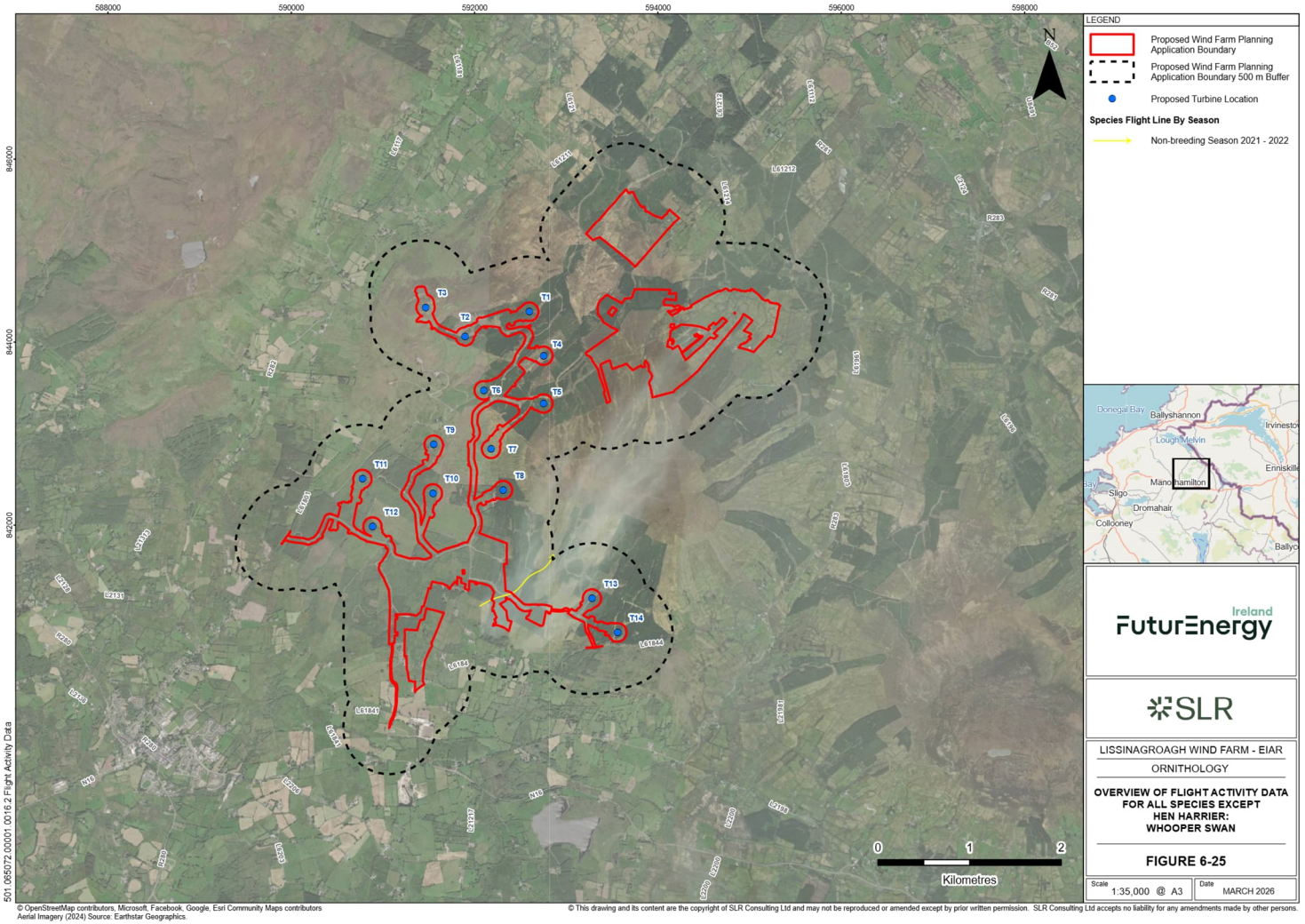


Figure 6-25: Overview of Flight Activity Data for All Species Except Hen Harrier: Whooper Swan



6.3.3.1.3 Distribution and Abundance Surveys

A holistic summary of species recorded during all non-flight activity (i.e. distribution and abundance) survey types from the 2020-21 non-breeding season onwards is given in Table 6-9. Further details are provided in Appendices 6-2 to 6-9. Note that only primary target species and any other BoCCI4 red-listed non-primary target species have been presented in the below summary table.

Table 6-9: Summary of Distribution and Abundance Survey Type Results[11]

Species	Survey Types Where Recorded	Peak Count Across All Surveys	Where Recorded	Breeding Status
Common kestrel	Breeding walkover surveys (B21 and B22) Breeding raptor surveys (B22, B23, B24 and B25) Winter walkover surveys (NB21/22)	2 (B), 1 (NB)	B: within 500 m and 1 km of proposed wind farm site, mostly in grassland areas NB: within proposed wind farm site, mostly in grassland areas	Possible breeding in 2021 Confirmed breeding in 2022 off-site, two fledged young and juveniles Possibly breeding in 2023 off-site, pair hunting Non-breeding in 2024 Confirmed breeding in 2025 off-site, two juveniles seen
Common snipe	Breeding walkover surveys (B21, B22, B23 and B24) Winter walkover surveys (NB20/21 and NB21/22) Breeding raptor surveys (B25)	2 (B), 3 (NB)	B: within proposed wind farm site and surrounding 500 m, mostly off-site NB: within proposed wind farm site	Probable breeding in 2021, 2022, 2023, 2024 and 2025 (likely two territories off-site in 2021 and 2022, five territories off-site in 2023, four territories off-site and three territories on-site in 2024, and four territories off-site in 2025)

[11] B = breeding season and NB = non-breeding season

Species	Survey Types Where Recorded	Peak Count Across All Surveys	Where Recorded	Breeding Status
Common swift *Apus apus*	Breeding walkover surveys (B21 and B22)	3 (B)	B: within proposed wind farm site and 500 m surrounding	Non-breeding in 2021 and 2022
Eurasian woodcock	Breeding woodcock surveys (B21 and B22) Winter walkover surveys (NB20/21 and NB21/22)	2 (B), 2 (NB)	B: within proposed wind farm site to south and north NB: within proposed wind farm site	Probable breeding in 2021 and 2022 (likely 2-3 territories present on-site in both years in north and south of proposed wind farm site), but most activity off-site
European golden plover	Breeding raptor surveys (B25)	113 (B)	B: within 500 m of proposed wind farm site to east	Non-breeding (likely passing through as part of migratory movements)
Golden eagle	Winter walkover surveys (NB20/21)	1 (NB)	NB: within proposed wind farm site circling over conifer plantation	Non-breeding (not observed during breeding season; immature bird)
Grey wagtail *Motacilla cinerea*	Breeding walkover surveys (B21 and B22)	2 (B)	B: within proposed wind farm site and 500 m surrounding	Possible breeding in 2021 and 2022
Hen harrier	Breeding walkover (B21 and B22) Breeding raptor surveys (B21, B22, B23, B24, B25) Winter walkover surveys (NB20/21)	9 (B), 1 (NB)	B: within site and 500 m and up to 2 km surrounding NB: within proposed wind farm site; no winter roosts present within 2 km survey area	Confirmed breeding 2021-2024. 2021: southern pair confirmed breeding on-site (three fledglings); northern pair probably breeding on-site (nest likely failed); third pair confirmed breeding c.1.5 km off-site (two fledglings). 2022: southern pair confirmed breeding c.370 m off-site (at least two fledglings). 2023: southern pair confirmed breeding c. 10 m off-site (three chicks fledged); northern pair present off-site (probable breeding but no nest was located)

Species	Survey Types Where Recorded	Peak Count Across All Surveys	Where Recorded	Breeding Status
				2024: southern pair confirmed breeding c.45 m off-site (nest likely failed); northern pair confirmed breeding c.1.8 km off-site (nest likely failed). 2025: southern and northern pair both probably breeding off-site (both nests likely failed; no exact nest locations identified); speculated a third pair could have been breeding off-site outside survey area (no nest location identified)
Lesser black-backed gull	Breeding walkover surveys (B21)	2 (B)	B: within proposed wind farm site	Non-breeding (not observed breeding)
Meadow pipit *Anthus pratensis*	Breeding walkover (B21 and B22) Winter walkover surveys (NB20/21 and NB21/22)	12 (B), 38 (NB)	B: within proposed wind farm site NB: within proposed wind farm site in NB 20/21 and within same and 500 m buffer in NB 21/22	Confirmed breeding in 2021 and 2022
Mallard	Breeding walkover surveys (B21)	1 (B)	B: within proposed wind farm site	Confirmed breeding in 2021 (in north of proposed wind farm site)
Merlin	Breeding walkover surveys (B21) Breeding raptor surveys (B21 and B23)	1 (B)	B: within proposed wind farm site	Non-breeding
Osprey	Breeding raptor surveys (B24 and B25)	1 (B)	B: within proposed wind farm site	Non-breeding

Species	Survey Types Where Recorded	Peak Count Across All Surveys	Where Recorded	Breeding Status
Peregrine	Breeding raptor surveys (B25)	1 (B)	B: within 500 m of proposed wind farm site	Non-breeding
Red grouse	Breeding walkover surveys (B21 and B22) Red grouse surveys (B22) Winter walkover (NB20/21 and NB21/22) Breeding raptor surveys (B25)	2 (B), 2 (NB)	B: within proposed wind farm site and 500 m NB: within proposed wind farm site in NB 20/21 and NB 21/22	Possible breeding in 2021 and 2025 and confirmed breeding in 2022 (likely single territory to northeast of proposed wind farm, c. 500 m off-site)
Redwing *Turdus iliacus*	Winter walkover surveys (NB20/21 and NB21/22)	75 (NB)	NB: within proposed wind farm site in NB 20/21 and within site and 500 m buffer in NB 21/22	Non-breeding (winter visitor only)
White-tailed eagle	Breeding walkover surveys (B22) Breeding raptor surveys (B22, B23, B25)	1 (B)	B: within 500 m of proposed wind farm site and c. 1 km and 2 km off-site	Non-breeding 2022: immature bird seen flying at a lough 2023: sub-adult soaring over a lough; no nesting or repeated use observed 2025: immature bird recorded on-site in Boleyboy on two occasions and once was observed roosting in August on-site.
Whooper swan	Hen harrier winter roost surveys (NB20/21)	30 (NB)	NB: c.850 m off-site and flying over northern section of proposed wind farm site (no flight heights recorded)	Non-breeding (winter visitor only)

Species	Survey Types Where Recorded	Peak Count Across All Surveys	Where Recorded	Breeding Status
	Winter walkover surveys (NB21/22)			

An overview of the breeding activity for common snipe and Eurasian woodcock as recorded by breeding walkover surveys is given in Figure 6-26 and Figure 6-27.

Figure 6-26: Overview of Breeding Activity for Common Snipe

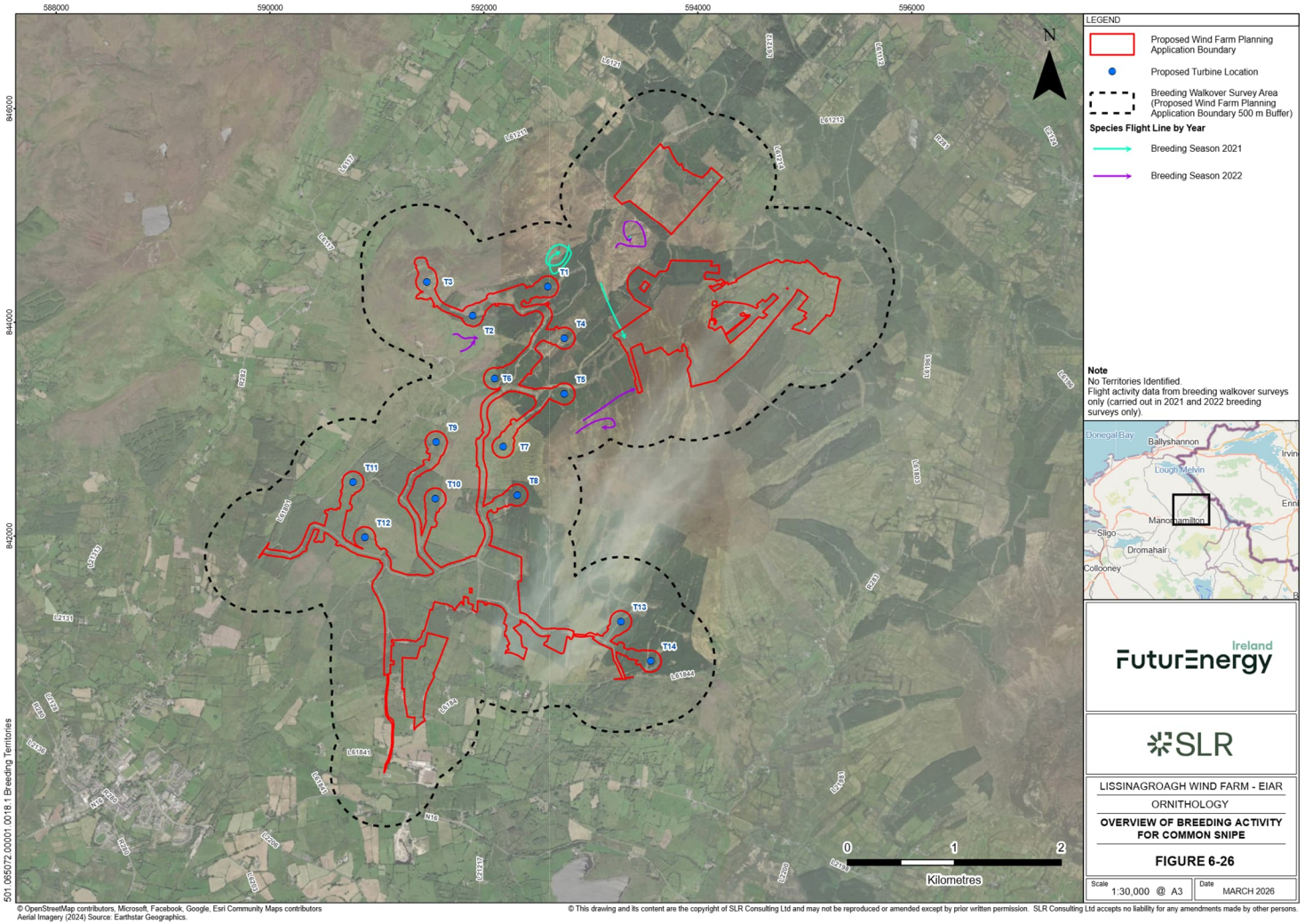
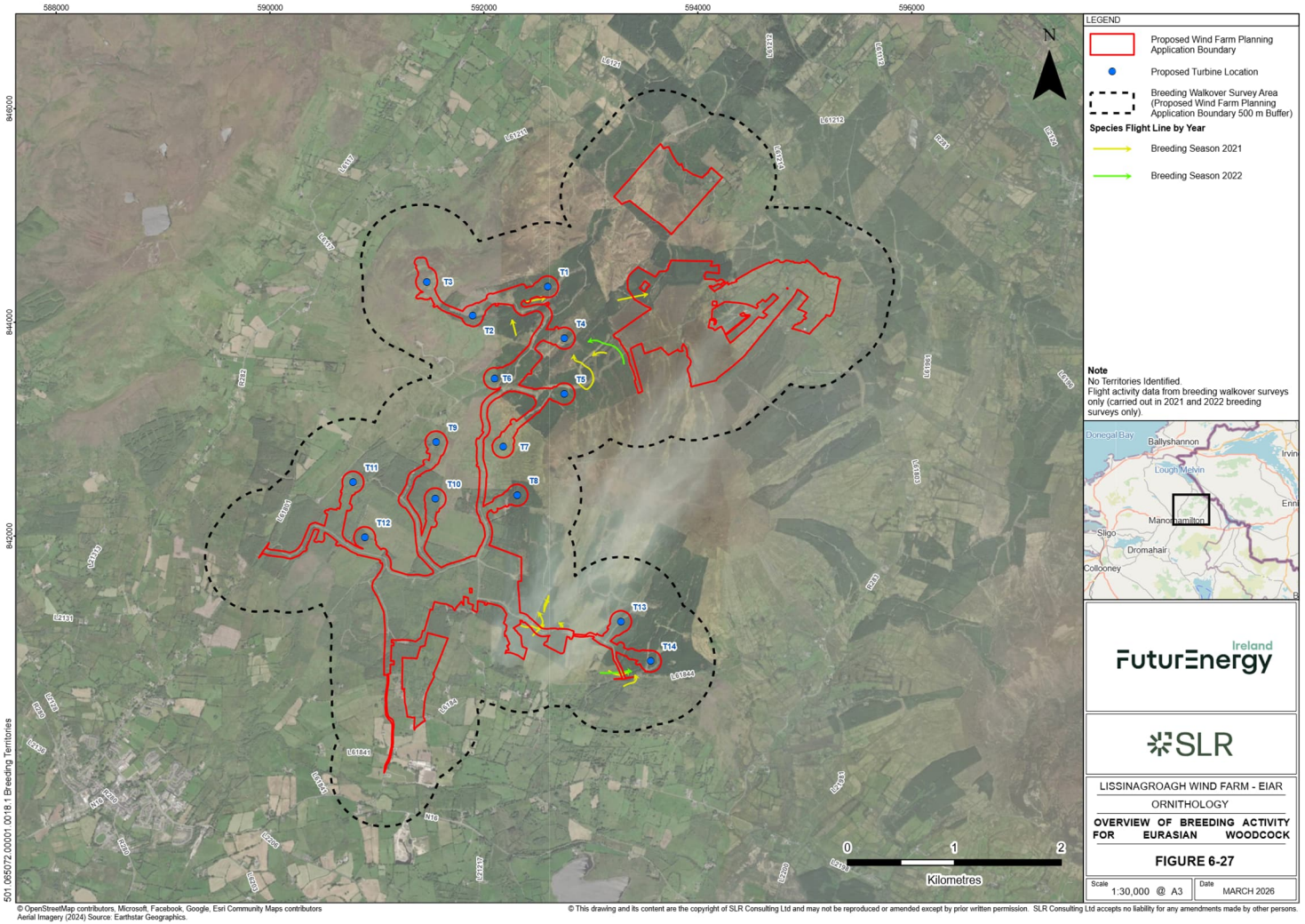


Figure 6-27: Overview of Breeding Activity for Eurasian Woodcock



6.3.3.1.3.1 Detail on Breeding Hen Harrier and Hen Harrier Foraging Surveys

Given the species' importance, a more extensive description of breeding hen harrier records has been provided below.

Surveys have consistently recorded the presence of 1-2 pairs of nesting hen harrier within the proposed wind farm site and/or the surrounding area. These comprised a 'northern' and a 'southern' pair, with the southern pair showing greater consistency of site use. In addition, a third pair was recorded approximately 1.5 – 1.8 km northeast of the proposed wind farm site boundary in 2021 and 2024. Historical, pre-2021 surveys (MKO, 2018a, 2020, 2025) recorded successful nesting attempts by the 'southern' pair in 2018, 2019 and 2020 also.

The southern pair attempted to nest annually between 2021 and 2025, using a corridor approximately 2.5 km in length and shifting nest locations within this area between 2021-2024. The southern pair has not nested within the proposed wind farm site boundary for the last four years of survey. In contrast, the northern pair attempted to nest only in 2021, 2024 and 2025, with nest sites located within a few hundred metres of each other in 2021 and 2024. The northern pair has not nested within the proposed wind farm site boundary for the last four years of survey. In 2025, no exact nesting locations were identified for either northern or southern pair.

Nesting success has varied: the southern pair successfully fledged chicks in three out of five years, with an average productivity of at least 2.67 chicks per year when breeding was successful, or 1.6 chicks per year when unsuccessful breeding attempts were taken into account. The northern pair, however, failed to rear chicks in all survey years.

A third, off-site pair outside the survey area had confirmed breeding success in 2021, fledging at least two chicks. However, they were likely disturbed in 2022, which appears to have prevented successful breeding in subsequent years. A nesting attempt in 2024 also appeared to have failed. A possible nest was suspected to be off-site and outside the survey area in 2025 to the east.

Hen harrier nesting locations are not shown due to their sensitive nature (see Section 6.3.3.1.3.1.1). Note that no exact nesting locations were identified for the 2025 breeding season.

A summary of the hen harrier foraging survey results in 2023 and 2024 is given in Table 6-10. Further details are provided in Appendices 6-7 and 6-8.

Table 6-10: Summary of Hen Harrier Foraging Survey Results

Season / Year	Total Observations	Total Foraging Observations	Total Prey Carrying / Food Passes	Foraging Areas	Notes
B23	99	63	40	Faughary, South of Saddle Hill, Tawnyfeacle (south)	Included adult males, females, pairs and fledged chicks. Confirmed fledging with three chicks.

Season / Year	Total Observations	Total Foraging Observations	Total Prey Carrying / Food Passes	Foraging Areas	Notes
B24	11	9	4	Faughary, South of Saddle Hill, Tawnyfeacle (south); northeast of Saddle Hill (north)	Included adult males and females. Both nests failed despite initial provisioning.

6.3.3.1.3.1.1 Treatment of Information on Hen Harrier

Due to the sensitivity of the Irish hen harrier population and its vulnerability to persecution, information relating to nest locations or flight activity that could inadvertently reveal nest sites must be kept confidential. In accordance with Article 42(18) of the European Communities (Birds and Natural Habitats) Regulations 2011 and Articles 7(1), 8, and 10 of the European Communities (Access to Information on the Environment) Regulations 2007–2014, detailed spatial information on hen harrier nests, or any information from which nest locations could be derived, is not included within this Chapter or its associated appendices.

Redacted sensitive information can be made available, on request, to An Coimisiún Pleanála (ACP) and relevant statutory consultees for the purpose of planning and ecological assessment.

6.3.3.2 GCR and TDR Accommodation Areas

While no dedicated bird surveys were undertaken for the GCR or TDR accommodation areas, the results of the habitat surveys and desk study (see Chapter 5 Biodiversity) suggest that the habitats present in the immediate vicinity of either element of the proposed project were too limited to likely to support important bird species.

Habitat types associated with the GCR due to be lost include hedgerow (10 m), mixed broadleaved woodland (0.01 ha) and scrub (0.01 ha), which are due to horizontal directional drilling (HDD) to avoid instream works. Habitat types associated with the TDR accommodation areas possibly affected include stone walls and other stonework (106 m), hedgerows (547 m) and treelines (52 m) alongside public roads.

The only location along either GCR or TDR accommodation areas likely to support important bird species was TDR accommodation area 13 (see Figure 2.2 in Chapter 2 Description of Proposed Project), which is in proximity (c.20 m) to Cummeen Strand SPA. This area is located at a major junction of the N15/N16/N4 roads in Sligo Town and while the accommodations area itself is unlikely to support important bird species, the nearby mudflats could support foraging and potentially roosting non-breeding SCI waders and wildfowl. Accordingly, this potential use has been acknowledged and treated on a precautionary basis in the subsequent assessment.

Therefore, any resulting impact assessment focuses on nature conservation sites only.

6.3.4 Evaluation of Ornithological Features and Identification of Features Scoped in for Detailed Assessment

An evaluation of the importance of ornithological features and a description of which were scoped in for detailed assessment is given below in Sections 6.3.4.1-6.3.4.3.

Population detail referred to in the evaluation is given in Appendix 6-10 and further details of legal and conservation status are given in Appendix 6-11.

Section 6.2.6.1.1 explains how the scale of importance was determined and the approach adopted to determine whether a species was scoped in for detailed assessment.

6.3.4.1 Proposed Wind Farm Site

Table 6-11: Evaluation of Ornithological Features and Identification of Features Scoped in for Detailed Assessment for Proposed Wind Farm Site

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
Nature Conservation Sites			
Sligo / Leitrim Uplands SPA	International	SPA designated under EU Birds Directive[12] for *inter alia* breeding peregrine; therefore, evaluated as of international importance. SPA located 9.2 km from proposed wind farm site. Of the two SCI species for the SPA, only peregrine was recorded during surveys, but only during one breeding season (B25) and at very low levels (three observations). Peregrine core foraging ranges extend to approximately 2 km from a nest (NatureScot, 2016), placing the proposed wind farm site well outside the functional range of SPA birds. No hydrological / hydrogeological pathways exist. Therefore, while a weak source-pathway-receptor linkage exists, no likely significant effects are predicted, and Sligo / Leitrim Uplands SPA is scoped out of further assessment.	No
Donegal Bay SPA	International	SPA designated under the EU Birds Directive for wintering divers, sea ducks, waders, and wetland and waterbird habitats; therefore, evaluated as being of international importance. No SCI species from this SPA were recorded during surveys. The SPA is located 16.5 km from the proposed wind farm site. Downstream hydrological connectivity exists between the wind farm site and this SPA; however, with embedded mitigation (termed 'additional mitigation' in the corresponding AA Screening and NIS) in place (see EIAR Volume II Chapters 5 and 8), and given that Lough Melvin lies between the proposed wind farm site and the SPA providing substantial dilution and attenuation capacity, no effects on watercourses or wetland habitats are predicted. Therefore, while a source-pathway-receptor linkage exists, no likely significant effects are predicted, and Donegal Bay SPA is scoped out of further assessment.	No

[12] Classified under the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011), as amended, which transpose EU Directive 2009/147/EC (Birds Directive). For brevity, referred to as 'designated under EU Birds Directive'.

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
Pettigoe Plataeau SPA / Ramsar site	International	SPA designated under the EU Birds Directive for *inter alia* breeding European golden plover and Ramsar site cited for internationally important populations of the same; therefore, evaluated as being of international importance. The SPA / Ramsar site is located 17 km northeast of the proposed wind farm site. Of its SCI / cited species, only European golden plover was recorded during surveys, but only as migratory birds, with no evidence of territory holding, foraging or roosting during the breeding season. European golden plover core foraging ranges typically extend to c.3 km from nest locations (NatureScot, 2016), placing the proposed wind farm site well outside the functional foraging envelope for SPA / Ramsar birds. No hydrological or hydrogeological pathways exist. Therefore, no strong source-pathway-receptor linkage exists, and Pettigoe Plateau SPA / Ramsar site is scoped out of further assessment.	No
Lough Derg (Donegal) SPA	International	SPA designated under the EU Birds Directive for breeding lesser black-backed gull and herring gull; therefore, evaluated as being of international importance. The SPA is located 31 km northeast of the proposed wind farm site. Of its SCI species, both lesser black-backed gull and herring gull were recorded during surveys, but with no evidence of territory holding, foraging or roosting during the breeding season. The mean terrestrial breeding foraging ranges for these two gull species can be up to c.30 km (Thaxter et al., 2026). According to the SPA conservation objectives document (NPWS, 2025a), the SPA no longer supports the SCI species in its designated, breeding population form and is not likely to do so in the future following the closure of a nearby landfill site, so no functional link between the SPA and proposed project exists. No hydrological or hydrogeological pathways exist. Therefore, no strong source-pathway-receptor linkage exists, and Lough Derg (Donegal) SPA is scoped out of further assessment.	No
Cuilcagh Mountain Ramsar site / ASSI	International	Ramsar site cited for internationally important populations of breeding European golden plover and permanent merlin populations. Also, ASSI cited for the same and breeding peregrine. Therefore, evaluated as of international importance. The Ramsar / ASSI site is located 16.7 km southeast of the proposed wind farm site. Of the species listed in the Ramsar citation, merlin was recorded on-site, but only once in the non-breeding season (NB20/21) and as a single non-breeding individual, with the rest of the observations made	No

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
		during breeding seasons. The dearth of non-breeding season observations indicates a lack of strong ecological connection during that season. European golden plover was recorded only as migratory birds, unrelated to the breeding population for which the site is cited. Peregrine was recorded during surveys, but only during one breeding season (B25) and at very low levels (three observations). Peregrine core foraging ranges extend to approximately 2 km from a nest (NatureScot, 2016), placing the proposed wind farm site well outside the functional range of Ramsar / ASSI birds. Core foraging ranges for breeding European golden plover and merlin are c.3 km and c.5 km respectively (NatureScot, 2016), placing the wind farm site well outside the functional ranges of Ramsar / ASSI populations. No hydrological / hydrogeological pathways exist. Therefore, no strong source–pathway–receptor linkage exists and Cuilcagh Mountain Ramsar site and ASSI is scoped out of further assessment.	
Owengar Wood pNHA	National	pNHA where Eurasian woodcock is named in the site synopsis; therefore, evaluated as being of national importance. The pNHA is located 16.8 km from the proposed wind farm site. Woodcock was recorded on-site during breeding and wintering surveys; however, woodcock typically forage within very small ranges (0.06–1.25 ha; Hoodless & Hirons (2007)) in the breeding season, and winter roost within c.1 km of feeding areas (Norman, 2008). The proposed wind farm site lies well outside these foraging ranges and there is no hydrological or hydrogeological pathway to the pNHA. Therefore, no source-pathway-receptor linkage exists and Owengar Wood pNHA is scoped out of further assessment.	No
Colgagh Lough pNHA	National	pNHA designated for wintering and permanent populations of waterbirds; therefore, evaluated as of national importance. The pNHA is located 16.5 km from the proposed wind farm site. Of the species listed in the site synopsis, whooper swan and mallard were recorded during surveys. Mallard was recorded only once in the breeding season, and whooper swan only as occasional fly-overs, with no evidence of on-site roosting or foraging. Wintering whooper swan typically forage within c.5 km of roost locations (NatureScot, 2016). Breeding mallard typically have core foraging ranges of 3-10 km^2 (Mack & Clark, 2006) but range more widely in the winter, with ranges up to c.70 km^2 in size (Bengtsson et al., 2014). Mallard was only observed at the proposed project site	No

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
		during the breeding season. The proposed wind farm site lies well outside these core foraging ranges for breeding mallard and wintering whooper swan. No hydrological / hydrogeological pathways exist between the proposed wind farm site and Colgagh Lough pNHA. Therefore, no strong source-pathway-receptor linkage exists and Colgagh Lough pNHA is scoped out of further assessment.	
Erne Estuary / Finner Dunes pNHA	National	pNHA designated for wintering coastal waterbirds; therefore, evaluated as of national importance. The pNHA is located 16.5 km from the proposed wind farm site. Of the species listed in the site synopsis, great cormorant was recorded on-site, but only as rare, isolated flyovers during the breeding season rather than as wintering individuals associated with the pNHA. All other pNHA-listed species were not recorded. No hydrological / hydrogeological pathways exist. Therefore, no strong source–pathway–receptor linkage exists and this pNHA is scoped out of further assessment.	No
Leitrim Uplands, South Donegal 2 and Slieve Rushen Non-Designated Hen Harrier Important Breeding Areas	National	No legal protection but part of national Irish Hen Harrier Threat Response Plan (NPWS, 2024); therefore, evaluated as being of national importance. The Leitrim Uplands non-designated important breeding area overlaps with the proposed wind farm site (only c.2% of total non-designated important breeding area), and the breeding hen harrier present at the same form part of the Leitrim Uplands breeding population. Therefore, there are pathways for effects and so this ornithological feature is scoped in for detailed assessment. South Donegal 2 and Slieve Rushen areas are 15.5 and 16.8 km from the proposed wind farm site, respectively. Hen harrier forage within 2 km of nest sites (NatureScot, 2016). The proposed wind farm site therefore lies well outside of the foraging range for breeding hen harrier from South Donegal 2 and Slieve Rushen non-designated important breeding areas. Therefore, these two areas are scoped out of further assessment.	Yes, for Leitrim Uplands No for South Donegal 2 and Slieve Rushen.
Species			
Hen harrier	National (breeding	Listed under Annex I of the EU Birds Directive and amber-listed under BoCCI4. Surveys recorded regular breeding activity associated with the Leitrim Uplands non-designated	Yes – breeding and non-

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
	season) and regional / county (non-breeding season)	Important Breeding Area, with up to two breeding pairs present in most years and occasional evidence of a third pair in the wider area. Nest locations varied between years, and all confirmed nests during the last four seasons were off-site. The number of breeding pairs recorded represents >1% of the national breeding population (Appendix 6-10). Breeding-season activity was consistently high (mean c.124 observations across B21–B25 seasons). Non-breeding activity was low (mean c.14 observations across NB20/21 and NB21/22 seasons), and the non-breeding peak count was <1% of the national population (Appendix 6-10). No winter roosts were identified on or near the site but still likely some functional usage by foraging birds. Based on this evidence, the study area for this species is evaluated as being of national importance during the breeding season and of regional/county importance during the non-breeding season. Scoped in for further assessment as scale of importance is greater than local in both seasons and there is a realistic pathway for significant effects.	breeding season
Common snipe	County (breeding season) and local (non-breeding season)	Red-listed under BoCCI4 and not an SCI for any nearby SPA nor named in any nature conservation site synopsis. Surveys recorded regular breeding-season activity, with 2–7 territories across years (mainly off-site but up to three on-site in 2024). Peak breeding-season counts were low (3 birds) and considerably <1% of ROI population (Appendix 6-10), but flight activity was moderate to high with eight, 10, 25, 74 and 52 observations in B21–B25 seasons, respectively (mean c.34 observations/season). Non-breeding activity was low (six and 10 observations in N20/21 and NB21/22 seasons, respectively), and the non-breeding peak count was <1% of the ROI population (Appendix 6-10). The non-breeding ROI population estimate is likely to be an underestimate due to the cryptic nature of the species and that snipe often occur in locations outside I-WeBS sites, making it likely the non-breeding peak count was considerably <1% of the ROI population. No winter roosts or concentrations were identified.	Yes – breeding season only

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
		Based on this evidence, the study area for this species is evaluated as being of county importance during the breeding season and local importance during the non-breeding season. Scoped in for further assessment for the breeding season only, as importance exceeds local and a realistic pathway for significant effects exists.	
European golden plover	County (non-breeding season and/or migratory season)	Listed under Annex I of the EU Birds Directive and red-listed under BoCCI4. An SCI for Pettigoe Plateau SPA and named in the Cuilcagh Mountain Ramsar site / ASSI citation; however, all golden plover recorded on the proposed wind farm site were migratory birds only and therefore not functionally connected to the designated populations. The peak count was 100 birds during NB21/22, which is <1% of the ROI non-breeding population (Appendix 6-10). Observations included one and 12 observations made in the NB20/21 and NB21/22 seasons across all survey types combined, respectively. There were also four, three, and two observations in the B21, B22 and B24 seasons, respectively. On average, there were c.7 and c.2 observations in the non-breeding and breeding seasons, respectively, although most observations occurred during spring and autumn migratory periods. No confirmed breeding (presence in the breeding season was limited to the migratory periods only) or non-breeding site usage. Based on this evidence, the study area for this species is evaluated as being of county importance during the migration/non-breeding season. Scoped in for further assessment as importance exceeds local level and a realistic collision pathway exists.	Yes – non-breeding and/or migratory seasons only
Lesser black-backed gull	County (breeding season only)	Amber-listed under BoCCI4. SCI for Lough Derg (Donegal) SPA. According to the SPA conservation objectives document (NPWS, 2025a), the SPA no longer supports the SCI species in its designated, breeding population form, so no functional link between the SPA and proposed project exists, and no functional connectivity was identified with any other nature conservation site.	Yes – breeding season

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
		Peak counts represent <1% of the ROI population (Appendix 6-10). Flight activity levels were reasonably high throughout the study period (>10,000 seconds) but were based on low numbers of observations, being recorded 2, 8, 19 27 and 15 times in the B21, B22, B23, B24 and B25 seasons, respectively, , with a mean of c.14 observations per breeding season. All observations were made in the breeding season; however, no breeding was confirmed on-site, and all records reflected commuting birds rather than foraging or roosting individuals. Based on this evidence, the study area for this species is evaluated as being of county importance during the breeding season. Scoped in for further assessment as importance exceeds local level and a realistic collision pathway for significant effects exists.	
White-tailed eagle	County (breeding and non-breeding seasons)	Annex I species and red-listed under BoCCI4. Not an SCI for any nearby SPA, and no functional connectivity was identified with any designated site. Peak count of one bird represents >1% of the ROI population (Appendix 6-10); however, this reflects the very small national population, not any ecological reliance on the site. Only four observations of white-tailed eagle were made across the study period (all between 2023–2025), all involving immature or sub-adult individuals. Activity was very low overall. One immature bird was recorded roosting once on-site in August (B25), but no breeding, repeated roosting, territoriality, or regular foraging was identified. This species was recorded only during breeding season surveys, likely because no non-breeding surveys have been conducted since 2021/22, and it appears to have only recently been observed in the area from 2022 onward, having only been reintroduced to Ireland in 2007 (O'Rourke, 2014). The population is known to be expanding (Næss, 2025) and so pathways for significant effects may be plausible in the future. Based on this evidence, the study area for this species is evaluated as being of county importance during both the breeding and non-breeding seasons on a precautionary basis, due to conservation status and potential collision sensitivity.	Yes – breeding and non-breeding seasons

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
		Scoped in for further assessment as importance exceeds local level and a precautionary collision pathway for significant effects exists, especially due to the expanding population.	
Black-headed gull	Local (breeding season only)	Amber-listed under BoCCI4. Not an SCI for any nearby SPAs, and no functional connectivity exists with designated sites. Peak count of 134 birds during the breeding season <1% of the ROI population (Appendix 6-10). Flight activity at relatively low levels throughout study period. There were one, 11, two and two observations in the B22, B23, B24 and B25 seasons across all survey types combined, respectively i.e. a mean of c.3 observations per breeding season. No breeding was confirmed, and the species was present only as commuting birds. Based on this evidence, the study area for this species is evaluated as being of local importance for this species for the season in which it was observed (the breeding season). Scoped out of further assessment as scale of importance is local and no realistic pathways for significant effects are present.	No
Common kestrel	Local (breeding and non-breeding seasons)	Red-listed under BoCCI4. Not an SCI for any nearby SPAs, and no functional connectivity exists with designated sites. Peak count of 2 birds in the breeding season and 1 bird in the non-breeding season represents <1% of the ROI population (Appendix 6-10). Flight activity was recorded at reasonably high levels throughout the study period, with two and seven observations in the NB20/21 and NB21/22 seasons, respectively; and three, 11, 8, 28 and 16 times in the B21, B22, B23, B24 and B25 seasons, respectively, giving a mean of 4.5 and c.13 observations per non-breeding and breeding seasons, respectively. No breeding was confirmed on-site, though breeding occurred off-site in some years, and all observations reflect foraging birds using habitat margins. Based on this evidence, the study area for this species is evaluated as being of local importance for the breeding and non-breeding seasons.	Yes – both breeding and non-breeding seasons

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
		Scoped in as while scale of importance is local, kestrel is known to be susceptible to collision with wind turbines, it is red-listed and there is a plausible pathway for significant collision-related effects present.	
Common swift	Local (breeding season only)	Red-listed under BoCCI4. Not an SCI for any nearby SPAs, and no functional connectivity exists with designated sites. Peak count of 3 birds represents <1% of the ROI population. Activity levels were low, with 2 observations in the B21 season and 5 in the B22 season across all survey types combined. No breeding was confirmed, and all records reflect non-breeding aerial foraging flights typical of the species, and no regular, functional usage of habitats at the site. Based on this evidence, the study area for this species is evaluated as being of local importance for the only season in which it was observed (breeding season). Scoped out of further assessment as importance is local and no realistic pathway for significant effects exists.	No
Eurasian woodcock	Local (breeding and non-breeding seasons)	Red-listed under BoCCI4. Not an SCI for any nearby SPAs, and although named in the Owengar Wood pNHA synopsis, no functional connectivity exists with other nature conservation sites. Flight activity levels very low throughout study period. Peak count of 2 birds in both the breeding and non-breeding seasons represents considerably <1% of the ROI population (Appendix 6-10) and unlikely to be of county importance given that Leitrim is the most heavily forested county in Ireland, with the most potential woodcock habitat and largest numbers of woodcock likely present. Activity levels were low, with 11 observations in B21, 6 in B22, 1 in B23, and 12 and 24 observations recorded in NB20/21 and NB21/22, respectively i.e. a mean of 18 and c.4 times in the non-breeding and breeding seasons, respectively. Probable breeding occurred on-site, with 2–3 territories likely present.	Yes – both breeding and non-breeding seasons

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
		Based on this evidence, the study area for this species is evaluated as being of local importance for the breeding and non-breeding season. Scoped in for further assessment as likely breeding on-site presents a realistic pathway for significant effects.	
Great cormorant	Local (breeding season only)	Amber-listed under BoCCI4. Not an SCI for any nearby SPA, and although referenced in the Erne Estuary/Finner Dunes pNHA synopsis, no functional connectivity exists with other nature conservation sites. Peak count of 3 birds in the breeding season represents considerably <1% of the ROI population (Appendix 6-10). Activity levels were very low, with only three observations across all survey types combined, and no indications of regular foraging or roosting on-site. Based on this evidence, the study area for this species is evaluated as being of local importance for the only season in which it was observed (breeding season). Scoped out of further assessment as importance is local and no realistic pathway for significant effects exists.	No
Golden eagle	Local (non-breeding population season)	Annex I species and red-listed under BoCCI4. Not an SCI for any nearby SPA, and no functional connectivity exists with other nature conservation sites. Peak count of 1 bird in the non-breeding season represents >1% of the ROI population (Appendix 6-10), but this reflects the small national population rather than any ecological value of the site. Only one observation of an immature bird was made across the entire study period in the NB20/21 season, circling over conifer plantation before flying away. As only a single, immature bird was recorded once in six seasons of surveys, there is no evidence of regular, functional site usage by breeding or roosting birds in any survey season. This species was only reintroduced to Ireland in 2001 but the population appears to have remained small and has not expanded (McAuliffe et al., 2024). It is therefore unlikely that the reintroduced population will expand to the extent that the wind farm site habitats become functionally important for this species in the foreseeable future.	No

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
		Based on this evidence, the study area for this species is evaluated as being of local importance for the only season in which it was observed (non-breeding season). Scoped out of further assessment as the scale of importance is local as no realistic pathway for significant effects exists.	
Grey wagtail	Local (breeding season only)	Red-listed under BoCCI4. Not an SCI for any nearby SPAs, and no functional connectivity exists with other nature conservation sites. Peak count of 2 birds in the breeding season represents considerably <1% of the ROI population (Appendix 6-10). Activity levels were very low, with 4 observations in B21 and 2 in B22 across all survey types combined. Possible breeding on proposed wind farm site and within 500 m of the same. Based on this evidence, the study area for this species is evaluated as being of local importance for the only season in which it was observed (breeding season). Scoped out of further assessment as the scale of importance is local, best-practice guidance says passerines are not significantly impacted by wind farms (NatureScot, 2025d) and no realistic pathways for significant effects exist.	No
Herring gull	Local (breeding season only)	Amber-listed under BoCCI4. SCI for Lough Derg (Donegal) SPA. According to the SPA conservation objectives document (NPWS, 2025a), the SPA no longer supports the SCI species in its designated, breeding population form and there is no likelihood of this happening in the future due to the closure of a landfill in Donegal town, so no functional link between the SPA and proposed project exists, and no functional connectivity was identified with any other nature conservation site. Peak count of 18 birds in the breeding season represents <1% of the ROI population (Appendix 6-10). The species was recorded six times (B23 and B25 seasons only) across all survey types combined, reflecting occasional commuting flights only. No confirmed breeding or functional site usage.	No

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
		Based on this evidence, the study area for this species is evaluated as being of local importance for the only season in which it was observed (breeding season). Scoped out of further assessment as the scale of importance is local and no realistic pathways for significant effects exist.	
Little egret	Local (breeding season only)	Annex I species and green-listed under BoCCI4. Not an SCI for any nearby SPA, and no functional connectivity exists with other nature conservation sites. Peak count of 3 birds in the breeding season represents <1% of the ROI population (Appendix 6-10). Recorded twice in B23 season across all survey types combined, reflecting infrequent commuting flights with no ecological function on-site. No confirmed breeding. Based on this evidence, the study area for this species is evaluated as being of local importance for the only season in which it was observed (breeding season). Scoped out of further assessment as the scale of importance is local and no realistic pathway for significant effects exists.	No
Mallard	Local (breeding season only)	Amber-listed under BoCCI4. Not an SCI for any nearby SPA, and although referenced in Colgagh Lough pNHA synopsis, no functional connectivity exists with other nature conservation sites. Peak count of 13 birds in the breeding season represents considerably <1% of the ROI population (Appendix 6-10). Recorded once in B21 and B23 seasons, with one confirmed breeding attempt on-site (no location given) in the B21 season. Based on this evidence, the study area for this species is evaluated as being of local importance for the only season in which it was observed (breeding season). Scoped out of further assessment as the scale of importance is local and no realistic pathway for significant effects exists.	No

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
Meadow pipit	Local (breeding and non-breeding seasons)	Red-listed under BoCCI4. Not an SCI for any nearby SPA, and no functional connectivity exists with other nature conservation sites. Peak counts of 12 birds in the breeding season and 38 birds in the non-breeding season represent considerably <1% of the ROI population (Appendix 6-10). Activity levels were relatively high with 10 observations in the NB20/21 season, 82 in the B21 season, and 21 in the B22 season across all survey types combined. Confirmed breeding occurred on-site. Based on this evidence, the study area for this species is evaluated as being of local importance for the breeding and non-breeding seasons. Scoped out of further assessment as the scale of importance is local and best-practice guidance says passerines are not significantly impacted by wind farms (NatureScot, 2025d).	No
Merlin	Local (breeding and non-breeding seasons)	Annex I species and amber-listed under BoCCI4. Not an SCI for any nearby SPA, and although named for Cuilcagh Mountain Ramsar site / ASSI, no functional connectivity exists. Peak count of 1 bird in both breeding and non-breeding seasons represents <1% of the ROI population (Appendix 6-10). Flight activity levels very low throughout study period. Recorded once during NB20/21 season across all survey types combined; and twice in the B21 season, once in the B22 season, three times in the B23 season, five times in the B24 season and three times in the B25 season, respectively i.e. an average of four observations per breeding season. Only sporadic presence and no breeding or roosting detected, suggesting no regular, functional site usage. Based on this evidence, the study area for this species is evaluated as being of local importance for the breeding and non-breeding seasons. Scoped out of further assessment as the scale of importance is local and no realistic pathways for significant effects.	No

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
Peregrine	Local (breeding season only)	Annex I species and green-listed under BoCCI4. SCI for the Sligo/Leitrim Uplands SPA and Cuilcagh Mountain ASSI; however, no functional connectivity exists. Peak count of 1 bird in the breeding season represents considerably <1% of the ROI population (Appendix 6-10). Flight activity levels very low throughout the study period. Recorded once in the NB20/21 season and three times in the B25 season across all survey types combined. No breeding was confirmed and no regular, functional usage of the site. Based on this evidence, the study area for this species is evaluated as being of local importance for the only season in which it was observed (breeding season). Scoped out of further assessment as scale of importance is local and no realistic pathway for significant effects exists.	No
Osprey	Local (breeding season only)	Annex I species. No red-list assessment under BoCCI4 given due to recent reintroduction. Not an SCI for any nearby SPA, and no functional connectivity exists with any other nature conservation site. Peak count of one bird in the breeding season (Appendix 6-10). No published national population estimates available due to recent reintroduction. Recorded once in the B24 season and once in the B25 season, both as non-breeding migrants. There was no evidence of regular site usage (breeding, foraging or roosting). This species was only recently reintroduced to Ireland in 2023 (Department of Housing, 2023) and the total number of wild birds is likely to be very low. Future population expansion is unclear, but significant pathways for significant effects are unlikely to appear in the future due to slow rate of population spread following re-introductions, as documented elsewhere in England (Mackrill, 2024). Based on this evidence, the study area for this species is evaluated as being of local importance for the only season in which it was observed (breeding season). Scoped out of further assessment as scale of importance is local, no realistic pathway for significant effects exists, and while the reintroduced population could expand in the	No

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
		future, the likely rate is predicted to be so slow that there is no plausible pathway for significant effects in the future either.	
Red grouse	Local (breeding and non-breeding seasons)	Red-listed under BoCCI4. Not an SCI for any nearby SPA, and no functional connectivity exists with other nature conservation sites. Peak count of 2 birds in both the breeding and non-breeding seasons represents <1% of the ROI population (Appendix 6-10). Flight activity levels were very low throughout the study period. Recorded 7 and 8 observations in the NB20/21 and NB21/22 seasons, respectively, and 9, 3, 7, 6 and 2 observations in the B21–B25 seasons. One breeding territory occurred off-site on Dough Mountain i.e. no evidence of regular, functional usage of the site. Based on this evidence, the study area for this species is evaluated as being of local importance for the breeding and non-breeding seasons. Scoped out of further assessment as the scale of importance is local and no realistic pathway for significant effects exists.	No
Redwing	Local (non-breeding season only)	Red-listed under BoCCI4. Not an SCI and no functional connectivity exists with other nature conservation sites. Peak count of 75 birds in the non-breeding season (the species is a winter migrant) represents <1% of the ROI population (Appendix 6-10). There are no ROI population estimates available; however, likely to be large given widespread presence in Bird Atlases (Gillings et al., 2019), and so peak count is likely to be considerably <1% of ROI population. Recorded 7 times in the NB20/21 seasons and regularly in the NB21/22 season across all survey types combined. Based on this evidence, the study area for this species is evaluated as being of local importance for the only season in which it was observed (non-breeding season).	No

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
		Scoped out of further assessment as the scale of importance is local and best-practice guidance says passerines are not significantly affected by wind farms (NatureScot, 2025d).	
Whooper swan	Local (non-breeding season only)	Annex I species and Amber-listed under BoCCI4. Not an SCI for any nearby SPA, and no functional connectivity was identified with any designated site. Although named in the Colgagh Lough pNHA synopsis, no pathway for effects exists due to lack of hydrological or functional linkage. Peak count of 30 birds represents <1% of the ROI population, but >1% of the regional non-breeding population (Appendix 6-10). Only three records were made during the entire survey period; all but one observation off-site. Flight activity levels were very low throughout the study period (none recorded flying over the site during flight activity surveys; only single flight line of 30 birds recorded flying over site as incidental observation during winter walkover surveys). No roosting or foraging occurred on-site. Based on this evidence, the study area for this species is evaluated as being of local importance for the non-breeding season. Scoped in for further assessment due solely to consultee request (see Section 6.2.2.3), rather than ecological significance.	Yes – non-breeding season only

6.3.4.2 GCR

The scope is limited to the consideration of nature conservation sites.

Table 6-12: Evaluation of Ornithological Features and Identification of Features Scoped in for Detailed Assessment for GCR

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
Nature Conservation Sites			
Ballysadare SPA	International	SPA designated under EU Birds Directive; therefore, evaluated as of international importance. There is downstream connectivity to Ballysadare Bay SPA which is designated for *inter alia* wetland and waterbirds SCI habitats; however, with the embedded mitigation included (see Chapters 5 and 8 of Volume II of the EIAR; termed 'additional mitigation' in the corresponding AA Screening and NIS), the minor nature of the works and the hydrological distance between the works and the SPA, no impacts on watercourses and therefore wetland and waterbird SCI habitats are predicted. The closest works are 16.2 km from SPA; therefore, there is no plausible pathway for effects on SCI birds due to disturbance, and so the SPA is scoped out of detailed assessment.	No

6.3.4.3 TDR Accommodation Areas

The scope is limited to the consideration of nature conservation sites.

Table 6-13: Evaluation of Ornithological Features and Identification of Features Scoped in for Detailed Assessment for TDR Accommodation Areas

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
Nature Conservation Sites			
Cummeen Strand SPA	International	SPA designated under EU Birds Directive; therefore, evaluated as of international importance.	Yes

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
		There is downstream connectivity to Cummeen Strand SPA which is designated for *inter alia* wetland and waterbirds SCI habitats; however, with the embedded mitigation included (see Chapters 5 and 8 of Volume II of the EIAR; termed 'additional mitigation' in the corresponding AA Screening and NIS), no impacts on watercourses and therefore wetland and waterbird SCI habitats are predicted. The closest accommodations are 20 m from SPA with little intervening features providing screening. While the immediate habitats at the closest accommodations area are urban (roads and pavements; located at busy junction of N4/N15/N16 within Sligo Town) and modified, such as amenity grassland, mudflats are within 20 m, which could be used by SCI light-bellied brent goose, Eurasian oystercatcher and common redshank. Eurasian oystercatcher and common redshank are both present in desk study records within the overlapping 1 km grid square G6936 on the NBDC website; therefore, even though the proposed accommodations are very minor, there is a plausible pathway for effects on SCI birds due to disturbance, and so the SPA is scoped in for detailed assessment.	
Sligo / Leitrim Uplands SPA	International	SPA designated under EU Birds Directive; therefore, evaluated as of international importance. No hydrological or hydrogeological connectivity is present between the SPA and TDR accommodation areas. The closest accommodations are 216 m from the SPA with plenty of hedgerows, treelines and other intervening features providing screening to the SPA. The accommodations comprise of trimming a hedge, and the surrounding habitats comprise grassy verges, grazed, wet grassland, hedgerows and treelines adjacent to the busy N16 road, making it very unlikely the SCI species peregrine or chough from the SPA use the habitats present or nearby. There are also no desk study records for the same contained within the overlapping 1 km grid square G7442 on the NBDC website. Embedded mitigation (termed 'additional mitigation' in the corresponding AA Screening and NIS) will also be used to avoid disturbing breeding birds (see Section 6.4.1). Therefore, there is no plausible pathway for effects on SCI birds due to disturbance.	No

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
		As there are no pathways for significant effects, Sligo / Leitrim Uplands SPA is scoped out of further assessment.	
Drumcliff Bay SPA	International	SPA designated under EU Birds Directive; therefore, evaluated as of international importance. No hydrological or hydrogeological connectivity is present between the SPA and TDR accommodation areas. The closest accommodations are 250 m from the SPA with plenty of hedgerows, treelines and other intervening features providing screening. Habitats at the closest accommodations area include houses, pavements, stone walls and fields used for silage, which are not suitable for SCI sanderling or bar-tailed godwit, and there are no desk study records for the same contained within the overlapping 1 km grid square G6742 on the NBDC website. The accommodations comprise clearing any obstructions to allow oversail of the blades. The accommodations area is also located along the busy N15 road. Embedded mitigation will also be used to avoid disturbing wintering birds (see Section 6.4.1; termed 'additional mitigation' in the corresponding AA Screening and NIS). Therefore, there is no plausible pathway for effects on SCI birds due to disturbance. As there are no pathways for significant effects, Drumcliff Bay SPA is scoped out of further assessment.	No
Donegal Bay SPA	International	SPA designated under EU Birds Directive; therefore, evaluated as of international importance. There is downstream connectivity to Donegal Bay SPA which is designated for *inter alia* wetland and waterbirds SCI habitats; however, with the embedded mitigation included (see Chapters 5 and 8 of Volume II of the EIAR; termed 'additional mitigation' in the corresponding AA Screening and NIS), no impacts on watercourses and therefore wetland and waterbird SCI habitats are predicted. The closest accommodations are 300 m from the SPA with plenty of houses, hedgerows, treelines and other intervening features providing screening. Habitats at the closest accommodations area include amenity grassland (centre of roundabout), roads, rough	No

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and / or Importance and Justification for Evaluation	Scoped In for Detailed Assessment
		grassland and scrub, which are not suitable for SCI species great northern diver, light-bellied brent goose, common scoter or sanderling, and there are no desk study records for the same within the overlapping 1 km grid square G7958 on the NBDC website. The accommodations area is also located along the busy N15 road. The accommodations comprise removal of road signs and clearing of roundabout of obstructions. Embedded mitigation (termed 'additional mitigation' in the corresponding AA Screening and NIS) will also be used to avoid disturbing wintering birds (see Section 6.4.1). Therefore, there is no plausible pathway for effects on SCI birds due to disturbance. As there are no pathways for significant effects, Donegal Bay SPA is scoped out of further assessment.	

6.4 Assessment of Effects and Mitigation Measures

This assessment concentrates on the effects of construction, operation and decommissioning of the proposed project upon IOFs. The assessment of effects is based on the information outlined in Chapter 2 – Description of the Proposed Project. The following likely significant effects have been assessed:

- Inadvertent destruction of nests during construction and decommissioning;
- Habitat loss or damage (permanent and temporary) due to construction and decommissioning of wind farm infrastructure, including the GCR and TDR accommodation areas;
- Disturbance to birds during construction and decommissioning due to vehicular traffic, operating plant and the presence of construction workers;
- Pollution of watercourses leading to indirect effects on wetland habitats used by bird species during construction, decommissioning and operation;
- Disturbance to birds due to the operation of the wind turbines (including barrier effects), vehicular traffic and the presence of people during operation; and
- Mortality of birds caused by collisions with turbine blades and other infrastructure.

Effects have been assessed in detail for the following IOFs shown in Table 6-14 (see Table 6-11, Table 6-12 and Table 6-13 for justification).

Table 6-14: IOFs Included for Detailed Assessment

Season	IOF		
	Wind Farm Site	**GCR**	**TDR Accommodation areas**
Breeding and non-breeding	Hen harrier, white-tailed eagle, Eurasian woodcock, common kestrel	None	None
Breeding only	Leitrim Uplands Non-Designated Important Breeding Areas for hen harrier, common snipe, lesser black-backed gull	None	None
Non-breeding only	European golden plover, whooper swan	None	Cummeen Strand SPA

6.4.1 Embedded Mitigation and Good Practice Measures

Where possible, the design of the proposed project has sought to avoid significant effects on IOFs. This is referred to as Mitigation by Design and is 'embedded' as part of the proposed project. In addition, good practice measures, as outlined below, will be employed to reduce the possibility of damage and destruction (and disturbance in the case of sensitive species such as breeding raptors), to occupied bird nests during the construction and decommissioning phases. These measures are also 'embedded' as part of the proposed project and likely significant

effects are therefore assessed on the basis that these measures will be implemented. These are sometimes termed 'primary' mitigation measures (Anderson et al., 2024).

Full details of construction mitigation measures are provided in the Construction Environmental Management Plan ("CEMP"), included as Appendix 2-4. A similar document will be produced for the decommissioning phase, with similar measures adopted as appropriate in line with best practice at the time of decommissioning.

6.4.1.1 Mitigation by Design

The layout of the proposed wind farm has been specifically designed as part of the overall mitigation strategy for breeding hen harrier. It was not appropriate to design the turbine layout around historical nesting sites as the nest sites varied year-on-year likely reflecting ongoing forestry cycles. However, turbines have been sited to maintain a minimum separation distance of 750 m from the two NEAs (see Section 6.2.2.3), ensuring that operational turbines will be located well outside zones likely to support hen harrier breeding activity. This buffer is considered sufficient to minimise disturbance to nesting birds, reduce the risk of displacement, and prevent behavioural disruption during the breeding season. For a full evaluation of the use of a 750 m buffer distance and why it is sufficient to avoid disturbance effects on breeding hen harrier; see Appendix 6-13. A summary is also given in Section 6.4.1.2.1 below.

The GCR was also designed to avoid any nature conservation sites designated for birds.

This approach is described further in Section 6.4.8 of the current Chapter and the approach to proposed project design is outlined in Chapter 2 – Description of Proposed Project.

6.4.1.2 Timing of Works, Confirmatory Pre-Commencement Surveys and Implementation of Disturbance-Free Buffer Zones

6.4.1.2.1 Wind Farm Site

Avoidance of damage to, or destruction of nests, or disturbance to sensitive species whilst nesting will be achieved through careful timing of construction and decommissioning activities; restricting activities in sensitive areas as far as practicable in the early part of the breeding season until the location and breeding status of nesting birds has been established. Clearance of uncultivated vegetation, i.e. trees and hedgerows, will be undertaken outside the main breeding bird season, from March to August inclusive where possible. If other site clearance and construction / decommissioning activities are required to take place during the main breeding bird season, confirmatory pre-commencement survey work will be undertaken so that nest destruction and disturbance to sensitive species (e.g., breeding raptors) are avoided. Where applicable, construction or decommissioning will not take place within specified disturbance-free buffer zones for certain sensitive species whilst those species are actively nesting.

Disturbance-free buffer zones around nest sites of sensitive species will be applied as set out below and will be monitored closely.

Based on survey data and the relevant literature (Goodship et al., 2022), the following disturbance-free buffer zones will be implemented to help prevent nest failure due to disturbance during construction or decommissioning. It should be noted that these distances represent a guide only and these may vary according to topography and other factors at each nest site. The appropriate buffers will be identified in accordance with the approach described in the following paragraphs.

Hen harrier was the only confirmed breeding species identified as an IOF but buffer zones for breeding common snipe and Eurasian woodcock have also been included in the possible event these two species are recorded in confirmatory pre-commencement surveys:

- Hen harrier: 1,000 m and 750 m (see below);
- Common snipe: 500 m; and
- Eurasian woodcock: 200 m.

Note that Goodship et al. (2022) recommend a 750 m disturbance-free buffer for breeding hen harrier as a default but state that where activities have a high potential for visual and auditory disturbance (e.g. forestry operations), a larger buffer zone of up to 1,000 m may be necessary. As felling of forestry will be required to accommodate turbines during construction, this larger buffer for hen harrier will be implemented for the proposed project during felling operations only, with the 750 m buffer to be used for all other activities.

Goodship et al. (2022) do not provide a disturbance-free buffer distance for breeding common snipe; however, a 47.5% decline in abundance of snipe within 500 m of wind turbines has been reported (Pearce-Higgins et al., 2009), although Devereux et al. (2008) measured snipe territories being only located further from turbines than you would expect by chance within 250 m. A precautionary approach has been adopted in this assessment, assuming that 500 m represents a reasonable disturbance-free buffer distance and therefore this buffer will be implemented for all construction activities.

There is no buffer given for Eurasian woodcock; however, research highlights that Eurasian woodcock tends to nest within 100 m of woodland edges (Brewin et al., 2022) and flight initiation distances often fall between tens to a few hundred metres for ground-nesting or cryptic species (Goodship et al., 2022). Therefore, a disturbance-free buffer of 200 m is considered robust as it combines research on nesting proximity with disturbance-mitigation principles and therefore this buffer will be implemented for all construction activities.

A suitably qualified Project Ecologist will be employed for the duration of the construction and decommissioning period. The role of the Project Ecologist will include the tasks outlined in Chapter 5 of Volume II of the EIAR but with specific roles regarding the bird interest of the proposed wind farm site:

- Prior to the start of construction, decommissioning and/or the breeding bird season, contractors will be made aware of the ornithological sensitivities within the proposed wind farm site (particularly to the potential presence of sensitive breeding species); and
- Undertake confirmatory pre-construction surveys for nesting birds throughout the construction and decommissioning period that is within the nesting season. Where active nests are found, appropriate exclusion zones as set out in this section, will be established and monitored until the nesting attempt has reached a natural conclusion (i.e. fledging). Full details are provided in the CEMP in Appendix 2-4.

6.4.1.2.2 GCR and TDR Accommodation Areas

The same measures will also apply to the GCR and TDR accommodation areas regarding the timing of works, confirmatory pre-construction checks and the use of disturbance-free buffers

around any identified nests. All vegetation clearance or ground disturbing activities will follow the same avoidance first approach implemented across the proposed wind farm site.

6.4.2 Likely Evolution of the Baseline

The proposed wind farm site comprises commercial conifer forestry plantation and agricultural lands that are currently heavily managed through a combination of agroforestry and agricultural practices. If the proposed project does not proceed, the proposed wind farm site is likely to continue to be used for forestry and agricultural purposes. This means it is likely that ongoing forestry cycles will continue to make habitats suitable and unsuitable for IOF species such as breeding hen harrier as they are felled and replanted. Forestry cycles may create uncertainty regarding the availability of suitable breeding habitats, which is likely one of many contributing factors to the recent decline of over 25% in the regional hen harrier population across the Leitrim, Slieve Rushen, Cavan complex (Ruddock et al., 2024).

While some of the adjacent landowners are signed up to hen harrier related prescriptions under agri-environment schemes, there is currently no concerted conservation action in place at the proposed wind farm site for breeding hen harrier, beyond the general measures that Coillte recommends for hen harrier management in its lands (Coillte, 2021, 2024). While the Hen Harrier Threat Response Plan (NPWS, 2024) does mention overarching actions to minimise disturbance caused by forestry-related activities to hen harrier in non-designated important breeding areas (topics F15 - F17 in the plan), there are currently no plans to implement specific conservation actions in the future at the proposed wind farm Site.

In the absence of the proposed project, it is therefore possible that the hen harrier population at the proposed wind farm site will decline over the next few years based on current trends in the wider area and the lack of concerted conservation action, although the extent of any declines cannot be predicted accurately at this time, due to the number of factors involved.

Regarding other IOF species, with the current patterns of agroforestry cycles and agricultural practices persisting, most species would be expected to continue along their existing population trajectories in the absence of the proposed project i.e. species which are declining (e.g. European golden plover; see Table 6-19) might also be expected to decline at the proposed project site while those that are increasing (e.g. white-tailed eagle; see Table 6-22) might be expected to increase. However, it is acknowledged that it is impossible to predict future population trends with any certainty.

The GCR will continue to be used as a road, and the TDR accommodation areas will remain as bounding habitats along roads in the absence of the proposed project.

6.4.3 Characterisation of Potential Impacts

The following sections describe the types of impacts that onshore wind farms may give rise to and how these may interact with IOFs for the proposed project, which has been used to inform the specific assessment of effects for the proposed project. These descriptions apply across the construction, operational, and decommissioning phases. The magnitude and significance of these impacts for each IOF are evaluated in Sections 6.4.4 and 6.4.5.

6.4.3.1 Construction and Decommissioning

Construction and decommissioning activities involve ground works, vegetation clearance, forestry felling, increased human presence, machinery operation, and vehicle movements.

These can lead to several types of impact. Potential construction phase impacts are described below.

Decommissioning effects are predicted to be like those described for construction due to similar activities taking place, although they will be reduced in magnitude and there will not be any permanent habitat loss. Therefore, they have not been repeated in full for brevity with a brief summary given below.

Decommissioning will involve the controlled removal and off-site transport of all above-ground infrastructure, including turbine towers, nacelles, blades, transformers, and associated electrical and control equipment. These works will be undertaken using mobile cranes and heavy-goods vehicles operating on the existing access track network, thereby minimising the requirement for additional land disturbance. Subsurface infrastructure, including turbine foundations, underground cabling, and ducting, will be left *in situ*. As a result, decommissioning activities do not entail significant ground-breaking or soil removal, and no substantial earthworks are required beyond minor reinstatement of disturbed areas. Temporary construction compounds, laydown areas, and ancillary facilities will be demobilised, and the site will be restored, insofar as practicable, to its pre-construction condition in accordance with landowner agreements and regulatory obligations. Overall, the scale and intensity of decommissioning works are materially lower than those associated with the construction phase, and the potential for environmental impacts is correspondingly reduced.

6.4.3.1.1 Direct Impacts

6.4.3.1.1.1 Nest Damage or Destruction

Construction and decommissioning activities pose a direct risk to nesting birds through the potential accidental damage or destruction of active nests, eggs or chicks. This is particularly relevant for ground-nesting and low-shrub nesting species that may establish nests within or near the development footprint (Pearce-Higgins et al., 2012), including turbine bases, access tracks, laydown areas, substation and temporary compounds. Vegetation clearance, excavation, and the movement of heavy machinery during the breeding season (typically March to August) can result in the unintentional breach of legal protections under Section 22 of the Wildlife Act 1976 (as amended) and the EU Birds Directive (2009/147/EC).

However, good practice, embedded mitigation measures will avoid damage and destruction to occupied bird nests during the construction and decommissioning phases, if any bird species are confirmed as breeding. These have been previously described in Section 6.4.1.

6.4.3.1.1.2 Habitat Loss

The construction phase will result in the permanent and temporary loss of habitats that could be used by birds for breeding, foraging, and shelter. This includes the direct footprint of turbines, access roads, and associated infrastructure, as well as temporary working areas. The scale and ecological value of the affected habitats will influence the magnitude of this impact. Loss of structurally diverse grassland, heath, or wetland habitats may disproportionately affect species with specific habitat requirements, such as waders, raptors, or ground-nesting passerines (Bennun et al., 2021). While some habitat loss may be reversible post-construction, the fragmentation of habitat and reduction in habitat quality during construction can have lasting effects on local bird assemblages, potentially leading to reductions in local abundance and species diversity (Fernández-Bellon et al., 2019).

Construction of the proposed project will lead to a total direct loss of 152.29 ha of habitats. Most of the habitats to be lost are commercial conifer plantation WD4 (133.1 ha), which are generally of lower value to biodiversity and IOF species more generally.

No permanent habitat loss will occur during decommissioning; all works will be temporary in nature, and habitats will be reinstated.

Direct habitat loss could affect IOF species breeding within the proposed wind farm site, which include hen harrier, common snipe and Eurasian woodcock.

None of the habitats to be lost are of particular importance for wintering IOFs because there were no large aggregations of wintering wildfowl or waders recorded foraging or roosting within the proposed wind farm site. There were also no winter roosts for raptors recorded during surveys.

As the GCR will be almost entirely buried underground within or immediately adjacent to existing roads, only a minimal amount of bounding habitat (10 m of hedgerow WL1, 0.01 ha of mixed broadleaved woodland WD1 and 0.01 ha of scrub WS1) will be temporarily lost (this is to accommodate horizontal directional drilling rigs rather than to accommodate the GCR itself).

Activities at TDR accommodation areas will be minor in nature, involving vegetation trimming, small-scale tree removal and temporary alterations to roadside features. Temporary habitat losses form the great majority of total habitat change, representing between 85-90% of all habitats affected and will be reinstated following the completion of accommodations. Only very small permanent losses of hedgerow WL1 (116 m) and treelines WL2 (52 m) will occur (less than 10-15% of total habitats affected).

6.4.3.1.1.3 Disturbance / Displacement

Construction and decommissioning-related disturbance, including noise, vibration, visual intrusion, and increased human activity, can lead to the temporary displacement of birds from otherwise suitable breeding, roosting or foraging areas. This is particularly relevant for disturbance-sensitive species such as raptors and waders (Tolvanen et al., 2023). Displacement may result in reduced territory occupancy, lower breeding success, or increased energetic costs associated with suboptimal habitats. The effects are likely to be most pronounced during the breeding season (predominantly between March and August) but may also affect overwintering or migratory species depending on the timing of works. The spatial extent of disturbance will vary depending on species-specific sensitivity and the intensity of construction activities, and the availability of suitable displacement habitats in the surrounding area.

Disturbance and thus, displacement could affect IOF species breeding within or nearby the proposed wind farm site, which include hen harrier, common snipe and Eurasian woodcock.

Disturbance and displacement are unlikely to affect wintering IOFs because there were no large aggregations of wintering wildfowl or waders recorded foraging or roosting within the proposed wind farm site. There were also no winter roosts for raptors recorded during surveys.

Significant disturbance/displacement effects are unlikely to occur along the GCR or TDR accommodation areas, with the GCRs proposed to be buried within or adjacent to existing roads or heavily modified cultivated habitats (e.g. agricultural grasslands) and the accommodations at the TDR accommodation areas being minor (e.g. trimming of hedgerows, removal of small, individual trees, and removal of road signs and street furniture).

Any disturbance/displacement from construction activities while the cable is being buried within the road is unlikely to be significantly greater than that from typical traffic levels. The GCR does not pass through or within 1 km of any sites designated for their ornithological interest. The only such site that could be affected by accommodations at any TDR accommodation area is Cummeen Strand SPA, which is c.20 m from accommodation area 13, although it is acknowledged this is unlikely given the TDR accommodation area is located in the central of a busy junction in Sligo town with high background levels of disturbance.

The potential impacts associated with construction or decommissioning activities are only likely to occur for as long as the construction or decommissioning phase continues and are thus generally short-term and reversible in nature. The only circumstance in which such effects would not be reversible is if disturbance during construction or decommissioning were severe enough to cause the local breeding population to disappear, and the species does not subsequently return or recruit new individuals to re-establish the population.

However, good practice, embedded mitigation measures will avoid disturbance to occupied bird nests during the construction and decommissioning phases, if any bird species are confirmed as breeding. These have been previously described in Section 6.4.1.

6.4.3.1.2 Indirect Impacts

If hydrocarbon spills during the construction or decommissioning of the proposed project led to pollution of surface water-dependent wetland habitats and / or construction and decommissioning activities led to the dewatering of groundwater-dependent habitats within nearby nature conservation sites for birds, it could result in indirect habitat loss for SCI bird species or habitats. The same is true for wetland sites that could be used by bird species from nearby designated sites, even if those wetland sites are not designated themselves.

It was concluded there were no significant negative effects on surface water- or groundwater-dependent habitats in Chapter 5 - Biodiversity, or Chapter 8 - Hydrology and Hydrogeology (see Section 8.4.2 in Chapter 8 for a description of the embedded mitigation), which precludes the possibility of negative effects on IOFs that use such habitats.

6.4.3.2 Operation

6.4.3.2.1 Direct Impacts

Potential direct impacts include:

- Disturbance / displacement and barrier effects; and
- Collision with wind turbines.

No operational impacts are likely for the GCR, which will be buried underground and located almost entirely within or adjacent to the existing road network. The same is also true for the TDR accommodation areas because the proposed accommodations will be limited to the construction stage.

There will be a single, 100 m tall meteorological mast within the proposed wind farm site. The structure will be a self-supporting lattice mast, with no guy wires required for stability. NatureScot guidance on collision risk associated with power lines and meteorological masts highlights that the primary collision hazard is presented by the supporting guy wires, which can be difficult for birds to detect in flight and have been associated with bird mortality NatureScot (2025b).

Because lattice masts do not use guy wires, they remove the main mechanism identified by NatureScot as contributing to avian collision risk. The lattice tower itself is more visually conspicuous and has a wider physical form than thin support wires, meaning birds are more likely to detect and avoid it. NatureScot's guidance specifically frames the concern around guyed structures, rather than freestanding lattice towers, further reducing concern for mortality due to this design type NatureScot (2025b).

Considering the absence of guy wires and the narrow overall footprint of the structure, the collision risk associated with this lattice met mast is assessed as extremely low. Consequently, no likely significant negative effects on bird populations are predicted because of the operation, or presence of the mast.

The remaining proposed elements are considered in further detail below.

6.4.3.2.1.1 Disturbance / Displacement and Barrier Effects

The operation of wind turbines and associated human activities for maintenance purposes (including maintenance of buffer areas surrounding turbines as part of the mitigation for potential operational effects on bats) both have the potential to cause disturbance and displace birds from the proposed project site. Disturbance effects during the operational phase may be less than during the construction phase, as species may become habituated to wind turbines and disturbance due to human activities would be considerably reduced.

Studies have shown that, in general, species are not displaced beyond 500 m to 800 m from wind turbines (Drewitt & Langston, 2006; Goodship et al., 2022; Hötker et al., 2006; Pearce-Higgins et al., 2009), and, in some cases, birds do not appear to have been displaced at all (Devereux et al., 2008; Douglas et al., 2011; Fielding & Haworth, 2013; Whitfield et al., 2010).

Individual turbines, or the wind farm as a whole, may present a barrier to the movement of birds, restricting or displacing birds from much larger areas. The effect this would have on a population, if affected, could be subtle, and may be difficult to predict. If birds regularly must fly over or around obstacles or are forced into suboptimal habitats, this may result in greater energy expenditure. By implication, this will reduce the efficiency with which they accumulate reserves, potentially affecting their survival or breeding success. However, logically, barrier effects can only be possible if there is clear evidence birds are regularly flying through a site, or regularly using the habitats within a site, which are optimal for foraging, breeding or roosting.

Disturbance/displacement and barrier effects during operation may affect species in the breeding season or roosting and foraging species outside of the breeding season, within the relevant parts of the study area, i.e. close to the proposed wind turbines.

Disturbance associated with the on-site substation and operational access tracks will not be significant during the operational phase. Operational activity is very limited, consisting mainly of infrequent light-vehicle access for routine maintenance (typically several times per year) and remote monitoring. These activities generate only low levels of noise, traffic and human presence, all of which are of short duration and highly predictable. Maintenance visits are also confined to existing tracks and infrastructure and therefore do not introduce new disturbance sources or affect additional habitat. In addition, birds present within or near wind farm sites rapidly habituate to predictable, low-intensity human activity associated with standard operations. For these reasons, no significant disturbance effects on birds, including sensitive species recorded in the wider area, are predicted during operation.

Similarly, disturbance/displacement and barrier effects for the GCR and TDR accommodation areas will not be significant during the operational phase because the grid cable will remain buried in the ground for the duration of the operational phase and the TDR accommodation areas are required for the construction phase only.

The species most likely to suffer from disturbance/displacement is breeding hen harrier. This is because between 1-2 breeding pairs have been recorded within the proposed wind farm site, or more frequently in the immediate surrounds over the survey period (3 nests within proposed wind farm site and eight off-site in the study area) and best-practice guidance (Goodship et al., 2022) states that while hen harrier may nest as close as 200 to 300 m from operational turbines, a precautionary buffer of 300-750 m should be applied during the breeding season to minimise disturbance.

Other important, wide-ranging species may suffer from some disturbance from wind turbines while foraging, but effects are less likely to be significant given the large size of their respective foraging ranges and the wide availability of more optimal, alternative foraging habitats located outside the proposed wind farm site and because the site is less important for them.

6.4.3.2.1.2 Collision

Collision of a bird with turbine rotor blades is generally fatal. The consequences of such mortality depend on the size, density, and demography of the affected population. In species with low population densities and low reproductive rates such as raptors, each additional loss can represent a higher proportion of the local population, with greater potential for negative population-level effects than in abundant, fast-reproducing species such as passerines (Beston et al., 2016). Large birds such as raptors and waterfowl also tend to be long-lived and have low annual productivity, which increases their sensitivity to additional mortality from turbine collisions (Carrete et al., 2012; Katzner et al., 2016).

The likelihood of collision is influenced by several interacting factors, including the size, manoeuvrability, and flight behaviour of the species, their use of the proposed wind farm site, environmental conditions, and the design and layout of the wind farm itself. Collision risk is typically greatest for species that spend a high proportion of time flying within the rotor-swept zone, such as foraging or displaying raptors, and for birds that undertake regular low-level flights between feeding and roosting areas (e.g. swans, geese, and other wildfowl). Risk increases in areas where large concentrations of birds occur (e.g. migration bottlenecks) and during poor visibility or negative weather conditions that reduce birds' ability to detect or avoid turbines (Drewitt & Langston, 2006; Langston & Pullan, 2003). Raptors may also be more vulnerable where wind farms coincide with areas of high prey density or where suitable perching structures are present near turbines (Percival, 2005).

Although passerines nesting or foraging within a wind farm might appear to be at regular risk of collision, evidence indicates that small birds generally collide with turbines infrequently compared with larger species. Most passerines fly below the height of the turbine blades or migrate at altitudes above rotor level. Moreover, many species migrate nocturnally and traverse wind farm sites rapidly, limiting their exposure time (Bradarić et al., 2024; Mills et al., 2011).

Empirical monitoring studies consistently show that raptors, gulls, and large waterbirds are overrepresented in collision records relative to their abundance, while passerines constitute only a small proportion of fatalities (Erickson et al., 2014; Thaxter et al., 2017). This pattern

reflects behavioural and aerodynamic differences but also the influence of detection bias: small carcasses are removed more rapidly by scavengers and are harder to locate during searches (Devault et al., 2017). Even after correction for such biases, however, passerines remain among the least affected groups.

From a population perspective, most passerine species are widespread, abundant, and characterised by high reproductive output ('fast' life-history traits). Consequently, additional mortality from wind turbine collisions is generally unlikely to result in measurable population effects. In contrast, species with small or declining populations, slow reproduction, and high site fidelity, such as target raptor species and large, less manoeuvrable waterbirds (e.g. swans and geese), are of higher sensitivity to collision impacts. Populations with a favourable conservation status (stable or increasing) are also more capable of compensating for small increases in mortality through density-dependent processes, whereas populations already in decline may not be able to do so.

It is important to note that operational disturbance and collision risk effects are spatially mutually exclusive (see Section 6.2.2 for further discussion): a bird that avoids the wind farm due to disturbance cannot simultaneously be at risk of collision. However, they are not temporally exclusive as a bird may initially avoid the proposed wind farm site but later habituate, at which point it could be exposed to collision risk. In addition, habitat change associated with construction or ongoing forestry management may alter collision risk over time, for example by attracting open-ground species to recently felled areas or forest species to maturing stands.

IOF species that were scoped in for detailed assessment and considered at risk of collision with the proposed project, based on flight activity data recorded, were subjected to CRM (see Appendix 6-14) and consisted of:

- Common kestrel
- Common snipe;
- Eurasian woodcock;
- European golden plover;
- Hen harrier;
- Lesser black-backed gull;
- White-tailed eagle; and
- Whooper swan.

6.4.3.2.1.2.1 Rationale for Prediction of Effect

It has been assumed that any impact which does not increase adult mortality by more than 1% of the existing background mortality rate can be considered insignificant (Percival, 2003). This approach is inherently precautionary when applied to non-breeding populations because adult birds typically have the highest survival rates whereas in practice juvenile or sub-adult birds, which have lower survival rates, are likely to make up a proportion of any mortality. High adult survival means that natural (background) mortality rates (for adult birds) may be very low. As a result, even a small number of turbine-related deaths can represent more than a 1% increase above this low baseline. Using adult survival rates therefore represents a precautionary

approach, making it more likely for predicted collision mortality to exceed the 1% threshold and thus increasing the likelihood of identifying a likely significant effect.

Where excess mortality is >1% of background levels, a more detailed assessment of the predicted mortality over the 35-year lifespan of the proposed project has been provided. This considers each species' population size, recent population trends and ecology following NatureScot (2025c) guidance, as well as providing information on empirically documented cases of collision for further context (Dürr, 2025; NPWS, 2024; B. G. O'Donoghue et al., 2020). Significant negative effects are only likely where the number of predicted deaths due to the proposed project are likely to result in appreciable differences to projected rates of population decline or recovery.

Note that recent background trends may not continue over the lifespan of the proposed project, even if the proposed project did not go ahead. This is because population declines or increases may eventually plateau, depending on the drivers for the population trend. However, we have assumed that the recent trends will continue, as is standard and accepted practice in EIA.

Sources of empirically documented collisions in Europe come from the Dürr (2025) database (data from 2002-2025). While the Dürr database does not perfectly reflect reality (not all wind farm projects and countries carry out post-construction monitoring in the same way, with the same intensity, with the same level of detail and reporting), it represents the best estimate available of the empirical effects of collision on European birds. Collisions reported in the Republic of Ireland and Northern Ireland are conflated within the 'GB' column in the Dürr (2025) dataset and have been manually extracted so that only those for the island of Ireland are reported in this Chapter. Other additional datasets have been consulted for evidence of documented collisions in the Republic of Ireland included the RAPTOR protocol report (B. G. O'Donoghue et al., 2020) (data are from 2011-2019) and Irish Hen Harrier Threat Response plan (NPWS, 2024).

6.4.3.2.1.2.2 Summary of CRM outputs

Table 6-15 summarises the outcome of the CRM, accompanied by relevant supplementary data to support the evaluation of the potential significance of predicted collision mortality for each species. Adult survival rates are taken from BTO BirdFacts (BTO, 2025a). Annual background mortality is calculated as population size multiplied by background mortality rates (i.e. 1-survival rates). For further details regarding the CRM refer to Appendix 6-14. The evaluation of potential significance of collision mortality is given in Section 6.4.5.

Table 6-15: CRM Outputs and Population Data

Species	Number of Collisions / Year	Population Type[13]	Population Size	Adult Survival Rates	Background Mortality (Deaths / Year)	% Increase on Background Mortality Due to Collision	Total Number of Collisions Over 35-Year Lifespan	Population Trend	Empirically Documented Collisions Europe	Empirically Documented Collisions Ireland
Common snipe	0.54	ROI (nb)	835	0.481	458	0.12	18.1	-50% 1998 to 2018	19	0
Common kestrel	0.34	ROI (b and nb)	13,500	0.88	1,620	0.02	11.9	- 53% 1998 to 2018	928	2 (B. G. O'Donoghue et al., 2020)
Eurasian woodcock	0.00	ROI (b and nb)	27,434	0.61	10,699	0	0	-74% 1988 to 2011	23	0
European golden plover	0.10	ROI (nb / migratory)	80,707	0.73	21,791	0.0004	3.5	-16.5% 2019-2024	47	0
Hen harrier	0.06	ROI (b and nb)	212	0.81	40	0.19	2.1	-29% 1998 to 2018	30	One in Antrim in NI (Dürr, 2025);

[13] Key: nb = non-breeding and b = breeding populations

Species	Number of Collisions / Year	Population Type[13]	Population Size	Adult Survival Rates	Background Mortality (Deaths / Year)	% Increase on Background Mortality Due to Collision	Total Number of Collisions Over 35-Year Lifespan	Population Trend	Empirically Documented Collisions Europe	Empirically Documented Collisions Ireland
		Regional (b)	14		2.67	2.31				one possible and four probable / confirmed incidences of turbine strike (NPWS, 2024); (B. G. O'Donoghue et al., 2020)
Lesser black-backed gull	0.08	ROI (b)	14,224	0.913	1,237	0.0065	2.8	Increase (no magnitude given) 2012 to 2018	372	1
White-tailed eagle	0.064	ROI (b)	24	0.936	1.5	2.6	2.24	100% increase (2012 to 2018)	574	Three in Kerry in ROI (B. G. O'Donoghue et al., 2020); three in Donegal in ROI (Donegal Daily, 2025)
Whooper swan	0.00	ROI (nb)	14,467	0.801	2,879	0.00	0.00	24.9% increase 2015 to 2020	10	0

6.4.3.2.1.2.3 Nocturnal Migration and Aviation Lighting

Baseline flight activity surveys were only conducted during daylight hours. Therefore, it is possible that collision risk to nocturnal birds, especially nocturnal migrants, could be underestimated. However, this is unlikely to be the case for the following reasons.

Following the latest NatureScot CRM guidance (Band, 2024), collision risk estimates have been corrected for all species known to have nocturnal or crepuscular flight activity to account for any nocturnal flight activity that may have been missed by diurnal surveys.

Empirical evidence indicates that strictly nocturnal migrants do not face elevated collision risk at onshore wind farms. Studies from Germany and the Netherlands (e.g. Welcker et al. (2017) and Krijgsveld et al. (2009)) report that nocturnal migrants form only a small proportion of total bird collisions and occur at similar or lower rates than diurnal migrants. This reflects high-altitude night migration, short exposure times over land, and effective avoidance behaviour.

Aviation obstruction lighting has the potential to influence nocturnal migrants; however, available evidence from onshore wind farms in North America shows low collision rates in the context of population-level effects (typically 1-7 birds per turbine per year; Kerlinger et al. (2010)) and large-scale mortality events are not reported for modern, medium-intensity lit turbines, which are being proposed and are required to comply with ICAO Annex 14-based obstacle lighting schemes agreed with the Irish Aviation Authority (IAA, 2025). The risk is further reduced at the proposed project site because the site is inland and far from coastal concentrations of nocturnally active seabirds, which are the species groups shown to be most sensitive to artificial lighting (NatureScot, 2020). Therefore, no significant negative effects are likely in association with aviation lighting.

6.4.3.2.2 Indirect Impacts

If hydrocarbon spills during the operation of the proposed project led to pollution of surface water-dependent wetland habitats and / or pollution of groundwater-dependent habitats within nearby nature conservation sites for birds, it could result in indirect habitat loss for SCI bird species or habitats. The same is true for wetland sites that could be used by bird species from nearby designated sites, even if those wetland sites are not designated themselves.

It was concluded there were no significant negative effects on surface water or groundwater-dependent habitats in Chapter 5: Biodiversity, or Chapter 8: Hydrology and Hydrogeology (see Section 8.4.2 in Chapter 8 for a description of the embedded mitigation), which precludes the possibility of negative effects on IOFs that use such habitats.

6.4.4 Assessment of Likely Significant Effects for Nature Conservation Sites

SPAs are considered fully in the AA Screening and Natura Impact Statement (NIS) also submitted with this planning application.

The only SPA that was screened in for the NIS and taken forward for further assessment in this Chapter was Cummeen Strand SPA due the proximity of one of the TDR accommodation areas to the SPA (20 m), point of interest 13. This SPA is designated for non-breeding light-bellied brent goose, Eurasian oystercatcher, common redshank and wetland and waterbird habitats. There is also downstream connectivity to the SPA via the Sligo second order watercourse (EPA code 35S23) and so, in the absence of mitigation, there could be potential pollution effects on surface-water fed wetland and waterbird SCI habitats.

Given the proximity of the SPA to the accommodations area, there is the potential for temporary disturbance to SCI birds during the accommodations, which will comprise of temporary removal of road signs, trees, lamp posts and traffic lights.

The accommodations area is located on a busy junction with high levels of traffic and pedestrian activity. The proposed measures comprise the short-term, temporary removal of traffic lights, poles/signage and a small number of immature saplings within an existing busy road median. All accommodations are landward of the shoreline, confined to the paved island, and will be undertaken during normal daytime hours using hand tools and light plant. No access onto intertidal habitats is required.

The TIDE Waterbird Disturbance & Mitigation Toolkit (*TIDE Toolbox - TIDE Tools*, n.d.) indicates that (i) visual stimuli usually drive responses before noise, (ii) the urban/traffic context and habituation are critical in predicting effects, and (iii) steady background noise ≤~55–60 dB at the receptor is generally low effect, while moderate levels (60–72 dB) can also be low where such levels are typical and regular in urban settings.

For light-bellied brent goose, the toolkit notes high sensitivity with first-reaction distances ~105 m (foraging) and ~205 m (roosting) and a general tendency to avoid highly disturbed urban margins; oystercatcher exhibit moderate sensitivity and rapid habituation, typically reacting at 25–200 m in disturbed estuaries; common redshank are visually tolerant but noise-sensitive, with ≤~70 dB at the bird generally acceptable (with caution above 55–60 dB) and routine foraging observed close to plant in urbanized locales (while avoiding workers on foot at <~75 m). In heavily trafficked, pedestrian-active waterfronts, the increment from brief, minor, landward, accommodation measures is negligible relative to baseline.

Consequently, no effects above existing background levels are predicted for the SPA SCI species. Should any birds briefly flush due to incidental cues, rapid return and continued use is expected once the transient stimulus ceases, consistent with habituation patterns described in the TIDE toolkit.

It was also concluded, following the implementation of embedded mitigation measures, that there were no significant negative cumulative effects on surface water-dependent habitats in Chapter 5: Biodiversity, or Chapter 8: Hydrology and Hydrogeology (see Section 8.4.2 in Chapter 8 for a description of the embedded mitigation), which precludes the possibility of negative effects on wetland and waterbird SCI habitats from Cummeen Strand SPA also.

With the embedded mitigation measures in place, no significant effects on Cummeen Strand SPA are predicted.

All other nature conservation sites were scoped out from detailed assessment apart from the Leitrim Uplands non-designated important breeding area for hen harrier. This has been discussed in Table 6-20 as part of the impact assessment for hen harrier.

6.4.5 Assessment of Likely Significant Effects for Species

The impact assessment for species focuses on impacts from the proposed wind farm only. As stated in Section 6.4.3 impacts from the GCR and TDR accommodation areas on bird species have been assessed as non-significant.

6.4.5.1 Common Kestrel

There are no likely significant negative effects predicted for common kestrel (breeding and non-breeding seasons) as shown in Table 6-16.

Table 6-16: Summary of Impact Assessment for Common Kestrel (Breeding and Non-Breeding Seasons)

Impact	Impact Assessment	Significance of Effect
Construction and Decommissioning Phases		
Nest Damage or Destruction	No breeding recorded within the proposed wind farm site (off-site only), so no potential damage to nests possible pending the results of the confirmatory pre-commencement surveys.	Not significant
Habitat Loss	Relative to the other IOF species recorded, the high levels (i.e. >10,000 seconds) of flight activity within and surrounding the proposed wind farm site demonstrates regular site usage (present in every survey season but the NB20/21 season) and it is likely this species uses the habitats present for foraging. Common kestrel typically forages in open habitats that support small mammals, such as grasslands, agricultural landscapes and roadside verges, avoiding dense woodland and heavily forested areas (Village & Brockie, 2010). Figure 6-12 shows that most kestrel flight activity occurs over grassland habitats within the centre of the site, away from proposed infrastructure. Most of the habitats due to be lost are commercial conifer plantation (133.1 ha out of 152.29 ha), which are of low foraging value to this species; therefore, no significant habitat loss is likely.	Not significant
Disturbance / Displacement	Kestrel are only considered susceptible to disturbance within 200 m of the proposed wind farm site (Goodship et al., 2022). No evidence of breeding or roosting occurs within this distance, so significant disturbance or displacement of breeding or roosting kestrels is not predicted. Some disturbance to foraging birds is possible but this is unlikely to be significant due to the temporary and localised nature of any disturbance, and availability of extensive alternative foraging habitat in the wider area (most habitats within the proposed wind farm footprint are closed canopy conifer plantation (133.1 ha out of 152.29 ha), which are not suitable for foraging	Not significant

Impact	Impact Assessment	Significance of Effect
	common kestrel). Figure 6-12 shows that most kestrel flight activity occurs over grassland habitats within the centre of the site, away from proposed infrastructure.	
Indirect Impacts	This species is not dependent on nearby wetland or groundwater-dependent habitats; therefore, there is no potential for indirect impacts due to pollution or surface water or lowering of groundwater.	Not significant
Operational Phase		
Disturbance / Displacement	No sensitive locations (breeding or roosting) within the proposed wind farm site were identified during surveys (see above); therefore, no significant disturbance or displacement of breeding or roosting kestrels is likely. Some disturbance to foraging birds is possible but this is unlikely to be significant due to the availability of extensive alternative foraging habitat in the wider area (most habitats within the proposed wind farm footprint are closed canopy conifer plantation, which are not suitable for foraging common kestrel) and that most kestrel flight activity occurs over grassland habitats within the centre of the site, away from proposed infrastructure.	Not significant
Barrier Effect	There were 74 flight lines recorded for this species during surveys (>10,000 seconds) and the species was present in every survey season except the NB20/21 season, suggesting that the species does regularly overfly the proposed wind farm site; however, Figure 6-12 shows most of the flight lines were of birds foraging over the centre of the site, away from proposed infrastructure. The turbine layout is dispersed and not orientated in a linear fashion; therefore, any energetic costs incurred due to a barrier effect are likely to be minimal and not significant.	Not significant
Collision	As shown in Table 6-15, the CRM predicted 0.34 collisions per year, or 11.9 collisions over the 35-year lifespan of the proposed project, which is largely driven by the results from the breeding 2024 season only. This annual rate of collision corresponds to a 0.02% increase in background mortality for the ROI population, which is considerably less than the 1% increase in background mortality threshold typically used to determine significance. Population data for kestrel at a regional / county level were not available and a quantitative assessment against background mortality rates at a regional / county or local level is not possible.	Not significant

Impact	Impact Assessment	Significance of Effect
	However, given that majority of the flight lines recorded were on the margins of the collision risk zone and were generally well away from any proposed turbine locations, and that collision risk estimates for all survey seasons apart from the breeding 2024 season were much lower, it is likely that the predicted collision rate is an overestimate. While kestrel has a relatively high number of recorded turbine collisions in Europe, there were only two incidents recorded in Ireland. Taken together, the likely maximum number of deaths due to the proposed project is extremely small relative to the national population and would not result in any appreciable change to population trajectory at ROI and regional / county scales. The level of predicted mortality is therefore assessed as not significant and would not hinder any conservation actions undertaken for the recovery of the population.	
Indirect Impacts	This species is not dependent on nearby wetland or groundwater-dependent habitats; therefore, there is no potential for indirect impacts due to pollution or surface water or lowering of groundwater.	Not significant

6.4.5.2 Common Snipe

No likely significant negative effects are predicted for common snipe (breeding season) as shown in Table 6-17.

Table 6-17: Summary of Impact Assessment for Common Snipe (Breeding Season)

Impact	Impact Assessment	Significance of Effect
Construction and Decommissioning Phases		
Nest Damage or Destruction	Probably breeding within the proposed wind farm site, so potential damage to nests possible; however, with the embedded mitigation as described in Section 6.4.1, this is unlikely.	Not significant
Habitat Loss	No evidence of large numbers of this species regularly foraging or roosting within the proposed wind farm site. As shown in Figure 6-13, most flight activity occurred away from any proposed infrastructure, particularly towards Dough Mountain.	Not significant

Impact	Impact Assessment	Significance of Effect
	Most of the habitats due to be lost are commercial conifer plantation (133.1 ha out of 152.29 ha), which are of low value to this species, which tend to prefer wet grassland or peatland habitats for breeding (BirdWatch Ireland, 2025c); therefore, no significant habitat loss is likely.	
Disturbance / Displacement	Probably breeding on- or nearby to site (likely three territories present); see Figure 6-26; however, with the embedded mitigation as described in Section 6.4.1, disturbance is unlikely, so no significant disturbance / displacement is predicted.	Not significant
Indirect Impacts	There are no nearby surface water-fed wetland or groundwater-dependent habitats present within or associated with any nearby nature conservation sites designated for this IOF. Furthermore, with the embedded mitigation described in Chapter 5: Biodiversity and Chapter 8: Hydrology and Hydrogeology, there are no significant effects on surface water and groundwater predicted. Therefore, there can also be no potential for significant indirect impacts on common snipe due to surface water pollution or lowering of groundwater.	Not significant
Operational Phase		
Disturbance / Displacement	No sensitive foraging or roosting locations within the proposed wind farm site were identified during surveys (see above); however, there may be up to three breeding territories within or nearby the site, although this was not true for every survey year. Assuming a 47.5% decline in abundance of snipe within 500 m of operational turbines (Pearce-Higgins et al., 2009), there could be some loss of breeding snipe territories, adopting a precautionary approach. It is anticipated that, the occasional breeding attempts by snipe would relocate to other parts of the site or surrounding area, away from turbines. This conclusion is supported by data from the breeding surveys, which suggest that snipe breeding territories occupy different parts of the site from year to year and typically are located outside the site. On this basis, no significant effects are predicted.	Not significant
Barrier Effect	There is no evidence this species is regularly flying through the proposed wind farm site (Figure 6-13 shows that the majority of flight lines occurred off-site towards Dough Mountain) or regularly using the habitats within the proposed wind farm site for foraging or roosting, and the turbine layout is dispersed and not orientated in a linear fashion; therefore, any energetic costs incurred due to a barrier effect are likely to be minimal and not significant.	Not significant

Impact	Impact Assessment	Significance of Effect
Collision	As shown in Table 6-15, the CRM predicted 0.54 collisions per year, or 18.9 collisions over the 35-year lifespan of the proposed project, mostly driven by the results from the breeding 2025 season. This annual rate of collision corresponds to a 0.12% increase in background mortality for the ROI population. However, this percentage is likely to be an overestimate because ROI population figures derived from I-WeBS counts inevitably under-record cryptic, dispersed wetland species such as common snipe, meaning the true national population is larger than reported. Consequently, the proportional contribution of predicted turbine-related mortality is likely to be lower. As this 0.12% increase is less than a 1% increase in background mortality, it is unlikely that collision related mortality will have a significant impact on common snipe at a ROI level. Common snipe has a relatively low number of recorded turbine collisions in Europe and none in Ireland. This pattern is consistent with the species' flight behaviour, which is low, erratic, and typically at heights below the rotor-swept zone (eBird, 2026), and its tendency to remain within wetland habitats rather than engage in high-altitude or long-distance commuting flights through turbine arrays (Gale, 2023; Minias et al., 2013). Population data for common snipe at a regional level were not available and a quantitative assessment against background mortality rates at a regional or local level is not possible. Given that most of the flight lines recorded were on the margins of the collision risk zone, generally well away from any proposed turbine locations, and that collision risk estimates for all survey seasons apart from the breeding 2025 season were much lower, it is likely that the predicted collision rate is an overestimate. Accordingly, the assessment represents a precautionary, worst-case estimate, and in practice mortality is likely to be lower. Taken together, the likely maximum number of deaths due to the proposed project is extremely small relative to the national and county populations and would not result in any appreciable change to population trajectory at ROI and county scales. The level of predicted mortality is therefore assessed as not significant and would not hinder any conservation actions undertaken for the recovery of the population. This statement also considers movements at night, given that a correction factor was applied during the CRM process to account for any nocturnal activity that could potentially have been missed during diurnal flight activity surveys, following the latest best-practice guidance for CRM (NatureScot, 2024).	Not significant
Indirect Impacts	There are no nearby surface water-fed wetland or groundwater-dependent habitats present within or associated with any nearby nature conservation sites designated for this IOF. Furthermore, with the embedded mitigation described in Chapter 5: Biodiversity and Chapter 8: Hydrology and	Not significant

Impact	Impact Assessment	Significance of Effect
	Hydrogeology, there are no significant effects on surface water and groundwater predicted. Therefore, there can also be no potential for significant indirect impacts on common snipe due to surface water pollution or lowering of groundwater.	

6.4.5.3 Eurasian Woodcock

No likely significant negative effects are predicted for Eurasian woodcock (breeding and non-breeding seasons) as shown in Table 6-18.

Table 6-18: Summary of Impact Assessment for Eurasian Woodcock (Breeding and Non-Breeding Seasons)

Impact	Impact Assessment	Significance of Effect
Construction and Decommissioning Phases		
Nest Damage or Destruction	Probably breeding within the proposed wind farm site, so potential damage to nests is possible; however, with the embedded mitigation as described in Section 6.4.1, this is unlikely.	Not significant
Habitat Loss	Probably breeding; likely 2-3 breeding territories present in the north and south of the proposed wind farm site, with two c. 100 m from areas that will be felled for project infrastructure and one c.250 m away (see Figure 6-27). Based on the survey results, it does not appear any of the probable territories overlap with proposed infrastructure; however, as a precaution, it has been assessed that there may be some minor, non-significant temporary losses of the edge of territories, c. <1 ha. Most of the habitats due to be lost are commercial conifer plantation (133.1 ha out of 152.29 ha). Eurasian woodcock depend on a mosaic of woodland cover for daytime roosting and nearby open areas such as glades and rides for nocturnal foraging and courtship flights ("roding") (Engler et al., 2025). While they often occupy conifer plantations, their territorial presence is maintained by adjacent structural diversity, rather than the plantation canopy alone. Conifer removal can temporarily disrupt roosting habitat but does not necessarily result in permanent territory loss, provided structural features such as glades, rides, and edges are preserved or enhanced (Blakesley & Buckley, 2010; Braña et al., 2010).	Not significant

Impact	Impact Assessment	Significance of Effect
	Large-scale clear-felling for turbine infrastructure may degrade habitat quality significantly if it removes essential cover and diminishes invertebrate-rich foraging grounds (Braña et al., 2010; Engler et al., 2025). The proposed wind farm site is surrounded by a very large area of conifer plantation, which includes many forestry tracks, glades and rides. These will still be present following felling for the proposed project, and it is therefore likely that while there may be temporary disruption to roosting areas, it is unlikely any permanent loss of territories will occur given the wide availability of displacement habitats and lack of evidence that the population is at carrying capacity (e.g. the numbers of woodcock inside the displacement zones are less than those where habitat loss is predicted to occur). Therefore, no significant, long-term effects are predicted.	
Disturbance / Displacement	Probable breeding occurs within the proposed wind farm site and so disturbance to breeding woodcock could occur; however, with the embedded mitigation as described in Section 6.4.1, this is considered unlikely.	Not significant
Indirect Impacts	There are no nearby surface water-fed wetland or groundwater-dependent habitats present within or associated with any nearby nature conservation sites designated for this IOF. Furthermore, with the embedded mitigation described in Chapter 5: Biodiversity and Chapter 8: Hydrology and Hydrogeology, there are no significant effects on surface water and groundwater predicted. Therefore, there can also be no potential for significant indirect impacts on Eurasian woodcock due to surface water pollution or lowering of groundwater.	Not significant
Operational Phase		
Disturbance / Displacement	Probable breeding occurs within the proposed wind farm site and so disturbance to breeding woodcock could occur, as some of the identified territories are <200 m from proposed turbine locations (see Section 6.4.1.2); however, given the wide availability of alternative conifer habitats, including glades, rides and edges, it is anticipated that in reality, the occasional breeding attempts by woodcock would relocate to other parts of the site or surrounding area, away from turbines. It is therefore unlikely any permanent loss of the number of breeding territories will occur.	Not significant

Impact	Impact Assessment	Significance of Effect
Barrier Effect	Although woodcock was recorded using habitats within the proposed wind farm site (mean of 18 observations in the non-breeding season and 4 during the breeding season), flight activity was highly localized. Most flight lines were short and associated with movements between nearby foraging areas and breeding territories (see Figure 6-14), rather than long-distance commuting flights. This indicates that woodcock are not reliant on extensive cross-site movements. Furthermore, studies of woodcock interactions with wind farms in Ireland have found no evidence of significant barrier effects, as birds typically make short flights within forestry blocks and do not exhibit large-scale avoidance behaviour (Gittings, 2019). Barrier effects are generally associated with species undertaking long-distance migratory flights or wide-ranging movements, where wind farms can impose additional energetic costs (Masden et al., 2009), but these costs are negligible for species like woodcock whose movements are highly localized. In addition, the turbine layout at the proposed wind farm is dispersed and non-linear, avoiding the creation of a continuous physical barrier. Consequently, any potential increase in energetic costs due to displacement or barrier effects is expected to be minimal and not significant.	Not significant
Collision	As shown in Table 6-15, the CRM predicted 0 collisions per year or over the 35-year lifespan of the proposed project. Consequently, it is unlikely that collision related mortality will have a significant impact on Eurasian woodcock. It is acknowledged that nocturnal flight activity could have been missed by diurnal flight activity surveys; however, it was not possible to apply correction factors during the CRM process to account for any nocturnal activity that could potentially have been missed during diurnal flight activity surveys (NatureScot, 2024) because there were no diurnal flights within the collision risk zone. Although woodcock undertake nocturnal flights and seasonal migrations, available European collision datasets indicate that recorded turbine collisions for Eurasian woodcock are relatively low, especially when compared with larger or more aerial species. This pattern aligns with the woodcock's characteristic behaviour, showing a strong tendency to remain within woodland and wetland edge habitats (Heward et al., 2018; Hoodless et al., 2009), reducing the likelihood of routine high-altitude transit through turbine arrays. Accordingly, the proposed project will not hinder any conservation actions undertaken for the recovery of the population and will not give rise to any significant effects as a result of collision.	Not significant

Impact	Impact Assessment	Significance of Effect
Indirect Impacts	There are no nearby surface water-fed wetland or groundwater-dependent habitats present within or associated with any nearby nature conservation sites designated for this IOF. Furthermore, with the embedded mitigation described in Chapter 5: Biodiversity and Chapter 8: Hydrology and Hydrogeology, there are no significant effects on surface water and groundwater predicted. Therefore, there can also be no potential for significant indirect impacts on Eurasian woodcock due to surface water pollution or lowering of groundwater.	Not significant

6.4.5.4 European Golden Plover

No likely significant negative effects are predicted for non-breeding / migratory European golden plover as shown in Table 6-19.

Table 6-19: Summary of Impact Assessment for European Golden Plover (Non-Breeding / Migratory Seasons)

Impact	Impact Assessment	Significance of Effect
Construction and Decommissioning Phases		
Nest Damage or Destruction	N/A as only non-breeding / migratory season brought forward for detailed assessment.	N/A
Habitat Loss	There is no evidence of large numbers of this species regularly foraging or roosting within the proposed wind farm site. As shown in Figure 6-15, all flight activity recorded was off-site, towards to the edge of the 500 m survey buffer near Dough Mountain. Wintering or migratory golden plover tend to prefer wet grassland, bogs and agricultural fields (BirdWatch Ireland, 2025a). Most of the habitats due to be lost are commercial conifer plantation (133.1 ha out of 152.29 ha), which are of low value to this species; therefore, no significant habitat loss is likely.	Not significant
Disturbance / Displacement	No sensitive locations (foraging or roosting) within the proposed wind farm site were identified during surveys (activity was off-site and largely comprised of birds circling overhead, apparently on migration). Non-breeding golden plover requires a buffer of 200-500 m to avoid disturbance while foraging or roosting (Goodship et al., 2022). While the closest flight location was c.300 m from any proposed infrastructure, as the birds appeared to be passing through the area only, no significant disturbance / displacement is likely.	Not significant

Impact	Impact Assessment	Significance of Effect
Indirect Impacts	There are no nearby surface water-fed wetland or groundwater-dependent habitats present within or associated with any nearby nature conservation sites designated for this IOF. Furthermore, with the embedded mitigation described in Chapter 5: Biodiversity and Chapter 8: Hydrology and Hydrogeology, there are no significant effects on surface water and groundwater predicted. Therefore, there can also be no potential for significant indirect impacts on European golden plover due to surface water pollution or lowering of groundwater.	Not significant
Operational Phase		
Disturbance / Displacement	No sensitive locations (foraging or roosting) within the proposed wind farm site were identified during surveys; therefore, no significant disturbance / displacement is likely.	Not significant
Barrier Effect	There is no evidence this species is regularly flying through the proposed wind farm site (see Figure 6-15; all flight activity was recorded off-site, towards the edge of the 500 m survey buffer near Dough Mountain) and no evidence it was regularly using the habitats within the proposed wind farm site for foraging or roosting (there were a mean of seven and three observations made of this species during the non-breeding and breeding seasons, respectively, but most activity occurred over Dough Mountain off-site and appeared to be of birds on migration), and the turbine layout is dispersed and not orientated in a linear fashion; therefore, any energetic costs incurred due to a barrier effect are likely to be minimal. No significant barrier effects are predicted.	Not significant
Collision	As shown in Table 6-15, the CRM predicted 0.1 collisions per year, or 3.5 collisions over the 35-year lifespan of the proposed project. This annual rate of collision corresponds to a 0.0004% increase in background mortality for the ROI population and a 0.02% increase for the County Leitrim population. However, these percentages are likely to be overestimates because ROI population figures derived from I-WeBS counts inevitably under-record species that do not solely rely on wetlands, such as European golden plover, meaning the true national population is larger than reported. Consequently, the proportional contribution of predicted turbine-related mortality is likely to be lower. Regardless, as both percentage increases are considerably less than a 1% increase in background mortality, it is unlikely that collision related mortality will have a significant effect on European golden plover. Accordingly, the assessment represents a precautionary, worst-case estimate, and in practice, mortality is likely to be lower.	Not significant

Impact	Impact Assessment	Significance of Effect
	European golden plover has a relatively low number of recorded turbine collisions in Europe and none in Ireland. Taken together, the likely maximum number of deaths due to the proposed project is extremely small relative to the national and county population and would not result in any appreciable change to population trajectory at ROI and county scales. The level of predicted mortality is therefore assessed as not significant and would not hinder any conservation actions undertaken for the recovery of the population. This statement also considers movements at night, given that a correction factor was applied during the CRM process to account for any nocturnal activity that could potentially have been missed during diurnal flight activity surveys, following the latest best-practice guidance for CRM (NatureScot, 2024).	
Indirect Impacts	There are no nearby surface water-fed wetland or groundwater-dependent habitats present within or associated with any nearby nature conservation sites designated for this IOF. Furthermore, with the embedded mitigation described in Chapter 5: Biodiversity and Chapter 8: Hydrology and Hydrogeology, there are no significant effects on surface water and groundwater predicted. Therefore, there can also be no potential for significant indirect impacts on European golden plover due to surface water pollution or lowering of groundwater.	Not significant

6.4.5.5 Hen Harrier

There are likely significant effects of disturbance / displacement on breeding hen harrier populations during the operational phase as shown in Table 6-20; however, no other significant effects are predicted. As the proposed wind farm site forms part of the Leitrim Uplands non-designated important breeding area for hen harrier, any impacts on hen harrier also apply for the non-designated important breeding area.

Table 6-20: Summary of Impact Assessment for Hen Harrier (Breeding and Non-Breeding Seasons)

Impact	Impact Assessment	Significance of Effect
Construction and Decommissioning Phases		

Impact	Impact Assessment	Significance of Effect
Nest Damage or Destruction	Confirmed breeding (up to two pairs have nested within in the proposed wind farm site or up to three pairs in the wider area during the study period, although most nesting activity has occurred off-site over the last five years of surveys); so potential damage to nests is possible if nesting occurs within the proposed project footprint immediately prior to construction; however, with the embedded mitigation as described in Section 6.4.1, nest damage or destruction is unlikely.	Not significant
Habitat Loss	Most of the habitats due to be lost (133.1 ha out of 152.29 ha) are closed canopy commercial conifer plantation, which are of low value to this IOF species for nesting, foraging and roosting ((Caravaggi et al., 2019; Madders, 2000; O'Donoghue, 2020). Therefore, while there could be some loss of foraging habitats to this species, it is not likely to be significant. None of the historical nest locations are located within the proposed project footprint even if some have been located within the proposed wind farm site, so there is no likelihood that any previously known nest sites will be lost based on survey data. The same is true for winter roosts; there is no evidence of this species using the study area for roosting and so there can be no loss of roosting habitat. There is also overlap with the effective habitat loss due to displacement under operation and all that habitat directly lost during construction is also covered under the assessment of operational disturbance.	Not significant
Disturbance / Displacement	As stated above, confirmed breeding occurs within and nearby the proposed wind farm site, so potential disturbance to nesting hen harrier is possible; however, with embedded mitigation as described in Section 6.4.1, this is unlikely. There are no winter roosts present and so no disturbance to roosting hen harrier in the winter is possible. There could be some disturbance to foraging birds during construction; however, this is unlikely to be significant due to the temporary and localised nature of any disturbance and availability of extensive alternative foraging habitat in the wider area (most habitats within the proposed wind farm footprint are closed canopy conifer plantation, which are not suitable for foraging hen harrier).	Not significant
Indirect Impacts	This species is not dependent on nearby wetland or groundwater-dependent habitats; therefore, there is no potential for indirect impacts due to pollution or surface water or lowering of groundwater.	Not significant
Operational Phase		

Impact	Impact Assessment	Significance of Effect
Disturbance / Displacement	No winter roosting within the proposed wind farm site was identified during surveys; therefore, no disturbance / displacement to winter roosts is likely. As shown in the OBMP (Appendix 6-13), nesting hen harrier require a buffer of 750 m to avoid disturbance from operational turbines (Goodship et al., 2022). If any hen harrier nest <750 m from operational turbines, they could be subsequently disturbed (particularly if they select a nesting site during a period of turbine downtime), which could potentially result in displacement. It is acknowledged that in some survey years, only a single pair has been recorded and that one or both pairs may not necessarily be displaced due to the proposed project. However, adopting a precautionary approach, displacement of up to two nesting pairs is possible. Similarly, operational turbines could disturb foraging hen harrier. Hen harrier has been shown to avoid foraging near operational turbines by at least 250 m (Pearce-Higgins et al., 2009). This displacement would result in the effective loss of foraging habitat for this species. Potential loss of hen harrier foraging habitats due to operational displacement has been assessed comprehensively in the Hen Harrier Foraging Habitat Loss Report (Appendix 6-12). The analysis integrated desk-based research, field surveys, and GIS-based assessment to quantify habitat displacement effects based on both current and future habitat suitability over the lifespan of the proposed project. When planned forestry cycles were accounted for, it was predicted that up to 140 ha of foraging habitat could be lost to foraging hen harrier over the lifespan of the proposed project, which corresponded to 76 ha and 64 ha of higher and lower suitability habitats, respectively. This could potentially have a significant effect on up to two pairs of foraging hen harrier.	Significant, long-term, negative at the national scale for breeding and foraging hen harrier and in relation to the Leitrim Uplands non-designated important breeding area for hen harrier
Barrier Effect	This species regularly flies through the proposed wind farm site and uses the habitats within and surrounding the proposed wind farm site for breeding and foraging; however, the turbine layout is dispersed and not orientated in a linear fashion; therefore, any energetic costs incurred due to a barrier effect are likely to be minimal. Studies in Ireland and Scotland have found no evidence of significant energetic costs or population-level impacts attributable to wind farms, with barrier effects being highly variable and often negligible when turbine layouts are dispersed and non-linear (Haworth & Fielding, 2012; M. W. Wilson et al., 2017). No significant barrier effects are predicted.	Not significant
Collision	As shown in Table 6-15, the CRM predicts 0.06 collisions per year (2.1 over 35 years). Adopting a precautionary approach whereby it is assumed that the predicted collisions relate to adult birds (which have much higher survival rates than juvenile birds), this level of mortality equates to a 0.19%	Not significant

Impact	Impact Assessment	Significance of Effect
	increase in annual background mortality at the ROI scale and 2.31% at the regional Leitrim–Slieve Rushen–Cavan breeding-area scale. The national-scale increase is well below the commonly applied 1% threshold, indicating no significant effect at ROI level. The 1% value is not a statutory threshold for birds, but a commonly used screening indicator. Significance is determined by whether additional mortality could influence population trajectory, and at this magnitude no such effect is plausible. At the regional scale, the 2.31% increase in background mortality is above the 1% threshold, albeit this is based on the precautionary assumption that all predicted collisions relate to adult birds. If juvenile survival rates are applied, the predicted increase in background mortality falls to 0.56%, which would be below the 1% threshold. The true effect is likely to fall between 0.56% and 2.31%, depending on annual productivity and the proportion of locally fledged juveniles flying at rotor height. Displacement of foraging birds within 250 m of turbines has been assumed and operates upstream of collision risk; birds displaced from the area surrounding turbines due to disturbance are not simultaneously exposed to blade strike. Assuming displacement occurs, actual flight activity within/around the site during operation will be considerably lower than the baseline flight activity levels on which the CRM was based. The number of collisions predicted by the CRM is directly proportionate to the levels of flight activity within the immediate vicinity of the turbines. If displacement substantially reduces flight activity in the vicinity of the turbines, then the actual collision risk will be considerably lower than the modelled collision risk. Based on the above, the likely number of deaths due to the proposed project is extremely small relative to the national and regional populations and is unlikely to result in any appreciable change to population trajectory at ROI or regional scales. The level of predicted mortality is therefore assessed as not significant and would not hinder any conservation actions undertaken for the recovery of the population. Given that the hen harrier population at the proposed project site aligns with those known for the Leitrim Uplands non-designated important breeding population, the same conclusions regarding collision apply to the Leitrim Uplands population also.	
Indirect Impacts	This species is not dependent on nearby wetland or groundwater-dependent habitats; therefore, there is no potential for indirect impacts due to pollution or lowering of groundwater.	Not significant

6.4.5.6 Lesser Black-Backed Gull

No likely significant negative effects are predicted for lesser black-backed gull (breeding season) as shown in Table 6-21.

Table 6-21: Summary of Impact Assessment for Lesser Black-Backed Gull (Breeding Season)

Impact	Impact Assessment	Significance of Effect
Construction and Decommissioning Phases		
Nest Damage or Destruction	No confirmed breeding was detected, and conifer and grassland are unsuitable breeding habitats for this species, which tend to nest on offshore islands, islands in inland lakes, sand dunes and coastal cliffs (BirdWatch Ireland, 2025b); therefore, no nest damage or destruction is likely.	Not significant
Habitat Loss	No evidence of this species breeding and no evidence of large numbers of this species regularly foraging / roosting within the proposed wind farm site was recorded during surveys (most flight lines were associated with birds commuting; see Figure 6-18). Most of the habitats due to be lost are commercial conifer plantation (133.1 ha out of 152.29 ha), which are of low value to this species (BirdWatch Ireland, 2025b); therefore, no significant habitat loss is likely.	Not significant
Disturbance / Displacement	No sensitive locations (breeding, foraging or roosting) within the proposed wind farm site were identified during surveys, with most flight lines comprising birds commuting over the site; therefore, no significant disturbance / displacement is likely.	Not significant
Indirect Impacts	There are no nearby surface water-fed wetland or groundwater-dependent habitats present within or associated with any nearby nature conservation sites designated for this IOF. Furthermore, with the embedded mitigation described in Chapter 5: Biodiversity and Chapter 8: Hydrology and Hydrogeology, there are no significant effects on surface water and groundwater predicted. Therefore, there can also be no potential for significant indirect impacts on lesser black-backed gull due to surface water pollution or lowering of groundwater.	Not significant
Operational Phase		
Disturbance / Displacement	No sensitive locations (breeding, foraging or roosting) within the proposed wind farm site were identified during surveys; therefore, no significant disturbance / displacement is likely.	Not significant

Impact	Impact Assessment	Significance of Effect
Barrier Effect	Although 71 flight lines of lesser black-backed gull were recorded passing through or over the proposed wind farm site (observations reflect cumulative total, with observations made in every breeding season, giving a mean of 14 flight lines per breeding season; see Figure 6-18), there is no evidence that the species regularly uses habitats within the site for breeding, foraging, or roosting. This is important because barrier effects are most likely where turbines intersect core foraging routes or commuting corridors between breeding and feeding areas (Drewitt & Langston, 2006). Lesser black-backed gulls in Ireland typically breed on coastal islands and cliffs and forage extensively in marine and coastal zones, often traveling tens of kilometres offshore (BirdWatch Ireland, 2025b). The recorded flights are therefore likely incidental rather than indicative of essential movement pathways. Furthermore, the turbine layout is dispersed and non-linear, avoiding the creation of a continuous barrier that could force detours or increase energetic costs. Therefore, no significant barrier effects are predicted.	Not significant
Collision	As shown in Table 6-15, the CRM predicted 0.08 collisions per year, or 2.8 collisions over the 35-year lifespan of the proposed project. This annual rate of collision corresponds to a 0.0065% increase in background mortality for the ROI population. As this is considerably less than a 1% increase in background mortality, it is unlikely that collision related mortality will have a significant impact on lesser black-backed gull. While lesser black-backed gull has a relatively high number of recorded turbine collisions in Europe, there was only a single incident recorded in Ireland. Research using GPS telemetry suggesting that collision sensitivity for lesser black-backed gull is typically highest near breeding colonies (Thaxter et al., 2019), which are absent from the proposed project site. There are also no SPAs designated for breeding lesser black-backed gull present within c.30 km (the mean foraging range plus standard deviation for breeding lesser black-backed gull (Thaxter et al., 2026). As stated in Table 6-11, Lough Derg (Donegal) SPA is designated for breeding lesser black-backed gull and is located c. 31 km from the proposed wind farm site; however, there have been no active breeding colonies in this SPA since 1999 after the closure of a nearby landfill at Donegal town. Taken together, the likely maximum number of deaths due to the proposed project is extremely small relative to the national and county population and would not result in any appreciable change to population trajectory at ROI and county scales. The level of predicted mortality is therefore assessed as not significant and would not hinder any conservation actions undertaken for the maintenance of the population.	Not significant

Impact	Impact Assessment	Significance of Effect
Indirect Impacts	There are no nearby surface water-fed wetland or groundwater-dependent habitats present within or associated with any nearby nature conservation sites designated for this IOF. Furthermore, with the embedded mitigation described in Chapter 5: Biodiversity and Chapter 8: Hydrology and Hydrogeology, there are no significant effects on surface water and groundwater predicted. Therefore, there can also be no potential for significant indirect impacts on lesser black-backed gull due to surface water pollution or lowering of groundwater.	Not significant

6.4.5.7 White-Tailed Eagle

No likely significant negative effects are predicted for white-tailed eagle (breeding season) as shown in Table 6-22.

Table 6-22: Summary of Impact Assessment for White-Tailed Eagle (Breeding Season)

Impact	Impact Assessment	Significance of Effect
Construction and Decommissioning Phases		
Nest Damage or Destruction	No confirmed or suspected breeding was recorded during survey period; therefore, no nest damage or destruction is likely pending the results of the confirmatory pre-commencement surveys. NPWS provided data that suggested a tentative breeding attempt 5-6 km from the wind farm site in 2025, so there may be a small, limited increase in eagle activity in the wider area; however, as stated below, the habitats at the wind farm site are not suitable for breeding eagles and so nesting is not predicted to occur on-site in the future.	Not significant
Habitat Loss	A small number of mainly immature eagles were recorded during the last three breeding seasons (four observations in total, each comprising a single flight line; see Figure 6-24). While activity increased from 2023 onwards, consistent with wider regional trends of gradual range expansion, records remained infrequent and comprised mainly birds flying high over the proposed wind farm site or commuting. Apart from a single observation made of a roosting immature eagle in the 2025 breeding season, there was no evidence of regular foraging or roosting on-site. Most of the habitats due to be lost are commercial conifer plantation (133.1 ha out of 152.29 ha), which is generally of low value to this species, which typically prefers habitats located near open water (Hardey et al.,	Not significant

Impact	Impact Assessment	Significance of Effect
	2013). Although a small increase in occasional eagle passage may occur in future years (as evidenced by a tentative breeding attempt 5-6 km from the wind farm site in 2025), current evidence indicates that the habitats to be lost are of limited ecological value to this species, and therefore no significant habitat loss is likely.	
Disturbance / Displacement	Surveys confirmed that no sensitive locations for white-tailed eagle, such as breeding, foraging, or regularly used roosting sites, occur within or close to the proposed wind farm site. Although a modest increase in occasional eagle activity has been recorded from 2023 onwards, these observations mostly involve birds transiting the area rather than regularly using habitat features within or adjacent to the wind farm site. This species requires a disturbance-free buffer of approximately 250–500 m during both breeding and non-breeding seasons (Goodship et al., 2022) and no such locations were identified within this distance. While limited increases in eagle presence may lead to more flyovers in future years (e.g. NPWS provided data that suggested a tentative breeding attempt 5-6 km from the wind farm site in 2025), the absence of breeding territories, foraging hotspots, or regular roosts means that significant disturbance or displacement effects remain unlikely.	Not significant
Indirect Impacts	There are no nearby surface water-fed wetland or groundwater-dependent habitats present within or associated with any nearby nature conservation sites designated for this IOF. Furthermore, with the embedded mitigation described in Chapter 5: Biodiversity and Chapter 8: Hydrology and Hydrogeology, there are no significant effects on surface water and groundwater predicted. Therefore, there can also be no potential for significant indirect impacts on white-tailed eagle due to surface water pollution or lowering of groundwater.	Not significant
Operational Phase		
Disturbance / Displacement	As explained above, no sensitive locations (breeding, foraging or regularly used roosting areas) within the proposed wind farm site were identified during surveys; therefore, no significant disturbance / displacement is likely. While limited increases in eagle presence may lead to more flyovers in future years, the absence of confirmed breeding territories, foraging hotspots, or regular roosts means that significant disturbance or displacement effects remain unlikely.	Not significant
Barrier Effect	There is no evidence this species is regularly flying through the proposed wind farm site (the only flight lines recorded were of birds flying high over the site and another two of an immature bird	Not significant

Impact	Impact Assessment	Significance of Effect
	flying over the site and roosting in the same area on a single occasion for the B23-B25 seasons; see Figure 6-24). Although observations have increased slightly from 2023 onwards, these remain infrequent and primarily involve transiting immature birds rather than individuals using the site for foraging or roosting. Activity levels of four observations across three breeding seasons, none of which relate to breeding, foraging, or regular roosting behaviour, indicate that the site does not form part of any established movement corridor. In addition, the turbine layout is dispersed and not arranged in a linear configuration that could present a substantial navigational barrier. While occasional eagle passage may increase as the regional population expands, any additional energetic costs arising from a barrier effect are expected to be minimal and not significant.	
Collision	As shown in Table 6-15, the CRM predicts 0.064 collisions per year, totalling 2.24 collisions over the 35-year operational period and equating to a 2.6% increase in annual background mortality. Although this exceeds the 1% screening threshold, the estimate assumes all affected birds are adults. Site-specific survey data indicate that eagle activity at the proposed development is dominated by immature, dispersing individuals rather than territory-holding adults. As juvenile survival (40%) is substantially lower than adult survival (94%), applying the appropriate juvenile survival rate reduces the predicted increase in background mortality to 0.28%, which is below the 1% threshold. The true effect is therefore expected to lie between 0.28% and 2.6%, with the lower value being more biologically realistic for the proposed project. At the wider scale, 574 white-tailed eagle collisions have been recorded in Europe compared to only six in Ireland, despite rapid population growth since their reintroduction Ireland's reintroduced white-tailed eagle population continues to expand and is now considered robust and self-sustaining (Næss, 2025). Satellite-tracked juveniles routinely disperse widely across the country (NPWS, 2026), which explains the predominance of immature birds at upland wind-farm sites. While this ongoing expansion introduces some uncertainty into forward collision-risk estimates, evidence from European reintroduction programmes shows that juveniles typically undertake broad exploratory movements before settling in high-quality, favoured habitats (e.g., waterbodies and semi-open landscapes), with the best habitats occupied first as populations grow (Treinys et al., 2015). This settlement behaviour is further supported by movement ecology research demonstrating strong site affiliation as birds mature (Eskildsen et al., 2024). There is no indication that the proposed wind-farm site represents such a favoured location, particularly given the absence	Not significant

Impact	Impact Assessment	Significance of Effect
	of open waterbodies. Future eagle activity at the site is therefore unlikely to substantially exceed that assumed in the CRM. Taken together, these lines of evidence including low predicted mortality at the site, the predominance of juveniles, the lack of favoured locations, and a strongly increasing national population, indicate that project-related collision mortality is not likely to be significant at the ROI scale and represents only a marginal, non-significant addition to background mortality. The proposed project is therefore not likely to hinder ongoing conservation actions nor affect the long-term viability of white-tailed eagles in Ireland. Given there is some uncertainty over future eagle expansion, monitoring and adaptive mitigation is proposed (see Sections 6.4.6 and 6.4.11).	
Indirect Impacts	There are no nearby surface water-fed wetland or groundwater-dependent habitats present within or associated with any nearby nature conservation sites designated for this IOF. Furthermore, with the embedded mitigation described in Chapter 5: Biodiversity and Chapter 8: Hydrology and Hydrogeology, there are no significant effects on surface water and groundwater predicted. Therefore, there can also be no potential for significant indirect impacts on white-tailed eagle due to surface water pollution or lowering of groundwater.	Not significant

6.4.5.8 Whooper Swan

No likely significant negative effects are predicted for whooper swan as shown in Table 6-23.

Table 6-23: Summary of Impact Assessment for Whooper Swan (Non-Breeding)

Impact	Impact Assessment	Significance of Effect
Construction and Decommissioning Phases		
Nest Damage or Destruction	N/A as only non-breeding population brought forward for detailed assessment.	N/A
Habitat Loss	There is no evidence of this species regularly foraging or roosting within the proposed wind farm site (only a single flight line overflew the site, with another two flight lines recorded off-site; see	Not significant

Impact	Impact Assessment	Significance of Effect
	Figure 6-25). Most of the habitats due to be lost are commercial conifer plantation, which are of low value to this species, which prefer lowland open farmland surrounding wetlands for winter foraging / roosting (BirdWatch Ireland, 2025d); therefore, no significant habitat loss is likely.	
Disturbance / Displacement	No sensitive locations (foraging or roosting) within the proposed wind farm site were identified during surveys and the handful of observations recorded were of birds overflying either the site or the surrounds. This species requires a disturbance-free buffer of approximately 200–600 m from foraging or roost sites during the non-breeding seasons (Goodship et al., 2022) and no such locations were identified within this distance. Accordingly, no significant disturbance or displacement is likely.	Not significant
Indirect Impacts	There are no nearby surface water-fed wetland or groundwater-dependent habitats present within or associated with any nearby nature conservation sites designated for this IOF. Furthermore, with the embedded mitigation described in Chapter 5: Biodiversity and Chapter 8: Hydrology and Hydrogeology, there are no significant effects on surface water and groundwater predicted. Therefore, there can also be no potential for significant indirect impacts on whooper swan due to surface water pollution or lowering of groundwater.	Not significant
Operational Phase		
Disturbance / Displacement	No sensitive locations (foraging or roosting) within the proposed wind farm site were identified during surveys or within 200-600 m of the site; therefore, no significant disturbance / displacement is likely.	Not significant
Barrier Effect	There is no evidence this species is regularly flying through the proposed wind farm site (only a single flight line was recorded over the site; see Figure 6-25) or regularly using the habitats within the proposed wind farm site for foraging or roosting (no foraging areas or roosts were detected), and the turbine layout is dispersed and not orientated in a linear fashion; therefore, any energetic costs incurred due to a barrier effect are likely to be minimal and not significant.	Not significant
Collision	Whooper swan was only recorded once during flight activity surveys, and this observation occurred outside of the collision risk zone (i.e. >500 m from proposed turbine locations), although a single flight line was recorded of 30 birds overflying the site during a winter walkover survey. For the latter, no flight heights were recorded and so it could not be used for collision risk modelling. This notwithstanding, the collective evidence (very low frequency of occurrence across all flight activity	Not significant

Impact	Impact Assessment	Significance of Effect
	surveys, the absence of recorded flights within the 500 m of proposed turbine locations, and lack of evidence for regular use of the proposed wind farm site and study area) suggests the collision risk posed to whooper swan during the day is negligible and not significant. It is acknowledged that collision risk to whooper swan migrating at night could have been underestimated as only diurnal flight activity surveys were undertaken. However, evidence from Jia et al. (2021) indicates that approximately 52% of whooper swan migratory flights occur during daylight hours. It is therefore reasonable to expect that if significant migratory movements were occurring over the proposed project site at night, at least some diurnal flights would have been detected during the survey period. Furthermore, any flights missed at night should be no more than recorded during the day. If any flight lines had been recorded by flight activity surveys within the collision risk zone (500 m buffer surrounding the turbines) in the day, it would have been possible to have applied a correction factor to account for nocturnal flights during collision risk modelling; however, as diurnal collision risk was effectively zero, this was not possible. Thus, the paucity of whooper swan observations suggests that the proposed wind farm site does not lie on a major migratory flight corridor for whooper swan, and that the collision risk estimate provided (i.e. negligible collision risk) is accurate.	
Indirect Impacts	There are no nearby surface water-fed wetland or groundwater-dependent habitats present within or associated with any nearby nature conservation sites designated for this IOF. Furthermore, with the embedded mitigation described in Chapter 5: Biodiversity and Chapter 8: Hydrology and Hydrogeology, there are no significant effects on surface water and groundwater predicted. Therefore, there can also be no potential for significant indirect impacts on whooper swan due to surface water pollution or lowering of groundwater.	Not significant

6.4.6 Additional Mitigation Measures and Residual Effects

Proposed additional mitigation measures, where appropriate are given in Table 6-24 for any IOFs for which potentially significant effects are identified in Sections 6.4.4 and 6.4.5. Mitigation has only been proposed for effects that were identified as potentially significant in Sections 6.4.4 and 6.4.5, and only additional mitigation (sometimes termed 'secondary mitigation') measures (Anderson et al., 2024) have been identified here, i.e. the embedded, good-practice measures set out in Section 6.4.1, which have been taken into account within the assessments in Sections 6.4.4 and 6.4.5, are not repeated here.

For clarity, precautionary best-practice measures relating to operational collision risk are also included in this section, even though the assessment concludes that collision effects are not significant. These measures are presented to follow best-practice guidance and to demonstrate how collision risk will continue to be managed during operation.

Compensation measures are not included in this section. Compensation is distinct from additional mitigation, as it addresses situations where potentially significant effects remain after all feasible mitigation has been applied. Details of any required compensation measures are presented in Section 6.4.9.

Table 6-24: Additional Mitigation Measures for IOFs for which Potentially Significant Effects are Identified

IOF	Effect Type	Additional Mitigation	Potential Effect Significance
Hen harrier	Loss of foraging habitat during construction and effective loss of foraging habitat due to disturbance / displacement due to operational turbines, potentially resulting in the displacement of up to two nesting pairs.	No additional mitigation available – measures given in Section 6.4.8, will offset significant effects. It was not appropriate to design the turbine layout around historical nesting sites as the nest sites varied year-on-year and likely reflected ongoing forestry cycles.	Potentially significant, negative, long-term at national scale – compensation measures proposed to offset this in Section 6.4.9.1.
Common kestrel, common snipe, Eurasian woodcock, European golden plover, hen harrier, lesser black-backed gull, white-tailed eagle	Collision with operational turbines.	No likely significant effects are predicted due to collision risk; however, precautionary, best practice secondary mitigation is proposed to address potential changes in exposure over the operational lifespan of the proposed project. The following precautionary, best practice mitigation measures will be implemented to prevent common kestrel and white-tailed eagle from colliding with operational turbines: • Reduction in habitat suitability (**common kestrel**): Prey availability in bat mitigation felling buffers will be reduced via the following habitat management measures implemented throughout the operational phase: creation of uniformly short vegetation heights via infrequent mowing or trimming of vegetation; removal of timber / brash from felling and chipping of tree stumps to ground level; spread and compaction of chipped wood and spoil to create a flat surface to prevent rapid colonisation of new vegetation; and piping / filling over of open field / forestry drains. This is a passive habitat management measure proven to reduce kestrel collision rates (Garcia-Rosa & Tande, 2023; Pescador et al., 2019); and • Carcass and attractant management (**white-tailed eagle**): Any livestock carcasses or other large animal	Not significant

IOF	Effect Type	Additional Mitigation	Potential Significance Effect
		remains (including fallen stock) within the operational proposed project site and along site access routes will be removed as soon as practicable (and in any case within 24 hours of discovery) and disposed of in accordance with relevant animal by-product requirements, to avoid attracting scavenging raptors into the turbine envelope. Carcass removal is recognised as a practical measure to reduce eagle exposure to anthropogenic mortality risks by reducing attraction to hazardous areas (Lonsdorf et al., 2023) A post-construction monitoring programme, which will include adaptive management if required, will also be implemented for all IOF species (Section 6.4.11) as a best-practice measure to confirm that the conclusions of the EIAR remain unchanged.	

6.4.7 Cumulative Effects

Potential cumulative effects on IOFs were assessed in relation to operational, consented, and planned wind farms, as well as other relevant developments for which planning applications have been submitted within 20 km of the proposed project. This 20 km radius follows the IWEA (2012) guidelines and corresponds to the largest core foraging distance for any SCI bird given by NatureScot (2016) guidance. It is therefore considered sufficient to encompass the typical movement ranges of the primary IOF species, enabling a meaningful assessment of cumulative risks including collision mortality, displacement, and habitat fragmentation.

While a 20 km study area was used initially, this was then reappraised during the impact assessment process, depending on the magnitude of potential project impacts. Non-wind farm projects were only considered where located within 1 km of the proposed project, due to the lower potential for impacts on IOFs. The same 1 km threshold was applied to GCR and TDR accommodation areas following the same logic i.e. there is lower potential for impacts on IOFs due to the localised nature of habitat loss and disturbance.

Cumulative effects related solely to hydro(geo)logical connectivity for designated bird conservation sites are not considered in this assessment. Effects from the proposed project alone have already been scoped out due to embedded mitigation described in Section 6.4.1, and therefore no cumulative hydrological effects are possible, which also aligns with the conclusions of Chapter 8 – Hydrology and Hydrogeology.

A summary of the wind farms and other projects considered is provided in Sections 6.4.7.1, 6.4.7.2 and 6.4.7.3 for the proposed wind farm, the GCR and TDR accommodation areas, respectively.

A complete list of plans and projects included in the EIA cumulative assessment is provided in Appendix 1-6, with details of data sources and search time periods given there.

For several existing wind farms in the wider region, no ornithological assessments or species-specific collision risk data were available. In the absence of evidence that the same sensitive species utilise both the proposed wind farm site and these other projects, and given the separation distances involved, there is no identified ecological pathway through which a measurable cumulative collision risk would arise for such projects.

6.4.7.1 Wind Farm Site

Developments considered for assessment of cumulative effects for the proposed wind farm site are given in Table 6-25. Note that assessment of likely significant cumulative effects is given in Section 6.4.7.1.2.

Table 6-25: Other Developments within 20 km of the Proposed Wind farm Site

Development Type	Name	Distance and Direction	Status	Details	IOFs Recorded at Both Proposed Project and Other Development	Potential for Cumulative Impacts
Wind Farm	Faughary Wind Farm	220 m west	Operational	3 no. wind turbines 105 m hub height and 82 m rotor diameter, Leitrim County Council Planning Reference 04/550 and 11/207. Source of information: compliance reports from 2015-2019 prepared by Woodrow Sustainable Solutions Ltd.	Hen harrier	Yes – in proximity to proposed project so cumulative collision risk during operational phase and contribution to effective loss of foraging habitat due to disturbance / displacement possible.
	Carrickeeny Wind Farm	6.8 km west	Operational	4 no. turbines 49 m hub height and 52 m rotor diameter, Leitrim County Council Planning Reference 04/815	No documents available on Leitrim County Council website	No - given the separation distance and number of turbines, significant cumulative impacts are very unlikely. This is because the further away two wind farms are from each other, the lower the likelihood that populations will be affected by both wind farms. The fewer turbines that are present in each wind farm, the lower the additive risk.

Development Type	Name	Distance and Direction	Status	Details	IOFs Recorded at Both Proposed Project and Other Development	Potential for Cumulative Impacts
	Tullynamoyle Wind Farm	9.1 km south	Operational	15 no. wind turbines 64 m hub height and 63 m rotor diameter. Leitrim County Council Planning References 05/691, 13/52, 15/93, 15/164, 21/57. ACP Planning Reference PL12.312895 Source of information: Environmental Impact Statement ("EIS") prepared by Jennings O'Donovan & Partners Ltd in 2013, 2015.	European golden plover, hen harrier.	Yes – cumulative collision risk impacts possible for these species.
	Tullynamoyle Wind Farm New	11.1 km south	Consented	4 no. wind turbines, Leitrim 81-82 m height and 133-138 m rotor diameter, ACP Planning Reference PL12.312895 Source of information: EIAR prepared by Jennings O'Donovan & Partners Ltd in 2020	Common kestrel, hen harrier, European golden plover	Yes – cumulative collision risk impacts possible for these species.
	Callagheen Wind Farm	11.7 km northeast	Operational	13 no. wind turbines hub height 60 m and rotor diameter 62 m, Fermanagh and Omagh District Council, NIPS Planning Reference L/2001/1514/F	No documents available	No - given the separation distance, significant cumulative impacts are very unlikely
	Callagheen single turbine	12.2 km northeast	Operational	Replacement to existing turbine, Fermanagh and Omagh District Council, NIPS Planning Reference LA10/2019/1354/F	No documents available	No - given the separation distance and number of turbines, significant cumulative impacts are very unlikely

Development Type	Name	Distance and Direction	Status	Details	IOFs Recorded at Both Proposed Project and Other Development	Potential for Cumulative Impacts
	Callagheen single turbine	12.2 km northeast	Live case	1 no. wind turbine with 84 m hub height and 61 m rotor and ground mount solar array, Fermanagh and Omagh District Council, NIPS Planning Reference LA10/2024/0018/F. Source of information: Preliminary Ecological Appraisal prepared by Erne Environmental Ltd in 2024	Common snipe	Yes – cumulative collision risk impacts possible for these species
	Ora More Wind Farm	13.4 km east	Operational	6 no. wind turbines 75 m hub height and 103 m rotor diameter, Fermanagh and Omagh District Council, NIPS Planning Reference L/2005/3070/F, L/2013/0540/F and L/2013/0625/F). Source of information: EIA prepared by RES UK & Ireland Ltd in 2013.	Hen harrier, European golden plover, common snipe, common kestrel, whooper swan	Yes – cumulative collision risk impacts possible for these species.
	Derrykillew Wind Farm	16.2 km northeast	Consented	5 no. wind turbines 79.5 m hub height and 113 m rotor diameter, ACP Planning Reference PL05E.245108 and Donegal County Council Planning Reference 14/51400. Source of information: EIS prepared by Jennings O'Donovan & Partners Ltd in 2014.	None	None – if IOFs not recorded at both projects, cumulative impacts not possible

Development Type	Name	Distance and Direction	Status	Details	IOFs Recorded at Both Proposed Project and Other Development	Potential for Cumulative Impacts
	Garvagh Glebe Wind Farm	16.8 km southwest	Operational	12 no. wind turbines 105 m hub height and rotor diameter 130 m, Leitrim County Council Planning Reference Unknown	None	None – if IOFs not recorded at both projects, cumulative impacts not possible
	Croagh Wind Farm	18.8 km southwest	Live case	10 no. wind turbines hub height 105 m and rotor diameter 140 m, Sligo County Council Planning Reference 20/251, Leitrim County Council Planning Reference 20/120 and ACP Planning Reference 321866. Source of information: CRM report prepared by MKO in 2020.	Whooper swan, European golden plover, hen harrier, Eurasian woodcock, common kestrel, common snipe	Yes – cumulative collision risk impacts possible for these species if planning consent obtained
	Black Banks Wind Farm	19.4 km south	Operational	4 no. wind turbines hub height 105 m and rotor diameter 130 m, Leitrim County Council Planning Reference not available online.	No documents available	No - given the separation distance and number of turbines, significant cumulative impacts are very unlikely.
	Acres Wind Farm	19.5 northwest	Operational	6 no. wind turbines 72.5 m hub height and rotor diameter 103 m, Donegal County Council Planning refs 05/127, 06/20377 and 12/50968. Source of information: Environmental Report prepared by Fehily Timony in 2012.	None	None – if IOFs not recorded at both projects, cumulative impacts not possible

Development Type	Name	Distance and Direction	Status	Details	IOFs Recorded at Both Proposed Project and Other Development	Potential for Cumulative Impacts
	Moneenatieve Wind Farm	19.9 km south	Operational	2 no. turbines, hub height 95 m and rotor diameter 58 m, Leitrim County Council Planning Reference 007.	No documents available	No - given the separation distance and number of turbines, significant cumulative impacts are very unlikely.
Other	Numerous - a complete list of plans and projects included in the EIA cumulative assessment is provided in Appendix 1-6	Within 1 km	Various	Agriculture, dwelling houses, forestry operations	No documents available	No - ongoing forestry and agricultural operations have been considered as part of the project alone, and dwelling houses are not considered likely to give rise to cumulative effects on IOFs.

As set out in Table 6-25, there are five wind farms and one single turbine with the potential to have cumulative negative effects on IOFs.

Other projects within the local area are limited to agricultural and forestry operations and construction of dwelling houses. As stated above, agricultural and forestry operations form part of the baseline for the proposed project in that they are currently shaping bird populations and will continue to do so irrespective of the proposed project. They are not treated as separate cumulative projects because they constitute the established land-use regime and their associated effects are already captured within the baseline.

Dwelling houses are not considered likely to give rise to cumulative effects on IOFs due to their very small spatial footprint, the fact they do not generate collision-risk pathways and produced only highly localised disturbance levels that do not extend into the open upland and forestry habitats present at the proposed project. Therefore, they do not overlap ecologically or spatially with the impact pathways relevant to this assessment.

The likely cumulative effects are described in Sections 6.4.7.1.1 and 6.4.7.1.2 below.

6.4.7.1.1 Cumulative Disturbance / Displacement

The only wind farm project that has the potential to impact on cumulative disturbance / displacement, for breeding and foraging hen harrier, is Faughary Wind Farm. All other wind farm projects are at sufficient remove (i.e. the nearest is 6.8 km away) that cumulative disturbance / displacement effects are highly unlikely. As highlighted in Table 6-20, displacement of nesting and foraging hen harriers is possible within a certain distance of operational turbines. Therefore, there is potential that the proposed project could act in combination with Faughary wind farm to cause disturbance / displacement to hen harriers during the breeding season.

Faughary Wind Farm has been operational for the duration of the survey period for the proposed project and therefore forms part of the baseline. Surveys carried out for the proposed project over the last five years demonstrate that breeding hen harrier continue to occupy the area despite the presence of the operational Faughary Wind Farm (Section 6.3.3.1.3.1). Post-construction monitoring data for Faughary Wind Farm from 2015, 2017 and 2019 also shows continued hen harrier presence and activity in and around the Faughary Wind Farm and the proposed wind farm site

As an established operational wind farm, Faughary Wind Farm already influences hen harrier distribution. Any displacement zone associated with Faughary is an existing constraint and is fully reflected in the current patterns of bird use recorded for the proposed project. As such, birds displaced by the proposed project would not experience any additional displacement pressure arising from Faughary: its effects are already accounted for in the proposed project-alone assessment (see Table 6-20). Therefore, Faughary cannot give rise to a cumulative displacement effect when considered in combination with the proposed project.

6.4.7.1.2 Cumulative Collision Risk

Assessment of cumulative collision risk is provided in Table 6-26 below. Calculation of cumulative collision risk was only possible for species where a quantitative assessment of collision has been made for the other wind farms under consideration.

Cumulative collision risk was calculated by summing the predicted annual collision mortality outputs (after avoidance has been applied) for the proposed project with equivalent CRM

outputs from other operational, consented, and in-planning wind farms that overlap with the same bird populations following NatureScot (2025a) best-practice guidance. Each wind farm's contribution to cumulative mortality is therefore represented by its final CRM output (post-avoidance predicted annual collisions), ensuring that cumulative totals reflect consistent assumptions regarding flight activity, collision probability, turbine parameters, and species-specific avoidance rates. The summed total provides the cumulative predicted annual mortality for each species, which is then evaluated against relevant population baselines.

Table 6-26: Impact Assessment for Cumulative Collision Risk

IOF Species	Collision Risk from proposed project (collisions / year)	Other Projects With Ecological Connectivity	Collision Risk from Other Projects (collisions / year)	Cumulative Collision Risk (collisions / year)	Significance of Cumulative Collision Risk and Justification
European golden plover	0.10	Tullynamoyle Wind Farm	No quantitative estimates given – collision risk assessed as negligible	22.10	Not significant. The predicted cumulative collision mortality for European golden plover represents an estimated 0.1–4.9% increase on background mortality for the ROI and County Leitrim populations, respectively. As noted for the proposed project alone, these values are likely to be precautionary overestimates, as population figures based on I-WeBS counts inevitably under-record species that do not rely exclusively on wetland habitats. True population sizes are therefore expected to be higher than reported, which would reduce the proportional contribution of predicted turbine-related mortality. There is currently no species-specific avoidance rate for European golden plover (NatureScot, 2025f). In alignment with NatureScot (2024) best-practice guidance, where detailed avoidance data are unavailable, avoidance rates should be informed by post-construction monitoring evidence from existing wind farms. As such, while the cumulative collision estimates presented here apply the default avoidance rate of 98%, empirically derived monitoring data from four UK wind farms indicate a substantially higher avoidance rate of 99.8% for this species (Gittings, 2022). This represents the most robust and relevant dataset available and demonstrates that the default avoidance rate is likely to be overly conservative. Consequently, actual collision mortality is expected to be far lower than predicted and below a 1% increase on background mortality rates. It is also noted that only 0.1% of the cumulative total of 22.10 collisions per year is attributable to the proposed project. Furthermore, the planning application for Croagh Wind Farm is
		Tullynamoyle Wind Farm New	No quantitative estimates given – collision risk assessed as negligible		
		Ora More Wind Farm	No quantitative estimates given – assessed not significant		
		Croagh Wind Farm	22		

IOF Species	Collision Risk from proposed project (collisions / year)	Other Projects With Ecological Connectivity	Collision Risk from Other Projects (collisions / year)	Cumulative Collision Risk (collisions / year)	Significance of Cumulative Collision Risk and Justification
					currently awaiting ACP decision. If this development does not proceed, the cumulative collision risk would revert to that associated with the proposed project alone (0.1 collisions per year).
Hen harrier	0.06	Faughary Wind Farm	None recorded by post-construction monitoring surveys at Faughary	0.072	Not significant. The predicted cumulative collision mortality for hen harrier represents an estimated 0.22% increase in background mortality for the ROI population, and a 0.66–2.71% increase for the combined Leitrim, Slieve Rushen, and Cavan regional population, depending on whether adult or juvenile survival rates are applied. These percentage increases are only slightly higher than those predicted for the proposed project alone. As with the project-alone assessment, the same rationale outlined in Table 6-20 applies to the cumulative assessment: • The predicted increases remain below (ROI population) or only marginally above (the regional population) the commonly applied 1% threshold for assessing significance; • At the regional scale, the upper end of the range assumes all birds are adults, despite much lower juvenile survival; applying juvenile survival, which is appropriate given that the site supports breeding birds, reduces the predicted increase to well below 1%, indicating a non-significant effect;
		Tullynamoyle Wind Farm	No quantitative estimates given – collision risk assessed as low		
		Tullynamoyle Wind Farm New	No quantitative estimates given – assessed as low significance		
		Croagh Wind Farm	0.002		
		Ora More Wind Farm	0.01		

IOF Species	Collision Risk from proposed project (collisions / year)	Other Projects With Ecological Connectivity	Collision Risk from Other Projects (collisions / year)	Cumulative Collision Risk (collisions / year)	Significance of Cumulative Collision Risk and Justification
					• The hen harrier population is experiencing a continuing decline driven predominantly by low productivity and wider landscape pressures, rather than by wind-farm collision mortality, meaning that the cumulative project-related contribution represents only a small, non-significant fraction of existing background mortality; and • Displacement within 250 m of turbines, combined with a high avoidance rate (99%), is expected to further reduce actual exposure to collision. Taken together, these factors indicate that cumulative collision mortality is extremely small relative to the national and region population and would not result in any appreciable change to population trajectory at ROI and regional scales. The level of predicted mortality is therefore assessed as not significant and would not hinder any conservation actions undertaken for the recovery of the population. The planning application for Croagh Wind Farm is currently awaiting ACP decision. Should the application be unsuccessful, the cumulative collision risk would be less than described here.
Eurasian woodcock	0	Croagh Wind Farm	0	0	Not significant. No collisions were predicted for the proposed project, so no cumulative collision risk is possible

IOF Species	Collision Risk from proposed project (collisions / year)	Other Projects With Ecological Connectivity	Collision Risk from Other Projects (collisions / year)	Cumulative Collision Risk (collisions / year)	Significance of Cumulative Collision Risk and Justification
Common kestrel	0.34	Tullynamoyle Wind Farm New	No quantitative estimates given – assessed as being of very low significances	0.458	Not significant. The predicted cumulative collision mortality for common kestrel equates to an estimated 0.03% increase in background mortality for the ROI population. As this percentage increase is only slightly higher than that predicted for the proposed project alone, the same reasoning applies for the cumulative assessment: project-related collision mortality would remain not significant at both the national and regional scales, representing only a negligible additional contribution to overall population-level mortality. The planning application for Croagh Wind Farm is currently awaiting ACP decision. Should the application be unsuccessful, the cumulative collision risk would revert to that associated with the proposed project alone.
		Croagh Wind Farm	0.118		
		Ora More Wind Farm	No quantitative estimates given – assessed as negligible		
Common snipe	0.54	Croagh Wind Farm	0.097	0.637	Not significant. The predicted cumulative collision mortality for common snipe represents an estimated 0.14–17.5% increase in background mortality for the ROI and County Leitrim populations, respectively. As noted for the proposed project alone, these values are likely to be conservative overestimates because population figures derived from I-WeBS counts routinely under-record species that do not rely exclusively on wetlands, such as snipe. True population sizes are therefore expected to be higher than reported, meaning the proportional contribution of predicted turbine-related mortality would in reality be much lower and not significant. The planning application for Croagh Wind Farm is currently awaiting ACP decision. Should the application be unsuccessful,
		Ora More Wind Farm	No quantitative estimates given – assessed as negligible		
		Callagheen Single Turbine	No estimates given		

IOF Species	Collision Risk from proposed project (collisions / year)	Other Projects With Ecological Connectivity	Collision Risk from Other Projects (collisions / year)	Cumulative Collision Risk (collisions / year)	Significance of Cumulative Collision Risk and Justification
					the cumulative collision risk would revert to that associated with the proposed project alone.
Whooper swan	0	Croagh Wind Farm	0.220	0	Not significant. No collisions were predicted for the proposed project, so no cumulative collision risk is possible
		Ora More Wind Farm	No quantitative estimates given – assessed as negligible		

It was also concluded there were no significant negative cumulative effects on surface water-dependent and groundwater-dependent habitats in Chapter 5: Biodiversity and Chapter 8: Hydrology and Hydrogeology, which precludes the possibility of significant cumulative negative effects on IOFs that use such habitats.

6.4.7.2 GCR

A full list of other projects within 1 km of the GCR is given in Appendix 1.6 of Volume III of this EIAR. These include domestic dwellings, forest road entrances, fences, refurbishments of existing buildings and small-scale flood relief works, none of which introduce significant additional pressures on IOFs. There are no other large infrastructure projects or habitat-altering activities in proximity that would interact with the GCR works.

There are no significant effects predicted on IOFs because of the GCR alone. Based on this, alongside the lack of other projects with the potential to lead to significant cumulative effects on IOFs, no significant negative cumulative effects on IOFs because of the GCR are likely.

6.4.7.3 TDR Accommodation Areas

A full list of other developments within 1 km of the TDR accommodation areas is given in Appendix 1.6 of Volume III of this EIAR. These include solar panels on building roofs, construction of a new ESB substation, further extractions from existing quarries, creation of a telecoms support structure, roadworks, construction of agricultural sheds and construction of 91 dwelling houses and alterations to other properties.

For brevity, only those that are within 1 km of accommodations area 13, which is 20 m from Cummeen Strand SPA, and the only accommodations area at which likely significant effects are possible, have been presented below. The very minor nature of the accommodations and its location on a major

junction within Sligo town, along with the measures given in Section 6.4.4 suggests that there will be no significant effects due to the TDR alone, and therefore no potential for cumulative effects.

Table 6-27: Other Developments within 1 km of the TDR Accommodations Area 13

Development Type	Name	Distance and Direction	Status	Details	IOFs Recorded at Both proposed project and Other Development	Connectivity to proposed project and Potential for Cumulative Impacts
Energy	Sligo Regional Hospital	838 m southeast	Consented in 2019; likely completed	Development of new gas compound, new boiler house and ancillary works Sligo County Council reference 18327	N/A	No – large number of other buildings within intervening distance and TDR accommodations unlikely to take place at same time as works at hospital
	Sligo University Hospital Campus	838 m southeast	Consented in October 2025	Installation of 2,300 photovoltaic panels, Sligo County Council reference 2560353	N/A	No – large number of other buildings within intervening distance, which will provide screening, such that any cumulative disturbance effects at accommodations area 13 are very unlikely
	Markievicz House	183 m southwest	Consented 2020; likely completed	Development consisting of the construction of an LPG gas compound and four additional car park spaces, Sligo	N/A	No – large building within intervening distance and TDR accommodations unlikely to take place at same time as

Development Type	Name	Distance and Direction	Status	Details	IOFs Recorded at Both proposed project and Other Development	Connectivity to proposed project and Potential for Cumulative Impacts
				County Council reference 20199		works at Markievicz House

As set out in Table 6-27, there is no potential for significant cumulative effects on IOFs for the TDR accommodation areas.

6.4.8 Transboundary Effects

Given the proximity of the proposed project to the Northern Ireland border, approximately 3 km, a review of potential transboundary ornithological effects was undertaken to ensure that ecological pathways extending beyond the jurisdiction were fully considered. This process included an examination of relevant Northern Ireland designated nature conservation sites, such as SPAs, Ramsar Sites, and ASSIs, alongside an appraisal of potential hydrological or landscape-scale linkages that might connect the site to sensitive habitats across the border (see Table 6-11). No functional hydrological pathways or ecological corridors were identified that could give rise to likely significant effects for these designated nature conservation sites.

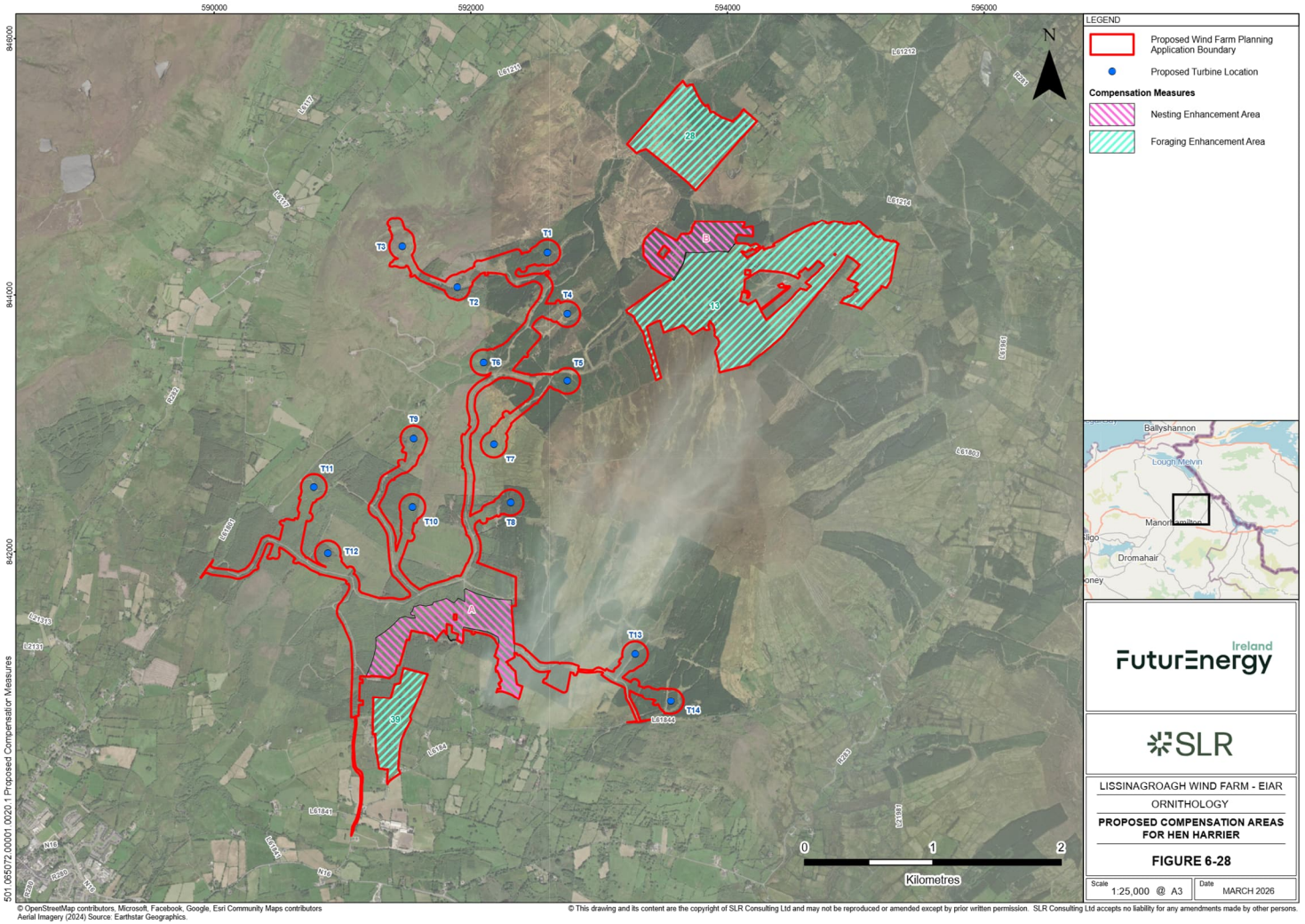
In addition, cross-border bird movements were evaluated through baseline survey and desk study data (e.g. from CEDaR; see Section 6.3.3.1.1), which did not indicate regular flight lines between the proposed project site and Northern Ireland for species that could potentially use Northern Ireland upland or wetland sites, such as European golden plover. To address potential operational effects, particularly collision risk, wind farms within Northern Ireland that lie within 20 km of the proposed project were reviewed within the cumulative assessment, with no evidence of overlapping flight activity or shared foraging ranges that would elevate cross-border collision risk.

Taken together, the assessment concludes that the proposed project is not predicted to give rise to likely significant transboundary effects on ornithological receptors in Northern Ireland, either alone or in combination with other projects.

6.4.9 Proposed Compensation Measures

Compensation has been proposed to offset a potentially significant negative effect on hen harrier, as summarised below. Mitigation for these effects is not possible, with the rationale explained further in Table 6-1 (see NPWS recommendation to follow mitigation hierarchy). The locations of the proposed measures are shown in Figure 6-28 and further details are provided in the OBMP (Appendix 6-13).

Figure 6-28: Locations of Proposed Compensation Measures



6.4.9.1 Hen Harrier

Section 6.4.5.5 concluded that the proposed project is likely to result in significant disturbance and displacement of breeding hen harrier, particularly due to the presence and operation of wind turbines. This disturbance is likely to affect both nesting and foraging hen harrier, potentially leading to the displacement of nesting birds and the effective loss of foraging habitat and a significant residual negative effect for the species is considered likely based on a precautionary approach (see Section 6.4.6).

Given the national importance of even a single breeding pair of hen harrier, a precautionary approach to compensation has been adopted, assuming the need to compensate for the potential loss of two breeding pairs and approximately 140 ha of foraging habitat.

The compensation strategy has been informed by a review of relevant scientific literature and best-practice guidance on hen harrier ecology, disturbance sensitivity and habitat requirements, together with consideration of national policy and programme learning, as outlined in the OBMP; Appendix 6-13. This includes review of the Hen Harrier Threat Response Plan (NPWS, 2024; Ruddock et al., 2024) and its recommended cross-sector actions and enabling measures (including emphasis on landowner incentives and agri-environment approaches). The strategy also drew on precedent and learning from planning processes for comparable wind farm projects where breeding hen harrier were present (a full list of sources consulted is included in the OBMP; Appendix 6-13).

The OBMP (Appendix 6-13), sets out a comprehensive strategy for the creation and long-term management of suitable nesting and foraging habitats. Two dedicated nesting enhancement areas (NEAs) will be established, comprising 18.3 ha and 35.85 ha respectively, giving a combined total of 54.15 ha. These areas have been strategically located at least 750 m from all proposed turbine locations (Goodship et al. (2022) recommend a disturbance-free buffer of up to 750 metres around nesting sites) and positioned near known nest sites to maximise the likelihood of uptake by breeding hen harrier.

The NEAs will be created from low-yield conifer plantation and will be managed to comprise of a mosaic of heath and scrub habitats. Hen harrier breeding territories in Ireland are strongly associated with heath/shrub and bog habitats, and breeding success is positively influenced by these habitats at the landscape scale (Caravaggi et al., 2019). Although pre-thicket conifer plantations are also used for nesting, the available evidence indicates that breeding success is higher in open-moorland habitats (heath/shrub and bog) than in forestry habitats, which tend to provide suitable structure only during the early pre-thicket phase (Caravaggi et al., 2019). This suggests that maintaining and restoring open habitats is likely to be more beneficial for breeding hen harriers than the rotational forestry currently present on site.

Restoration will include felling of existing forestry, hydrological enhancement, and vegetation management to create structurally diverse habitats suitable for nesting and foraging. Importantly, these NEAs will be managed directly by the developer for the full operational lifespan of the wind farm (anticipated to be 35 years), ensuring that nesting habitat provision, disturbance controls, and all restoration commitments are implemented and maintained throughout the project duration.

Evidence from elsewhere in Ireland demonstrates that hen harrier nest distribution responds to the availability of suitable nesting habitat at the landscape scale. For example, national survey analyses have shown strong selection for, and a positive relationship between nest

numbers and the extent of, suitable early-stage plantation habitats, indicating that breeding hen harrier can quickly establish nests in newly available suitable habitat where it occurs (M. Wilson et al., 2006). This responsiveness indicates that potentially suitable nesting habitat is likely to be quickly discovered and used by hen harriers, particularly if in proximity to previous nesting locations, which is the case for the proposed NEAs. As highlighted above, high quality heath and scrub habitats should be preferred by hen harrier over early-stage plantation habitat currently used for nesting at the site.

Good practice-measures to manage disturbance during the operational phase of the wind farm will be implemented (see Section 6.4.8 for further details). Forestry operations within 750 metres of NEAs for hen harrier will be restricted during the breeding season (1 March to 15 August), and recreational access will be controlled through signage, fencing, and landowner agreements. Training will be provided to contractors and landowners to ensure compliance with disturbance protocols.

In addition to nesting habitat provision, the OBMP proposes the enhancement of three folios of land totalling 164.25 ha to compensate for the predicted loss of foraging habitat. These lands are all located within 2 km of the NEAs, so are within the core foraging range of breeding hen harrier while also being located at least 450 m (most lands are >750 m) from all proposed turbine locations so are unlikely to be affected by disturbance from turbines. Enhancement measures will include *inter alia* changes to grazing regimes, rush management, hedgerow establishment and improvement, scrub development, and reduction or cessation of fertiliser application. Peatland habitats within the enhancement lands will also be restored through hydrological management, control of invasive species, and sensitive vegetation management. These measures are fully consistent with the habitat management actions promoted through national hen harrier conservation policy, including the Hen Harrier Threat Response Plan (NPWS, 2024), which emphasises targeted changes to grazing regimes, rush control, restoration of peatland hydrology, scrub development and the use of agri-environmental incentives as key mechanisms to improve foraging conditions and overall territory quality for breeding hen harriers. Comparable prescriptions formed the core of the Hen Harrier Project EIP (2017–2023), where results-based scoring demonstrated measurable improvements in prey availability and habitat structure under the same suite of management interventions (Sullivan & Monaghan, 2023).

Together with the NEAs, which will also provide suitable foraging habitat as well as nesting habitat, the total area of land enhanced for foraging hen harrier will amount to 218.4 ha, significantly exceeding the estimate of the area of lands from which they are likely to be displaced. The foraging enhancement lands located outside the NEAs will be secured through legally binding agreements with participating farmers, requiring them to implement and maintain the prescribed habitat management measures for the full operational period of the wind farm. This provides a contractual guarantee that all off-site (i.e. non-NEA) foraging compensation measures will be delivered and remain in place for as long as required.

The habitat enhancements proposed will deliver foraging conditions of higher ecological quality than much of the habitat anticipated to be lost or functionally displaced. Existing foraging areas within the wind farm site are largely characterised by commercial forestry in late pre-thicket or thicket stages, intensively grazed grassland, and areas subject to fertiliser application, all of which support lower prey densities and reduced structural heterogeneity. In contrast, the enhanced lands will be managed to increase vegetation diversity, prey abundance

and open-ground structure, attributes consistently associated with higher hen harrier foraging success in Irish upland landscapes (Caravaggi et al., 2019; M. Wilson et al., 2006). The shift from agriculturally improved or forestry-dominated habitats to sensitively managed semi-natural grassland, scrub and restored peatland therefore represents a net qualitative gain in foraging resource availability.

This approach is aligned with the policy direction of national hen harrier conservation delivery, which explicitly recognises that outcomes for hen harrier depend on supporting and incentivising landowners to manage habitat appropriately, i.e. through agri-environmental or similar schemes and enabling measures (NPWS, 2024). The Hen Harrier Project EIP (2017–2023) further demonstrates that, where farmers are supported and incentivised through results-based approaches, measurable habitat improvements can be delivered at scale, providing an evidence-backed model for habitat management as a conservation mechanism for hen harrier and associated upland biodiversity (Sullivan & Monaghan, 2023).

More generally, the use of habitat restoration and long-term management as compensation for residual ecological effects is an established principle in European nature conservation law and guidance, provided that compensatory measures are targeted, technically feasible, secured for the long term, and designed with appropriate timing and monitoring to maintain ecological coherence (European Commission, 2012, 2021; Hoorick, 2014).

The measures proposed in the OBMP represent a significant commitment to the conservation of hen harrier and are designed to deliver long-term ecological benefits that would not otherwise be realised if the proposed project did not proceed. As described in Section 6.4.2, in the absence of the proposed project, hen harrier would be dependent on the availability of pre-thicket forestry habitats, which would cycle in accordance with ongoing forestry cycles. The measures proposed in the OBMP would provide fixed nesting areas that would have guaranteed availability to breeding hen harrier over the lifespan of the proposed project. The strategy aligns with national conservation objectives and best-practice guidance, and its implementation will be secured through planning conditions and formal agreements with landowners for the operational lifespan of the wind farm, anticipated to be 35 years. As such the likelihood of success for the proposed compensatory measures is high.

It is recognised that there will be a temporal lag between the initial implementation of the proposed compensation measures and full functional delivery, as restoration ecology and conservation responses can take time to manifest. The design therefore seeks to front-load habitat works and secure long-term management to reduce 'interim losses' and improve the likelihood of timely uptake. This is consistent with European guidance, which highlights that the timing and effectiveness of compensation is critical and that higher ratios may be required where immediate functional equivalence cannot be demonstrated (European Commission, 2012, 2021). More broadly, the existence of ecological time lags is well recognised in conservation evaluation, reinforcing the need for milestones, monitoring and adaptive management to demonstrate progress towards intended outcomes (Watts et al., 2020).

With the early implementation of (i) habitat works, (ii) operational disturbance management and seasonal restrictions, and (iii) OBMP monitoring with adaptive-management triggers, no significant short-term gap before compensation benefits accrue is anticipated; these measures ensure interim effects remain not significant while compensation habitats establish. Should monitoring indicate otherwise, adaptive measures will be employed as set out in the OBMP.

Overall, taking account of the scale of habitat provision (218.4 ha enhanced relative to an estimated 140 ha foraging habitat loss), the siting and disturbance buffers, the evidence base for habitat selection and responsiveness, and the long-term security and management of the measures, and the commitment that the managed areas would provide better quality habitat than that which is present currently, the likelihood of success for the proposed compensatory measures is considered high and no likely significant effects on hen harrier remain.

6.4.10 Proposed Biodiversity Enhancements

The compensatory measures for breeding and foraging hen harrier described above will also deliver wider biodiversity enhancements across the proposed wind farm site and surrounding landscape. The creation and long-term management of structurally diverse heath and scrub mosaics within the NEAs, together with the extensive programme of foraging habitat enhancement, will generate significant ancillary benefits for a range of upland bird species. In particular, improved habitat structure, hydrological restoration and increased invertebrate availability are expected to enhance breeding and foraging conditions for IOFs such as common snipe and European golden plover, plus a variety of non-IOF upland and lowland passerines. Collectively, these measures are likely to result in a long-term, positive ecological effect at the local scale for these species.

6.4.10.1Ancillary Benefits

In addition, a suite of compensatory measures are proposed for non-avian ecological receptors, as detailed in Chapter 5 Biodiversity and OBMP Appendix 6-13. While these measures are secured as compensation for non-avian features, several measures are expected to deliver ancillary benefits for birds. These have been acknowledged for context but are not counted as formal enhancements for birds. These include:

- **Peatland enhancement and restoration** to compensate for loss of upland blanket bog and wet heath habitats. Restoration actions such as drain blocking, hydrological rewetting, and suppression of invasive species will support the recovery of peat forming vegetation, improve water retention, and enhance carbon sequestration potential. Improved peatland condition will also benefit invertebrate communities and wetland associated bird species, including important prey resources for hen harrier;
- **Marsh fritillary *Euphydryas aurinia* habitat enhancement**, including management of wet grassland to promote devil's-bit scabious *Succisa pratensis*, the larval food plant of the species. These measures will strengthen the ecological resilience of local marsh fritillary populations and improve connectivity between habitat patches at the wider landscape scale;
- **Broadleaved woodland enhancement and restoration** to compensate for loss of broadleaved woodland habitats. Woodland planting and hydrological restoration activities will help establish new woodlands, particularly of the alluvial type. This will also provide shelter and foraging resources for birds, bats and terrestrial invertebrates; and
- **Compensatory hedgerow replanting and enhancement**, improving linear habitat networks, shelter and foraging resources for birds, bats and terrestrial invertebrates. Strengthened hedgerow structure will also benefit small mammal populations, thereby supporting prey availability for raptors such as hen harrier.

Collectively, these compensatory measures will reinforce ecological functioning across the proposed wind farm site by increasing habitat heterogeneity, improving prey abundance and supporting a broad assemblage of upland and lowland bird species. They will also complement the hen harrier compensation measures by expanding the availability of high-quality foraging areas and improving ecological connectivity throughout the landscape.

6.4.11 Proposed Monitoring

Proposed monitoring has been described in detail within the OBMP (Appendix 6-13) with a summary also provided below. Monitoring reports will be shared with the Planning Authority and NPWS with adaptive mitigation implemented if monitoring identifies any significant issues. Such adaptive mitigation measures would be developed and agreed with the Planning Authority and NPWS prior to the finalisation of the BMP.

6.4.11.1Birds

Bird monitoring has been informed by NatureScot (2009) best-practice guidance and will comprise the following elements described below.

Breeding raptor surveys will be undertaken in the year prior to the proposed project becoming operational, and in years 1, 2, 3, 5 and every five years thereafter for the lifespan of the proposed project once the proposed project has become operational.

VP surveys and carcass searches will be undertaken in years 1, 2, 3, 5, 10 and 15 once the proposed project has become operational.

6.4.11.1.1 Breeding raptor surveys

Targeted breeding raptor surveys will be undertaken during the breeding season (April to August inclusive) focussing on nesting hen harrier within the proposed wind farm site using the methodology outlined in Hardey et al. (2013). This will be used to establish whether hen harriers are using the NEAs (and/or other areas within 2 km of the proposed wind farm site) for nesting as well as indicators of breeding success, such as fledging rates.

6.4.11.1.2 VP surveys

Targeted VP surveys will be undertaken to assess hen harrier usage of the proposed wind farm site and foraging enhancement lands in the breeding season (April to August inclusive) using the methodology outlined in NatureScot (2025d) guidance. This will involve six hours of survey per vantage point per month with vantage point viewsheds covering the proposed wind farm site plus enhancement lands.

6.4.11.1.3 Carcass searches

Carcass searches will be undertaken at least once a month around each turbine location during the breeding season (April to August inclusive). These surveys will be carried out by qualified ecologists, and the searches may either be human- or dog-led. Methods to correct for biases in searcher efficiency and scavenger removal of carcasses will be included as part of these searches.

6.4.11.2Habitats

Habitat surveys in the NEAs will be undertaken once every year for the first four years post-felling of conifer plantation until heather and scrub mosaic habitats have been established and then once every five years thereafter for the lifespan of the proposed project. Surveys will

assess vegetation condition, fire risk and overall suitability for nesting hen harrier. Scoring criteria will be developed using resources available from schemes such as the Irish Hen Harrier Project (The Hen Harrier Project Ltd, 2025).

6.4.11.2.1 Compliance with Measures Set out in OBMP

Compliance checks with farm plans will be undertaken every year for the lifespan of the proposed project and would comprise of two visits a year for the first three years of monitoring by specialist surveyors (formal team inspections), and once every year thereafter with self-reporting every year and formal project team inspections every three years to verify the self-reporting. This would involve monitoring of vegetation and habitats against agreed criteria, which will be developed using resources available from schemes such as the Irish Hen Harrier Project (The Hen Harrier Project Ltd, 2025).

6.4.12 Summary of Effects

A summary of likely significant effects, proposed mitigation, residual effects and, where relevant, proposed compensation measures is provided for each IOF included in the assessment in Table 6-28, along with a summary of proposed biodiversity enhancements that are relevant to ornithology.

Table 6-28: Summary of Likely Significant Effects, Mitigation, Residual Effects & Proposed Compensation Measures for IOFs

Ecological Feature	Potential Impacts Leading to Likely Significant Effects	Proposed Mitigation (including embedded and secondary mitigation measures)	Means of Delivering Mitigation	Proposed Compensation	Means of Delivering Proposed Compensation	Residual Effects	Proposed Enhancements	Means of Delivering Proposed Enhancement
Common kestrel	• Construction nest damage / destruction	• Confirmatory pre-construction surveys and exclusion zones • Timing of works to avoid breeding season	• Implemented through CEMP • ECoW oversight • Planning condition	• None required – effects fully mitigated	• N/A	• Not significant after mitigation	• Hen harrier NEA and foraging land enhancement and as part of hen harrier compensation measures – may indirectly increase prey populations for kestrel	• Long-term management secured for 35 years via Farm Plans • Legal agreement with landowners
	• Construction habitat loss	• None	• N/A	• None	• N/A	• Not significant		
	• Construction disturbance / displacement	• Confirmatory pre-construction surveys and exclusion zones • Timing of works to avoid breeding season	• Implemented through CEMP • ECoW oversight • Planning condition	• None required – effects fully mitigated	• N/A	• Not significant after mitigation		
	• Operational barrier effect	• None	• N/A	• None	• N/A	• Not significant		
	• Operational disturbance / displacement	• None	• N/A	• None	• N/A	• Not significant		
	• Operational collision	• Precautionary common kestrel mitigation: reduction in prey habitat suitability surrounding turbines	• Ongoing monitoring delivered in Years 1, 2, 3, 5, and every 5 years thereafter as specified in the EIAR monitoring programme to be in the detailed BMP • Planning condition	• None required	• N/A	• Not significant		
Hen harrier (breeding season) and	• Construction nest damage / destruction	• Confirmatory pre-construction surveys and exclusion zones	• Implemented through CEMP • ECoW oversight • Planning condition	• None required – effects fully mitigated	• N/A	• Not significant after mitigation	• N/A	• N/A

Ecological Feature	Potential Impacts Leading to Likely Significant Effects	Proposed Mitigation (including embedded and secondary mitigation measures)	Means of Delivering Mitigation	Proposed Compensation	Means of Delivering Proposed Compensation	Residual Effects	Proposed Enhancements	Means of Delivering Proposed Enhancement
Leitrim Uplands Non-Designated Important Breeding Area for hen harrier		• Timing of works to avoid breeding season						
	• Construction habitat loss	• None	• N/A	• None	• N/A	• Not significant		
	• Construction disturbance / displacement	• Confirmatory pre-construction surveys and exclusion zones • Timing of works to avoid breeding season • 1,000 m forestry-felling buffers and 750 m buffer for non-forestry works around active hen harrier nests	• Implemented through CEMP • ECoW oversight • Planning condition	• None required – effects fully mitigated	• N/A	• Not significant after mitigation		
	• Operational barrier effect	• None	• N/A	• None	• N/A	• Not significant		
	• Operational disturbance / displacement leading to loss of up to c.140 ha of foraging habitat and risk of displacement of up to 2 breeding pairs within Leitrim Uplands Non-Designated Important Breeding Area	• 750 m turbine buffers around NEAs	• Mitigation by design	• 54.15 ha NEAs • 164.25 ha foraging enhancement areas • Total 218.4 ha managed long-term	• Long-term management secured for 35 years via Farm Plans • Delivery to be set out in detailed BMP • Monitoring over full operational period including compliance checks with Farm Plans and habitat and bird surveys	• Residual effect after mitigation and compensation is not significant		

Ecological Feature	Potential Impacts Leading to Likely Significant Effects	Proposed Mitigation (including embedded and secondary mitigation measures)	Means of Delivering Mitigation	Proposed Compensation	Means of Delivering Proposed Compensation	Residual Effects	Proposed Enhancements	Means of Delivering Proposed Enhancement
					• Monitoring reports submitted to Planning Authority and NPWS • Planning condition			
	• Operational collision	• None	• Ongoing monitoring delivered in Years 1, 2, 3, 5, and every 5 years thereafter as specified in the EIAR monitoring programme • Planning condition	• None required – effects fully mitigated	• N/A	• Not significant after mitigation		
White-tailed eagle	• Construction nest damage / destruction	• Confirmatory pre-construction surveys and exclusion zones • Timing of works to avoid breeding season	• Implemented through CEMP • ECoW oversight • Planning condition	• None required – effects fully mitigated	• N/A	• Not significant after mitigation	• None	• N/A
	• Construction habitat loss	• None	• N/A	• None	• N/A	• Not significant		
	• Construction disturbance / displacement	• Pre-construction surveys and exclusion zones • Timing of works to avoid breeding season	• Implemented through CEMP • ECoW oversight • Planning condition	• None required – effects fully mitigated	• N/A	• Not significant after mitigation		
	• Operational barrier effect	• None	• N/A	• None	• N/A	• Not significant		
	• Operational disturbance / displacement	• None	• N/A	• None	• N/A	• Not significant		

Ecological Feature	Potential Impacts Leading to Likely Significant Effects	Proposed Mitigation (including embedded and secondary mitigation measures)	Means of Delivering Mitigation	Proposed Compensation	Means of Delivering Proposed Compensation	Residual Effects	Proposed Enhancements	Means of Delivering Proposed Enhancement
	• Operational collision	• Precautionary white-tailed eagle mitigation: prompt carcass removal.	• Ongoing monitoring delivered in Years 1, 2, 3, 5, and every 5 years thereafter as specified in the EIAR monitoring programme • Planning condition)	• None required - effects fully mitigated	• N/A	• Not significant after mitigation		
Cummeen Strand SPA (TDR accommodations area 13)	• Construction temporary disturbance to wintering / migratory SCI waterbirds and waders	• Pre-works bird checks • Exclusion zones if active nests found • Standard noise, pollution and traffic controls	• Implemented through CEMP • Planning condition	• None required – effects fully mitigated	• N/A	• Not significant after mitigation	• None	• N/A
	• Construction pollution to downstream wetland habitats	• Embedded mitigation to prevent pollution and sedimentation	• Implemented through CEMP • Planning condition	None required – effects fully mitigated	• N/A	• Not significant after mitigation		
All other IOFs and designated sites (grouped) i.e. common snipe, Eurasian woodcock, European golden plover, lesser black-backed gull and whooper swan.	• Construction nest damage / destruction	• Confirmatory pre-construction surveys and exclusion zones • Timing of works to avoid breeding season	• Implemented through CEMP • ECoW oversight • Planning condition	• None required – effects fully mitigated	• N/A	• Not significant after mitigation	• Hen harrier NEAs and foraging habitat compensation measures – will enhance habitat for upland IOFs such as common snipe and European golden plover, as well as other non-IOFs	• Long-term management secured for 35-40 years via Farm Plans • Delivery to be set out in detailed BMP • Legal agreements with landowners
	• Construction habitat loss	• None	• N/A	• None	• N/A	• Not significant		
	• Construction disturbance / displacement	• Confirmatory pre-construction surveys and exclusion zones • Timing of works to avoid breeding season	• Implemented through CEMP • ECoW oversight • Planning condition	• None required – effects fully mitigated	• N/A	• Not significant after mitigation		

Ecological Feature	Potential Impacts Leading to Likely Significant Effects	Proposed Mitigation (including embedded and secondary mitigation measures)	Means of Delivering Mitigation	Proposed Compensation	Means of Delivering Proposed Compensation	Residual Effects	Proposed Enhancements	Means of Delivering Proposed Enhancement
	• Construction pollution to downstream wetland habitats	• Embedded mitigation to prevent pollution and sedimentation	• Implemented through CEMP • Planning condition	• None required – effects fully mitigated	• N/A	• Not significant after mitigation		
	• Operational barrier effect	• None	• N/A	• None	• N/A	• Not significant		
	• Operational disturbance / displacement	• None	• N/A	• None	• N/A	• Not significant		
	• Operational collision	• None.	• Ongoing monitoring delivered in Years 1, 2, 3, 5, and every 5 years thereafter as specified in the EIAR monitoring programme to be in the detailed BMP • Planning condition	• None required – effects fully mitigated	• N/A	• Not significant after mitigation		

6.5 CONCLUSION

This assessment has considered the likely significant effects of the proposed project, including the GCR and TDR, on IOFs consistent with the EU Birds Directive, the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended), the Wildlife Acts 1976–2021, and recognised best-practice guidance for Ecological Impact Assessment and wind farm ornithology.

A robust baseline dataset was established from multi-year surveys (2020–2025) supported by earlier contextual data. Following scoping and evaluation, detailed assessment focused on those IOFs with likelihood for significant effects.

With embedded mitigation and good practice measures applied including turbine siting, seasonal timing of works, confirmatory pre-construction checks, disturbance-free buffers, pollution prevention measures, precautionary mitigation to reduce collision risk, operational monitoring and a compensation package for hen harrier, the proposed project is predicted to give rise to no significant residual effects on all assessed IOFs.

A comprehensive compensation package, including the management of 54.15 ha of nesting enhancement areas and 218.4 ha of foraging habitat enhancement (including any NEAs that double-up as foraging lands), in place for the full operational life of the proposed project, has been designed to offset any potential effects relating to possible displacement of nesting hen harrier and a reduction in functional foraging habitat. This package will support hen harrier breeding productivity within the Leitrim Uplands non-designated important breeding area.

Cumulative and transboundary assessments conclude that no significant cumulative or transboundary effects are expected. A structured post-construction monitoring programme will be implemented to monitor the effectiveness of the mitigation measures.

In summary, subject to the implementation of all embedded and additional mitigation, monitoring, and the committed compensation measures, the proposed project is not predicted to result in any significant adverse residual effects on ornithological receptors at the population levels relevant to the EIAR.

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