Planning and Environmental Consultants

Environmental Impact Assessment Report (EIAR)

Proposed Slievegrine Renewable Energy Development, Co. Waterford

Chapter 6 - Biodiversity



6. BIODIVERSITY

6.1 Introduction

This chapter assesses the likely significant effects (both alone and cumulatively with other projects) that the Proposed Project may have on Biodiversity, excluding birds. An assessment of the likely significant effects on Ornithology is provided in Chapter 7 of this EIAR. Mitigation by design was applied to the finalised Proposed Project layout wherever possible to avoid impacts on Biodiversity. This chapter sets out the mitigation measures proposed to avoid, reduce or offset any potential significant effects that are identified. The residual impacts on biodiversity are then assessed. Particular attention has been paid to species and habitats of ecological importance. These include species and habitats with national and international protection under the Wildlife Acts 1976 (as amended), EU Habitats Directive 92/43/EEC. Impacts on avian receptors are considered in Chapter 7 of this EIAR. The full description of the Proposed Project is provided in Chapter 4 of this EIAR.

The chapter is structured as follows:

- The Introduction provides a description of the legislation, guidance and policy context applicable to Biodiversity.
- This is followed by a comprehensive description of the ecological survey and impact assessment Methodology that were followed to inform the robust assessment of likely significant effects on ecological receptors.
- A description of the Baseline Ecological Conditions and Receptor Valuation is then provided.
- This is followed by an Assessment of Effects which are described with regard to each phase of the Proposed Project: construction phase, operational phase and decommissioning phase. Potential Cumulative Impacts in combination with other projects are fully assessed.
- Proposed Mitigation and Best Practice Measures to avoid, reduce or offset the identified effects are described and discussed. This is followed by an assessment of residual effects taking into consideration the effect of the proposed mitigation and best practice measures.
- The Conclusion provides a summary statement on the overall significance of predicted effects on Biodiversity.

The Proposed Project will be known as the 'Slievegrine Renewable Energy Development'.

As detailed in Section 1.1.1 of Chapter 1, for the purposes of this EIAR, the following references are used: 'Proposed Project', 'Proposed Wind Farm' 'Proposed Grid Connection', 'Proposed Turbines', 'Proposed 110kV Underground Cabling Route', 'Proposed 110kV Substation', 'Proposed 220kV Loop-in Substation', Proposed Wind Farm site', 'Proposed Grid Connection site' and 'Site'. A detailed description of the Proposed Project is provided in Chapter 4 of this EIAR.

6.1.1 Requirements for Ecological Impact Assessment

National Legislation

The Wildlife Act, 1976 (as amended), is the principal piece of legislation governing protection of wildlife in Ireland. The Wildlife Act provides strict protection for species of conservation value. The Wildlife Act conserves wildlife (including game) and protects certain wild animals and flora. These species are therefore considered in this chapter as ecological receptors.

Natural Heritage Areas (NHAs) and Proposed Natural Heritage Areas (pNHAs) are heritage sites that are designated for the protection of flora, fauna, habitats and geological sites. Only NHAs are

designated under the Wildlife (Amendment) Act 2017. NHAs are legally protected from damage from the date they are formally proposed for designation[1]. A list of pNHAs were published on a non-statutory basis in 1995 but have not since been statutorily proposed or designated. However, these sites are considered to be of significance for wildlife and habitats as they may form statutory designated sites in the future.

The Flora (Protection) Order 2022 (S.I. No. 235) lists the species, hybrids and/or subspecies of flora protected under Section 21 of the Wildlife Acts. It provides protection to a wide variety of protected plant species in Ireland including vascular plants, mosses, liverworts, lichens and stoneworts. Under the Flora Protection Order it is illegal to cut, pick, collect, uproot or damage, injure or destroy species listed or their flowers, fruits, seeds or spores or wilfully damage, alter, destroy or interfere with their habitat (unless under licence).

National Policy

Irelands 4th National Biodiversity Action Plan 2023-2030 (Department of Housing, Local Government and Heritage, 2024) (the "**NBAP**"). The NBAP strives for a "whole of government, whole of society" approach to the governance and conservation of biodiversity. It demonstrates Ireland's continuing commitment to meeting and acting on its obligations to protect Ireland's biodiversity for the benefit of future generations and will implement this through a number of key targets, actions and objectives.

The Wildlife (Amendment) Act 2023 introduced a new public sector duty on biodiversity. The legislation provides that every public body, as listed in the Act, is obliged to have regard to the objectives and targets in the NBAP. The NBAP sets out five key objectives as follows:

- **Objective 1: Adopt a Whole-of Government, Whole of-Society Approach to Biodiversity.** Proposed actions include capacity and resource reviews across Government; determining responsibilities for the expanding biodiversity agenda providing support for communities, citizen scientists and business; and mechanisms for the governance and review of this National Biodiversity Action Plan.
- **Objective 2: Meet Urgent Conservation and Restoration Needs.** Supporting actions will build on existing conservation measures. Efforts to tackle Invasive Alien Species will be elevated. The protected area network will be expanded to include the Marine Protected Areas. The ambition of the EU Biodiversity Strategy will be considered as part of an evolving work programme across Government.
- **Objective 3: Secure Nature's Contribution to People.** Actions highlight the relationship between nature and people in Ireland. These include recognising the tangible and intangible values of biodiversity, promoting nature's importance to our culture and heritage and recognising how biodiversity supports our society and our economy.
- **Objective 4: Enhance the Evidence Base for Action on Biodiversity.** This objective focuses on biodiversity research needs, as well as the development and strengthening of long-term monitoring programmes that will underpin and strengthen future decision-making. Action will also focus on collaboration to advance ecosystem accounting that will contribute towards natural capital accounts.
- **Objective 5: Strengthen Ireland's Contribution to International Biodiversity Initiatives.** Collaboration with other countries and across the island of Ireland will play a key role in the realisation of this Objective. Ireland will strengthen its contribution to international biodiversity initiatives and international governance processes, such as the United Nations Convention on Biological Diversity.

[1] https://www.npws.ie/protected-sites/nha(accessed January 2024).

In addition, the National Biodiversity Data Centre published guidance on Pollinator-friendly management of Wind Farms[2]. This identifies an evidence-based action plan for wind farm operators that can help pollinators by employing changes to existing management strategies.

Such policies have informed the evaluation of ecological receptors recorded within the Site and the ecological assessment process. Pollinator friendly measures have been incorporated into the Proposed Project and these are detailed within the Biodiversity Mitigation and Enhancement Plan (BMEP) (see Appendix 6-4).

European Legislation

Habitats and species of European importance are provided legal protection under the EU Habitats Directive 92/43/EEC (the Habitats Directive) and the EU Birds Directive 2009/147/EC (the Birds Directive) this legislation forms the cornerstone of Europe's nature conservation within the EU. It is built around two pillars: the Natura 2000 network of protected sites (hereafter referred to as European sites[3]) and the strict system of species protection. Both the Habitats and Bird Directives have been transposed into Irish law by Part XAB of the Planning and Development Acts 2000 (as amended) (from a land use planning perspective) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/2011).

Annex I of the Habitats Directive lists habitat types whose conservation requires the designation of Special Areas of Conservation (SAC). Priority habitats, such as Turloughs, which are in danger of disappearing within the EU territory are also listed in Annex I. Annex II of the Directive lists animal and plant species (e.g. marsh fritillary, Atlantic salmon, and Killarney fern) whose conservation also requires the designation of SAC. Annex IV lists animal and plant species in need of strict protection such as lesser horseshoe bat and otter, and Annex V lists animal and plant species whose taking in the wild and exploitation may be subject to management measures. In Ireland, species listed under Annex V include Irish hare, common frog and pine marten. Species can be listed in more than one Annex, as is the case with otter and lesser horseshoe bat which are listed on both Annex II and Annex IV. The disturbance of species under Article 12 of the Habitats Directive (and in particular avoidance of deliberate disturbance of Annex IV species, particularly during the period of breeding, rearing, hibernation and migration and avoidance of deterioration or destruction of breeding sites or resting places) has been specifically assessed in this EIAR.

The Birds Directive instructs Member States to take measures to maintain populations of all bird species naturally occurring in the wild state in the EU (Article 2). According to Recital 1 of the Birds Directive, Council Directive 79/409/EEC on the conservation of wild birds was substantially amended several times and in the interests of clarity and rationality, the Birds Directive codifies Council Directive 79/409/EEC. Such measures may include the maintenance and/or re-establishment of habitats in order to sustain these bird populations (Article 3). A subset of bird species has been identified in the Directive and are listed in Annex I as requiring special conservation measures in relation to their habitats. These species have been listed on account of inter alia: their risk of extinction; vulnerability to specific changes in their habitat; and/or due to their relatively small population size or restricted distribution. Special Protection Areas (SPAs) are to be identified and classified for these Annex I listed species and for regularly occurring migratory species, paying particular attention to the protection of wetlands (Article 4).

In summary, the species and habitats provided National and International protection under these legislative and policy documents have been considered in this Ecological Impact Assessment. A detailed assessment of the likelihood of the Proposed Project having either a significant effect or an

[2] https://pollinators.ie/wp-content/uploads/2022/12/Wind-Farm-Pollinator-Guidelines-2022-WEB.pdf *(accessed September 2026).*
[3] *The term Natura 2000 network was replaced by 'European site' under the EU (Environmental Impact Assessment and Habitats) Regulations 2011 S.I. No. 473 of 2011.*

adverse impact on any relevant European Sites (i.e. SACs, cSACs[4], SPAs or cSPAs) has been carried out in the Appropriate Assessment (AA) Screening Report and Natura Impact Statement (NIS) which accompanies this planning application along with this EIAR. A separate assessment has not been carried out in this chapter, to avoid duplication of assessments. However, the relevant conclusions have been cross-referenced and incorporated.

In addition to the above, the following legislation applies with respect to habitats, fauna, invasive species and water quality in Ireland and has been considered in the preparation of this chapter:

- The International Convention on Wetlands of International Importance especially Waterfowl Habitat (Concluded at Ramsar, Iran on 2 February 1971)
- S.I. No. 272 of 2009: European Communities Environmental Objectives (Surface Waters) Regulations 2009 and S.I. No. 722 of 2003 European Communities (Water Policy) Regulations 2003 which give further effect to EU Water Framework Directive (2000/60/EC).
- The following legislation applies with respect to non-native species - Regulation 49 and 50 of European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011).

6.1.2 Review of Relevant Guidance and Sources of Consultation

The assessment methodology is based primarily upon the Transport Infrastructure Ireland (TII) (formerly the National Road Authority) *Guidelines for Assessment of Ecological Impacts of National Road Schemes Rev 2* (TII, 2009a) and the survey methodology is based on the TII *Guidelines on Ecological Surveying Techniques for Protected Flora and Fauna on National Road Schemes* (TII, 2009b). Although these survey methodologies relate to road schemes, these standard guidelines are recognised survey methodologies that ensure good practice regardless of the development type.

In addition, the following guidelines were consulted in the preparation of this document to provide the scope, structure and content of the assessment:

- Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater and Coastal (CIEEM, 2018).

This assessment has been carried out in accordance with the Environmental Impact Assessment guidance as outlined in Chapter 1, Section 1.2.1, of the EIAR.

This assessment has been prepared with respect to the various planning policies and strategy guidance documents listed below:

- Waterford City & County Development Plan 2022–2028
- Regional Spatial and Economic Strategy for the Southern Region.
- National Planning Framework. Ireland 2040 Our Plan.
- National Development Plan 2021-2030.

6.1.3 Statement of Authority

This EIAR chapter has been prepared by Julie Kohlstruck (BSC., MSc.), Julie has over 5 years' experience in ecological consultancy. Julie has broad ecological field skills including habitat surveys,

[4] *Candidate SAC (cSAC) are afforded the same protection as SACs. The process of making cSAC into SACs by means of Statutory instrument has begun and while the process if ongoing the term SAC will be used to conform with nomenclature used in the National Parks and Wildlife Services (NPWS) databased. The name applies to candidate SPAs.*

invasive species surveys, rare plant surveys, Annex 1 habitat assessments, mammal surveys, and bird surveys. Julie has strong technical reporting skills, with experience preparing ecological reports including Appropriate Assessment Screening Reports, Natura Impact Statements, Biodiversity Management and Enhancement Plans, Ecological Impact Assessments and biodiversity chapters of Environmental Impact Assessment Reports for a wide range of projects, including several renewable energy projects.

This EIAR chapter has been reviewed by Rachel Walsh (B.Sc., MCIEEM) of MKO. Rachel is a Senior Ecologist with over six years' experience in ecological consultancy and a full member of the Chartered Institute of Ecology and Environmental Management. Rachel has extensive experience in writing and review of Appropriate Assessment reporting, Ecological Impact Assessment and EIA inputs, and has worked widely on large scale renewable energy infrastructure projects, wastewater infrastructure projects, transport infrastructure, extractive industry and residential projects.

The ecology team at MKO is also supported by Pat Roberts. Pat Roberts is Principal Ecologist with MKO with over 20 years post graduate experience in providing ecological services in relation to a wide range of developments including renewable energy. Pat holds B.Sc. (Hons) in Environmental Science. He is currently responsible for staff development, training and ensuring that the outputs from the ecology team are of a high standard and meet the requirements of relevant legislation and guidelines. He is a full member of the Chartered Institute of Ecologists and Environmental Managers (CIEEM). Pat sits on the Irish Policy Group of the CIEEM and reviews and comments on Irish and European Policy and legislation in this capacity. He is also an assessor for CIEEM membership applications.

The baseline ecological surveys were conducted by MKO ecologists Colin Murphy (BSc., MSc.), David Mesarkick (BSc), Ciara Hackett (BSc), Nora Szijarto (BSC., MSc.), Niamh Rowan (BSc.) and Emily Fair (BSc., MSc.). All surveyors have relevant academic qualifications and are competent in undertaking habitat and ecological assessments. Bat survey scope development and project management was overseen by Aoife Joyce (BSc., MSc.).

6.2 Methodology

The following sections describe the methodologies followed to establish the baseline ecological condition of the Site and surrounding area. Assessing the impacts of any project and associated activities requires an understanding of the ecological baseline conditions prior to and at the time of the project proceeding. Ecological baseline conditions are those existing in the absence of proposed activities (CIEEM, 2018).

6.2.1 Desk Study

The desk study undertaken for this assessment included a thorough review of available ecological data including the following:

- Review of NPWS Article 17 habitat and species mapping.
- Review of most up to date NPWS Article 17 Reports (2025).[5]
- Review of online web-mappers: National Parks and Wildlife Service (NPWS)[6], EPA maps[7], Water Framework Directive (WFD) and Inland Fisheries Ireland (IFI)[8].
- Inland Fisheries Ireland (IFI) Reports.
- Review of supporting documentation for European designated sites and nationally designated sites.
- Data on potential occurrence of rare plant and bryophytes – as per NPWS online map viewers; Flora Protection Order 2022 Map Viewer[9].
- Desk sources reviewed in relation to data on bat species in the area are included in **Appendix 6-2**.
- Review of the publicly available National Biodiversity Data Centre (NBDC) web-mapper.
- Review of relevant Plans, including the National Biodiversity Action Plan (NBAP) 2023-2030 and the All-Ireland Pollinator Plan 2026-2030.
- Review of specially requested records from the NPWS Rare and Protected Species Database for the hectads in which the Proposed Project is located.
- Potential for in-combination effects have been considered in Chapter 2 of this EIAR and Section 6.5 of this Chapter. This was informed by a review of the EIARs/NISs prepared for other plans and projects occurring in the wider area.

6.2.1.1 Designated Sites

6.2.1.1.1 *Identification of the Designated Sites within the Likely Zone of Influence (ZOI) of the Proposed Project*

The potential for the Proposed Project to impact on sites that are designated for nature conservation was considered in this chapter.

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are designated under the EU Habitats Directive and EU Birds Directive, respectively and are collectively known as 'European sites'. The potential for significant effects and/or adverse impacts on the integrity of European sites is fully assessed in the AA Screening Report and Natura Impact Statement that accompanies this application. As per EPA, 2022, *"a biodiversity section of an EIAR, should not repeat the detailed*

[5] https://www.npws.ie/sites/default/files/publications/pdf/article-17-report-2025-volume-1.pdf *Accessed: 07/08/2026*
[6] NPWS Designations Viewer - Experience Builder *Accessed: 07/08/2026*
[7] EPA Maps *Accessed: 07/08/2026*
[8] https://opendata-ifigeo.hub.arcgis.com/search?layout=grid&type=Web%2520Map%2CWeb%2520Experience%2CDashboard *Accessed: 07/08/2026*
[9] https://heritagedata.maps.arcgis.com/apps/webappviewer/index.html?id=a41ef4e10227499d8de17a8abe42bd1e *Accessed: 07/08/2026*

assessment of potential effects on European sites contained in a Natura Impact Statement" but should *"incorporate their key findings as available and appropriate"*. Section 6.4.5.1below, provides a summary of the key assessment findings with regard to European sites.

Natural Heritage Areas (NHAs) are designated under Section 18 the Wildlife (Amendment) Act 2000 and their management and protection is provided for by this legislation and planning policy. The potential for effects on these designated sites is fully considered in this chapter.

Proposed Natural Heritage Areas (pNHAs) were designated on a non-statutory basis in 1995 but have not since been statutorily proposed or designated. However, the potential for effects on these designated sites is fully considered in this chapter.

The following methodology was used to establish which sites, designated for nature conservation, that have the potential to be impacted by the Proposed Project:

- All designated sites within the vicinity of the were identified. In addition, the potential for connectivity with designated sites at greater distances from the Site was also considered.
- The qualifying features of these sites, as per the NPWS website (www.npws.ie), were consulted and reviewed at the time of preparing this chapter.
- Where potential pathways for Significant Effect are identified, the site is included within the Likely Zone of Influence (ZoI) and further assessment is required.

6.2.2 Scoping and Consultation

MKO undertook a scoping exercise during preparation of this EIAR, as described in Chapter 2, Section 2.7 of this EIAR.

Copies of all scoping responses are included in Appendix 2-1 of this EIAR. The recommendations of the consultees have informed the EIAR preparation process and the contents of this chapter. Table 6-1 provides a list of the organisations consulted with regard to biodiversity during the scoping process, and notes where scoping responses were received.

Table 6-1 Organisations consulted with regard to biodiversity.

Consultee	Date of Response	Details of Response
Department of Agriculture, Food and the Marine (DAFM)	-	No response received to date
An Taisce	-	No response received to date
Bat Conservation Ireland	-	No response received to date
Birdwatch Ireland	-	No response received to date
Waterford County Council Environment Department	02/07/2025	An acknowledgement of the request was received, however, no comments on the scope of the EIAR have been received.
Inland Fisheries Ireland	-	No response received to date

Department of Housing, Local Government and Heritage (Development Applications Unit)	10th of October 2025	A detailed response was received from the Department in relation to archaeology. Two meetings were held by MKO with the National Parks and Wildlife Service (NPWS) in relation to biodiversity, which are detailed in section 6.2.2.1 below.

6.2.2.1 Consultation with National Parks and Wildlife Service

Members of the project team, including Environmental Scientists, Ecologists and Ornithologists met with representatives of the National Parks and Wildlife Service (NPWS) on the 22nd of January 2026 and the 14th of July 2026 to discuss the Proposed Project. The main topics discussed in the meeting included the following:

- An overview of the Proposed Project.
- Ecological surveys which have been undertaken to date and their findings.
- Ornithological surveys which have been undertaken to date and their findings.
- The Key Ecological Receptors identified at the Site.
- Proposed plans for habitat enhancement and management measures.
- Proposed drainage and construction management measures for the protection of water quality and aquatic habitats and species.

The outcome of the meeting included the following feedback and recommendations from the NPWS detailed in the sections below. Please note, that the ornithological matters discussed at the meeting are addressed in Chapter 7, while hydrological and hydrogeological topics are addressed in Chapter 9.

Table 6-2 NPWS Meetings and Consultation

Meeting Date	Topics	Section of EIAR where this is addressed
22nd of January 2026	**Freshwater pearl mussel (FPM)** The NPWS stated that FPM will be a key species for assessment and request a salmonid suitability survey and lamprey at tributaries within the site. Springs, seepages and flushes should be assessed and mapped in particular around the River Licky, including smaller spring habitats beneath the forestry canopy. Wetland features within forestry should be included in the EIAR/ NIS, as they can be important for FPM. A risk characterisation should be undertaken for the site in terms of sedimentation and nutrient pollution within the site using EPA Pollution Impact Potential (PIP) maps, as glade soils with flow paths going through them are susceptible to sedimentation. This could be used for identifying construction mitigation measures as well as highlighting areas where best to avoid spoil management. NPWS recommends an ECoW to be contracted by the developer and site-specific triggers to be identified in advance, as well as the use of turbidity monitoring sondes with specific triggers.	Assessment of impacts on springs, seepages and flushes is provided in Chapter 9. Site-specific mitigation for water quality is provided in Chapter 9 as well as the FPM Management Plan in Appendix 6-6
	Riparian planting The NPWS encourages planting of riparian areas with cognisance of PIP mapping, and sedimentation studies. Springs, seepages and flushes should be avoided in replanting areas. The fencing off of watercourses to avoid impacts through agriculture is encouraged.	Proposed planting measures and fencing measures are outlined in the BMEP (Appendix 6-4)

14th of July 2026	**Riparian planting** Following recommendations from the first NPWS meeting, the site selected for riparian planting was selected following a PIP assessment of the Site. The selection was discussed with NPWS and it was noted to assess the area for species rich grassland which would be unsuitable for planting. In relation to tree planting, it was noted that, while 3m x 3m planting and allowing the ground floor to colonise is good in principle, the grassland may be fertile which will encourage bramble growth, therefore 2m x 2m or 1.5m x 1.5m may be more appropriate. NPWS recommended mechanical measures or spot spraying to manage bramble encroachment in the replanting area.	An assessment of the existing habitat to IVC level is presented in the Botanical report in Appendix 6-1. Planting measures are outlined in the BMEP in Appendix 6-4.
	Hedgerow planting NPWS recommended the installation of stock proof fencing to protect the proposed hedgerow planting. Fences should be installed at least 1m from the hedging. NPWS recommended fencing of watercourses as an enhancement measure to prevent livestock poaching. Water pumps may be required if livestock are reliant on the river for water supply.	Planting measures are outlined in the BMEP in Appendix 6-4.
	Freshwater Pearl Mussel NPWS noted that Siltbuster should not be used with chemical dosing, in particular near the Licky River as this can change pH of the river. NPWS referred to the guidance document from Evelyn Moorkens, NPWS, on FPM. In high risk areas for FPM, there should be a list of triggers established when the construction works commence. This shouldn't just be seasonal as the weather can be unpredictable. Triggers should be specific to the site which is overseen by the ECoW who is working for the developer and not the contractor. Contingency measures should also be identified, and a threshold figure should also be identified in relation to turbidity monitoring.	Flocculate mechanisms for silt, in consultation with labs on use of chemicals which are best suited are applied and detailed in Chapter 9 Hydrology, as well as other site-specific mitigation and monitoring (Freshwater Pearl Mussel Management Plan, Appendix 6-6)

6.2.3 Field Survey Methodologies

A comprehensive survey of the biodiversity within the Site was undertaken to inform this chapter of the EIAR. The following sections fully describe the ecological surveys that have been undertaken within the Site and provide details of the methodologies and guidance followed. Surveys were carried out between November 2024 and May 2026 and are summarised in Table 6-3 below.

Table 6-3 Ecology Surveys Informing the EIAR

Survey Type	Dates	EIAR Chapter Section/Appendix
Multi-disciplinary walkover surveys	• 19th November 2024 • 5th December 2024 • 14th January 2025 • 23rd January 2025 • 27th August 2025 • 28th August 2025 • 5th May 2026 • 6th May 2026 • 7th May 2026	Results found in Section 6.3.2
Detailed Botanical Surveys – Irish Vegetation Classification (IVC)	• 27th August 2025 • 28th August 2025 • 5th May 2026 • 6th May 2026 • 7th May 2026	Appendix 6-1 Botanical Study
Proposed Grid Connection	• 27th August 2025 • 28th August 2025 • 5th May 2026	Results found in 6.3.2.2
Terrestrial Fauna Surveys	• 19th November 2024 • 5th December 2024 • 14th January 2025 • 23rd January 2025 • 27th August 2025 • 28th August 2025	Results found in Section 6.3.3
Badger/Mammal survey and camera trap set up	• 14th January 2025 • 23rd April 2025 • 8th May 2025 • 28th August 2025	Results found in Section 6.3.3
Bat Surveys	• 10th April 2025 • 8th May 2025 • 3rd July 2025 • 26th August 2025 • 27th August 2025 • 22nd September 2025	Appendix 6-2 Bat Survey Report
Aquatic surveys (including otter)	• 23rd September 2025 • 24th September 2025 • 25th September 2025 • 16th October 2025 • 17th October 2025 • 5th May 2026 • 6th May 2026 • 7th May 2026	Appendix 6-3 Aquatic Baseline Report

6.2.3.1 Multi-disciplinary Walkover Surveys (as per TII Guidelines, 2009b)

Multidisciplinary walkover surveys were undertaken within the recognised optimum period for vegetation surveys/habitat mapping, i.e. April to September (Smith et al., 2011). A comprehensive walkover of the entire Site was completed with incidental records also incorporated from other dedicated species/habitat specific surveys. During the multidisciplinary surveys, a search for Invasive Alien Species (IAS) listed under the Third Schedule of the European Communities Regulations 2011 (S.I. 477 of 2015) was conducted.

The walkover surveys were also designed to detect the presence, or likely presence, of a range of protected species. The survey included a search for mammal signs (bats, badger, red squirrel etc.) and areas of suitable habitat to support these species, potential features likely to be of significance to bats and additional habitat features for the full range of other protected species that are likely to occur in the vicinity of the Site (e.g. otter etc.). Bird species observed during the multi-disciplinary surveys were also recorded.

The multi-disciplinary walkover surveys comprehensively covered the entire study area and based on the survey findings, further detailed targeted surveys were carried out for features and locations of ecological significance. Other targeted surveys undertaken within the Site are described in the following subsections.

6.2.3.2 Dedicated Habitat and Vegetation Composition Surveys

All habitats recorded within the Site and described in this chapter have been classified in accordance with the Irish standard for habitat classification, *A Guide to Habitats in Ireland* Fossitt (2000). Full details of all the botanical surveys and results are provided in Appendix 6-1 and an assessment of the potential for the Site to support Annex I habitats is also provided in this Appendix.

Detailed botanical surveys/relevé assessments of the Site were also undertaken throughout multidisciplinary walkover surveys carried out from 2024 to 2026. These surveys provided an understanding of the baseline and informed further survey work following finalisation of the Proposed Project layout.

The habitat assessment surveys described in this chapter have been undertaken with reference to the following guidelines and interpretation documents:

- Commission of the European Communities (2013) *Interpretation manual of European Union habitats*. Eur 27. European Commission DG Environment.
- NPWS (2025). The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitat Assessments. Unpublished NPWS report. Edited by: Domhnall Finch, Aoife Delany, Fionnuala O'Neill and Deirdre Lynn
- Martin, J.R., O'Neill, F.H. & Daly, O.H. (2018), *The monitoring and assessment of three EU Habitats Directive Annex I grassland habitats*. Irish Wildlife Manuals, No. 102. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.
- O'Neill, F.H., Martin, J.R., Devaney, F.M. & Perrin, P.M. (2013), *The Irish semi-natural grasslands survey 2007-2012*. Irish Wildlife Manuals, No. 78. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland.

Plant nomenclature for vascular plants follows '*New Flora of the British Isles*' (Stace, 2010), while mosses and liverworts nomenclature follows 'Mosses and Liverworts of Britain and Ireland - a field guide' (British Bryological Society, 2010).

6.2.3.2.1 *Vegetation composition assessment*

Detailed habitat classification and assessment was undertaken by MKO at targeted locations within the Site, with relevés undertaken in 2025 and 2026 within representative habitats of the Proposed Project footprint, see Appendix 6-1 for all relevé data. A representative photograph was also taken for each of the habitats recorded on site, including all relevés. The locations of all relevés undertaken are shown in Appendix 6-1.

The survey results were then analysed in accordance the Irish Vegetation Classification (IVC) system. The IVC is a project with aims to classify, describe, and map in detail all aspects of natural and semi-natural vegetation in Ireland within a single, unified framework. The National Vegetation Database (NVD), upon which the IVC is based, holds data for over 30,000 relevés and is the core resource upon which the classification system is based.

A fundamental requirement of the IVC is to *"aid in definition and identification of EU Habitat Directive (92/43/EEC) Annex I habitats*" and to '*inform the planning process, for example through environmental impact assessments*'.

The Engine for Relevés to Irish Communities Assignment (ERICA)[10] is a web application for assigning vegetation data to communities defined by the Irish Vegetation Classification (IVC). Data can be uploaded, checked for errors and analysed and the results can then be downloaded. ERICA works with both quantitative vegetation cover data (such as are recorded in relevés and other types of botanical recording plots) and presence/absence data, such as species lists. ERICA covers grasslands, woodland, duneland, heaths, bogs, fens, mires, freshwater, saline waters, rocky habitats, scrub, strandline, saltmarsh and weed communities (Perrin, 2018)[11]. The data collected from the botanical assessments was uploaded to ERICA, analysed and the results data downloaded.

The analysis procedure uses a clustering process to assign classification affinity to vegetation plots based on a degree of membership to each of the communities defined by the IVC. Table 6-4 details the categorizing types of plots utilising the clustering analysis. This categorizing procedure was utilised to determine if the grassland plots within the Site had any affinity to Annex I grassland and whether further assessment was required.

Table 6-4 Categorising types of plots using clustering analysis (after Wiser & de Cáceres, 2013).

Plot Type	Definition
Assigned	The plot has membership ≥ 0.5 for one of the vegetation communities and therefore relates to the core definition of that vegetation community.
Unassigned	The plot has membership ≥ 0.5 for the noise class and is poorly represented by the current classification scheme
Transitional	The plot has membership < 0.5 for all vegetation communities and for the noise class. It falls within the scope of the current classification scheme but does not relate to the core definition of any of the vegetation communities.

6.2.3.3 Terrestrial Fauna Surveys

The results of the desk study, incidental records of protected species during ecological survey work and multidisciplinary walkover surveys were used to inform the scope of targeted ecological surveys required. Details of the methodologies followed are provided in the following sections.

[10] *Perrin, 2019, ERICA – Engine for Relevés to Irish Communities Assignment V5.0 User's Manual, Online, Available at: https://biodiversityireland.shinyapps.io/vegetation-classification/_w_9cd4889a/manual.pdf, Accessed: 10.10.2020*
[11] *Perrin et al., (2018). Irish Vegetation Classification (IVC) – An Overview of Concepts, Structure and Tools. In Practice, CIEEM.*

6.2.3.3.1 Badger Survey

The badger survey was conducted adhering to best practice guidance for protected fauna surveys (TII, 2009b) and CIEEM best practice competencies for species surveys[12]. Areas identified as providing potential habitat for badger were subject to specialist targeted survey. The badger survey aimed to determine the presence or absence of badger within the Site. This involved a search for all potential badger signs as per TII (2009b) (latrines, badger paths and setts). If encountered, setts would be classified as per the convention set out in TII (2009b) (i.e. main, annexe, subsidiary, outlier). The badger survey was also conducted adhering to best practice guidance and followed the '*Guidelines for the Treatment of Badger Prior to the Construction of National Roads Schemes'* (TII, 2005).

6.2.3.3.2 Otter Survey

Otter surveys were conducted adhering to best practice guidance (TII, 2009b) and CIEEM best practice competencies for species surveys[13]. All watercourses within the Site were identified as providing potential habitat for otter and were subject to targeted surveys for this species. This involved a search for all otter signs e.g. spraints, scat, prints, slides, trails, couches and holts. In addition to the width of the rivers/watercourses, a 10m riparian buffer (both banks) was considered to comprise part of the otter habitat (NPWS 2009[14]). The dedicated otter survey also followed the guidance as set out in TII (2006) '*Guidelines for the Treatment of Otters Prior to the Construction of National Roads Schemes*'.

6.2.3.3.3 Marsh Fritillary Surveys

No specific Marsh Fritillary surveys were carried out due to the lack of significant suitable habitat for this species within the boundaries of the Site. Small areas of Devils-bit Scabious (*Succisa pratensis*) were identified within the Site during the muti-disciplinary walkover surveys. None of these areas will be impacted by the Proposed Project and, therefore, species specific Marsh Fritillary surveys were not required.

6.2.3.3.4 Bat Surveys

Detailed description of the survey methodologies undertaken in relation to bats is provided in the Bat Report included in Appendix 6-2 of this EIAR, together with full details of the survey times and the surveyors who carried out the bat survey and assessment work.

Survey design and effort in 2025 was created in accordance with the best practice guidelines available, '*Bat Surveys: Good Practice Guidelines'* prepared by the Bat Conservation Trust (Collins 2023). Surveys undertaken were undertaken in strict accordance with those prescribed in NatureScot (2021) '*Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation*'. This is in line with standard best practice industry guidelines.

6.2.3.4 Aquatic surveys

Dedicated aquatic baseline surveys were undertaken at watercourse crossing locations within the Site and downstream watercourses. These watercourses were subject to biological evaluation and assessment through kick sampling, fish stock assessment (electro-fishing) and habitat appraisal, macro-invertebrate surveys eDNA surveys and Freshwater Pearl Mussel (*Margaritifera margaritifera*) surveys.

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[12] *CIEEM, 2013, Technical Guidance Series – Competencies for Species Survey: Badger, Online, Available at: https://cieem.net/wp-content/uploads/2019/02/CSS-BADGER-April-2013.pdf*

[13] *CIEEM, 2013, Technical Guidance Series – Competencies for Species Survey: Otter, Online, Available at: https://cieem.net/wp-content/uploads/2019/02/CSS-EURASIAN-OTTER-April-2013.pdf*

[14] *NPWS (2009) Threat Response Plan: Otter (2009-2011). National Parks & Wildlife Service, Department of the Environment, Heritage & Local Government, Dublin*

The baseline assessment focused on aquatic ecology, including fisheries and biological water quality, as well as protected aquatic species and habitats in the vicinity of the Site. Undertaken on a catchment basis, the baseline surveys focused on the detection of freshwater habitats and species of high conservation value. These included surveys for white-clawed crayfish (*Austropotamobius pallipes*) (eDNA only), freshwater pearl mussel (*Margaritifera margaritifera*), macro-invertebrates (biological water quality) and fish species, inclusive of supporting nursery and spawning habitat. The surveys also documented macrophyte and aquatic bryophyte communities including Annex I habitat associations. This holistic approach informed the overall aquatic ecological evaluation of each site in context of the Proposed Project and ensured that any habitats and species of high conservation value would be detected. Full details of the methodology followed for the aquatic surveys as well as details of the locations of survey sites is provided in the Aquatic Baseline Report, Appendix 6-3.

6.2.3.5 Invasive species surveys

During the multi-disciplinary walkover surveys, a search for non-native invasive species was undertaken within the Site. The survey focused on the identification of invasive species listed under the 'Third Schedule' of the European Communities (Birds and Natural Habitats) Regulations 2011 (As Amended) (S.I. 477 of 2015) and the 'First Schedule' of the European Union (Invasive Alien Species) Regulations 2024 (S.I. 374 of 2024). Invasive species were recorded within the Site and an Invasive Species Management Plan is included in Appendix 6-5.

6.2.4 Methodology for Assessment of Impacts and Effects

6.2.4.1 Identification of Target Receptors and Key Ecological Receptors

The criteria used to assess the ecological value and significance of the study area for habitats and species present follows Guidelines for Assessment of Ecological Impacts of National Road Schemes (TII 2009a) and Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018).

6.2.4.2 Valuing Ecological Receptors

The importance of the ecological features identified within the study area was determined with reference to a defined geographical context. This was undertaken following a methodology that is set out in Chapter 3 of the TII Ecological Impact Assessment Guidelines (TII, 2009a). These guidelines set out the context for the determination of value on a geographic basis with a hierarchy assigned in relation to the importance of any particular receptor and provide a basis for determination of whether any particular receptor is of importance on the following scales:

- International
- National
- County
- Local Importance (Higher Value)
- Local Importance (Lower Value)

These guidelines clearly set out the criteria by which each geographic level of importance can be assigned. Internationally Important sites are either designated for conservation as part of the Natura 2000 Network (SAC or SPA) or provide the best examples of habitats or internationally important populations of protected flora and fauna. Specific criteria for assigning each of the other levels of importance are set out in TII, 2009 and have been followed in this assessment. Where appropriate, the geographic frame of reference set out above was adapted to suit local circumstances. In addition, and where appropriate, the conservation status of habitats and species is considered when determining the significance of ecological receptors.

In accordance with TII, 2009 impact assessment is only undertaken of Key Ecological Receptors (KERs). KERs are within the ZoI of the Proposed Project and are 'both of sufficient value to be material in decision making and likely to be affected significantly'. To qualify as KERs, features must be of Local Ecological Importance (Higher Value) or higher. Features valued at Local Ecological Importance (Lower Value) are not considered to be KERs and therefore not subject to impact assessment. This is not to say that they are of no biodiversity value, but that impacts on these habitat types in their local context are not likely to result in a significant effect on biodiversity. It should be noted that this relates to the impact on the habitat itself as distinct from considering the role these habitat types play in supporting KER fauna species.

6.2.4.3 Characterisation of Impacts and Effects

The ecological effects of impacts arising from the Proposed Project are characterised as per CIEEM, 2018. The headings under which the impacts are characterised follow those listed in the guidance document and are applied where relevant. A summary of the impact characteristics considered in the assessment is provided below:

- **Positive or Negative**. Assessment of whether the Proposed Project results in a positive or negative effect on the ecological receptor.
- **Extent**. Description of the spatial area over which the effect has the potential to occur.
- **Magnitude** to size, amount, intensity and volume. It should be quantified if possible and expressed in absolute or relative terms e.g. the amount of habitat lost, percentage change to habitat area, percentage decline in a species population.
- **Duration** is defined in relation to ecological characteristics (such as the lifecycle of a species) as well as human timeframes. For example, five years, which might seem short-term in the human context or that of other long-lived species, would span at least five generations of some invertebrate species.
- **Frequency and Timing**. This relates to the number of times that an impact occurs and its frequency. A small-scale impact can have a significant effect if it is repeated on numerous occasions over a long period.
- **Reversibility.** This is a consideration of whether an effect is reversible within a 'reasonable' timescale. What is considered to be a reasonable timescale can vary between receptors and is justified where appropriate in the impact assessment section of this report.

6.2.4.4 Determining the Significance of Effects

The ecological significance of the effects of the Proposed Project is determined following the precautionary principle and in accordance with the methodology set out in Section 5 of CIEEM, 2018.

For the purpose of Ecological Impact Assessment (EcIA), '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 (CIEEM, 2018).

When determining significance, consideration is given to whether:

- Any processes or key characteristics of KERs will be removed or changed.
- There will be an effect on the nature, extent, structure and function of important ecological features.
- There is an effect on the average population size and viability of ecologically important species.
- There is an effect on the conservation status of important ecological habitats and species.

Integrity

In the context of EcIA, 'integrity' refers to the coherence of the ecological structure and function, across the entirety of a site, that enables it to sustain all of the ecological resources for which it has been valued (TII, 2009). Impacts resulting in adverse changes to the nature, extent, structure and function of component habitats and effects on the average population size and viability of component species, would affect the integrity of a site, if it changes the condition of the ecosystem to unfavourable.

Conservation status

An impact on the conservation status of a habitat or species is considered to be significant if it will result in a change in conservation status. According to the CIEEM 2018 Guidelines, the definition for conservation status in relation to habitats and species are as follows:

- Habitats – conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area.
- Species – conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.

As defined in the EU Habitats Directive 92/43/EEC, the conservation of a habitat is favourable when:

- Its natural range, and areas it covers within that range, are stable or increasing.
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future.
- The conservation status of its typical species is favourable.

The conservation of a species is favourable when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats.
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future.
- There is and will probably continue to be, a sufficiently large habitat to maintain its population on a long-term basis.

According to the TII 2009 Guidelines and CIEEM 2018 Guidelines, if it is determined that the integrity and/or conservation status of an ecological feature will be impacted on, then the level of significance of that impact is related to the geographical scale at which the impact will occur (i.e. local, county, national, international).

6.2.4.5 Incorporation of Mitigation

Constraint studies, as described in Section 3.2.3.1.2 of Chapter 3 of this EIAR, have been carried out to ensure that turbines and all ancillary infrastructure are located in the most appropriate areas of the Site. Section 6.4 of this chapter assesses the potential effects of the Proposed Project to ensure that all effects on sensitive ecological receptors are adequately addressed. Where significant effects on KERs are predicted, mitigation is incorporated into the project design or layout to address such effects. The implemented mitigation measures avoid or reduce potential significant residual effects, post mitigation.

6.2.5 Limitations

Seasonal factors that affect distribution patterns and habits of species were taken into account when conducting the surveys. The potential of the Site to support certain populations (in particular those of

conservation importance that may not have been recorded during the field survey due to their seasonal absence or nocturnal/cryptic habits) was assessed.

The specialist studies, analysis and reporting have been undertaken in accordance with the appropriate guidelines. The habitats and species recorded within the Site were readily identifiable and comprehensive assessments were made during the field visit. No limitations in respect of the surveys undertaken have been identified.

The information provided in this document accurately and comprehensively describes the baseline ecological environment; provides an accurate prediction of the likely ecological effects of the Proposed Project; prescribes mitigation as necessary; and describes the residual ecological impacts. The specialist studies, analysis and reporting have been undertaken in accordance with the appropriate guidelines. No significant limitations in the scope, scale or context of the assessment have been identified.

6.3 Establishing the Ecological Baseline

6.3.1 Desk Study Results

The following sections describe the findings of the desk study. It provides a baseline of the ecology known to occur in the existing environment based on data sources reviewed to inform the ecological impact assessment as outlined in Section 6.2.1. Please note that the results of desktop studies in relation to birds are detailed in Chapter 7:'*Ornithology*'.

6.3.1.1 Designated Sites

A map of European sites within the vicinity of the Site is provided in Figure 6-1 with Nationally designated sites shown in Figure 6-2.

Table 6-5 provides details of all relevant Nationally designated sites initially considered to potentially be within the ZoI of the Proposed Project. All European designated sites are fully described and assessed in the NIS which accompanies the planning application with the EIAR. In summary, the following European sites were identified to be within the ZoI of the Proposed Project, namely:

- Blackwater River (Cork / Waterford) SAC [002170]
- Blackwater Estuary SPA [004028]
- Dungarvan Harbour SPA [004032]

As per EPA, 2022 "a biodiversity section of an EIAR, should not repeat the detailed assessment of potential effects on European sites contained in a Natura Impact Statement" but should "incorporate their key findings as available and appropriate". Section 6.4.5.1 of this chapter provides a summary of the key assessment findings with regard to European sites.

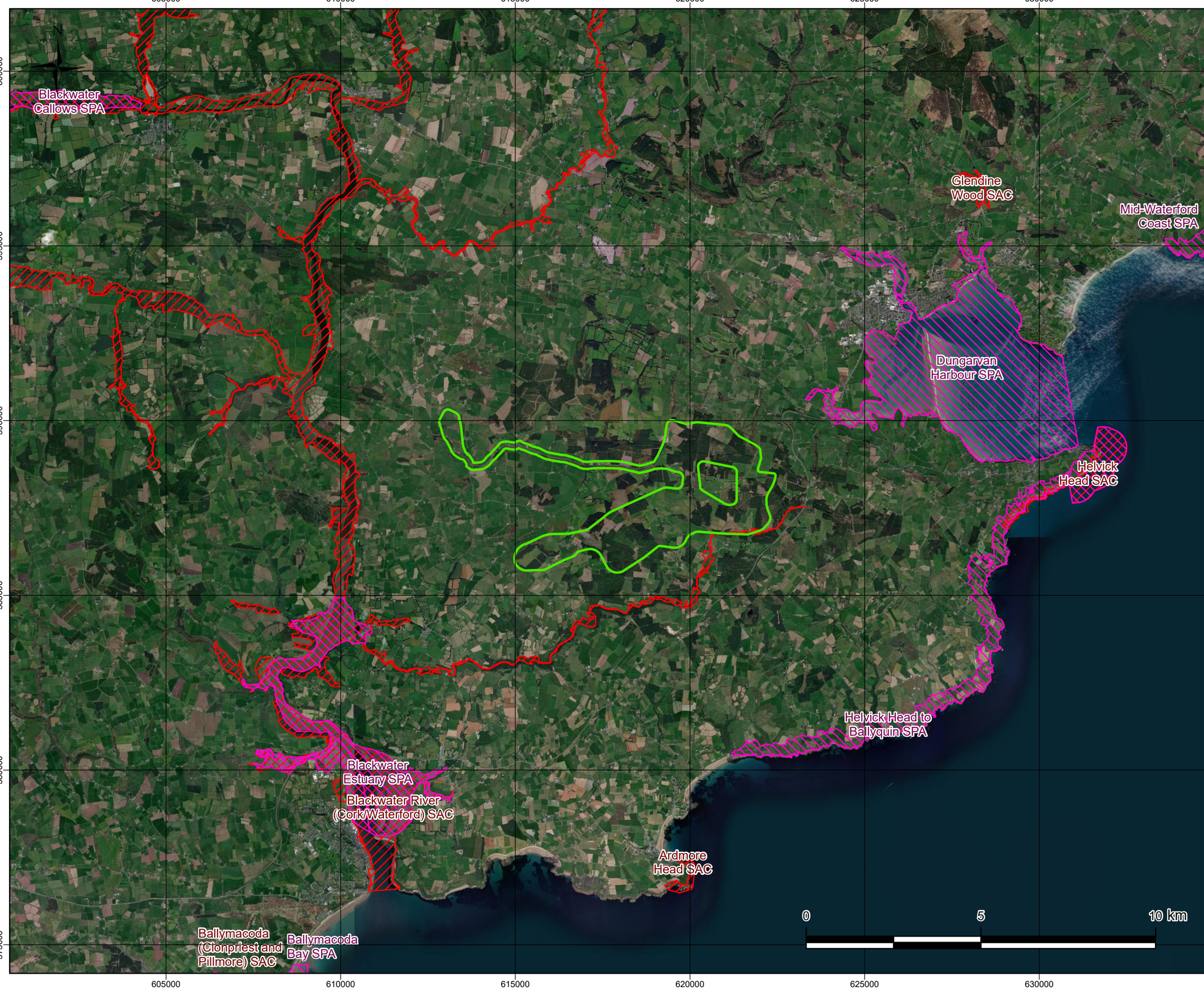
Table 6-5 Identification of Nationally designated sites (pNHAs) within the Likely ZoI

Designated Site	Distance from Proposed Project (km)	Likely Zone of Influence Determination
Dungarvan Harbour pNHA [000663]	2.2km from the Proposed Wind Farm site (4.1km from the Proposed Grid Connection site)	There is no potential for direct effects as the Proposed Project is located entirely outside of this designated site. This pNHA is designated for saltmarsh and sandflat habitats. The northeastern section of the Proposed Wind Farm site is within the same groundwater basin and Water Framework Directive (WFD) sub catchment as this designated site. Therefore, there is potential for indirect effects due to the hydrological connectivity between the Proposed Wind Farm and the designated site. **Therefore, the pNHA is considered to be within the ZoI for the Proposed Project and further assessment is required.**
Blackwater River And Estuary pNHA [000072]	2.7km from the Proposed Wind Farm site (2.8km from the Proposed Grid Connection site)	There is no potential for direct effects as the Proposed Project is located entirely outside of this designated site. This pNHA is designated for estuary, mudflat, sandflats and riverine habitats. It lies within the same WFD sub catchment and groundwater basin as the

		Site. Furthermore, there are numerous rivers that flow from the Site to the designated site. **Therefore, the pNHA is considered to be within the ZoI for the Proposed Project and further assessment is required.**
Ballyeelinan Wood pNHA [001692]	4.5km from the Proposed Wind Farm site (7km from the Proposed Grid Connection site)	There is no potential for direct effects as the Proposed Project is located entirely outside of this designated site. This pNHA is designated for woodland habitats. There is no hydrological link between the pNHA and the Site, given this and the intervening distance, there is no potential for indirect effects on the pNHA. **The pNHA is considered to be outside the ZoI for the Proposed Project and no further assessment is required.**
Glenanna Wood pNHA [001698]	5.5km from the Proposed Wind Farm site (8km from the Proposed Grid Connection site)	There is no potential for direct effects as the Proposed Project is located entirely outside of this designated site. This pNHA is designated for woodland habitats. There is no hydrological link between the pNHA and Proposed Project, given this and the intervening distance, there is no potential for indirect effects on the pNHA. **The pNHA is considered to be outside the ZoI for the Proposed Project and no further assessment is required.**
Helvick Head pNHA [000665]	6.1km from the Proposed Wind Farm site (9.1km from the Proposed Grid Connection site)	There is no potential for direct effects as the Proposed Project is located entirely outside of this designated site. This pNHA is designated for sea cliffs and dry heath habitats. There is no hydrological link between the qualifying features of the pNHA and the Site. Given this and the intervening distance, there is no potential for indirect effects on the pNHA. **The pNHA is considered to be outside the ZoI for the Proposed Project and no further assessment is required.**
Ballyvergan Marsh pNHA [000078]	11.5km from the Proposed Wind Farm site (13.1km from the Proposed Grid Connection site)	There is no potential for direct effects as the Proposed Project is located entirely outside of this designated site. This pNHA is designated for marsh habitat. There is no hydrological connectivity between the Site and this pNHA.

		The pNHA is considered to be outside the ZoI for the Proposed Project and no further assessment is required.
Ballyvoyle Head to Tramore pNHA [001693]	12.8km from Proposed Wind Farm site (14.9km from the Proposed Grid Connection site)	There is no potential for direct effects as the Proposed Project is located entirely outside of this designated site. This pNHA is designated for sea cliffs and dry heath habitats. There is no hydrological link between the pNHA and the Site. Given this and the intervening distance, there is no potential for indirect effects on the pNHA. **The pNHA is considered to be outside the ZoI for the Proposed Project and no further assessment is required.**
Lismore Woods pNHA [000667]	12.9km from Proposed Wind Farm site (13.7km from Proposed Grid Connection site)	There is no potential for direct effects as the Proposed Project is located entirely outside of this designated site. This pNHA is designated for terrestrial habitats. There is no hydrological link between the pNHA and the Site. Given this and the intervening distance, there is no potential for indirect effects on the pNHA. **The pNHA is considered to be outside the ZoI for the Proposed Project and no further assessment is required.**
Tallow (Disused Church) pNHA [000670]	13.8km from Proposed Wind Farm site and 14.3km from Proposed Grid Connection site (approx. 17.5km from the closest Proposed Turbine).	There is no potential for direct effects as the Proposed Project is located entirely outside of this designated site. A historically recorded Leisler's bat roost has been known to occur within this pNHA. The roost record is located over 17km from the closest proposed turbine. This distance is beyond the 13.4km Irish Leisler's bat foraging range reported by Shiel et al. (1999) and cited in BCI (2026). Given this distance, the potential for significant impacts on the roost as a result of the Proposed Project is unlikely. **The pNHA is considered to be outside the ZoI for the Proposed Project and no further assessment is required.**
Comeragh Mountains pNHA [001952]	14.1km from Proposed Wind Farm site (15.5km from Proposed Grid Connection site)	There is no potential for direct effects as the Proposed Project is located entirely outside of this designated site. There is no hydrological connectivity between this pNHA and the Site. Furthermore, due to the intervening distance and the fact that the pNHA is upgradient from the Site, there is no potential for indirect effects.

		The pNHA is considered to be outside the ZoI for the Proposed Project and no further assessment is required.
Ballymacoda (Clonpriest and Pillmore) pNHA [000077]	14.3km from Proposed Wind Farm site (16.2km from Proposed Grid Connection site)	There is no potential for direct effects as the Proposed Project is located entirely outside of this designated site. The Proposed Wind Farm site is located within the documented foraging range of some of the bird species for which this pNHA is designated. Therefore, the potential for likely significant effect via ex-situ collision impacts, or impacts via habitat loss, displacement or disturbance, requires further assessment. The Site is located within a completely separate hydrological catchment to the pNHA, therefore there is no potential for likely significant effect via water quality deterioration. **Therefore, the pNHA is considered to be within the ZoI for the Proposed Project and further assessment is required.**

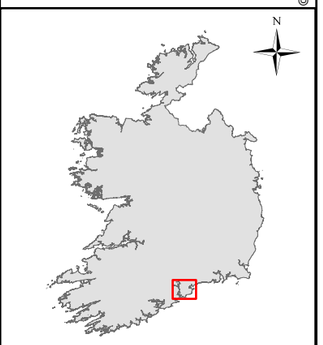


Map Legend

- EIAR Site Boundary
- Special Area of Conservation
- Special Protection Areas

Spatial Reference
Name: IRENET95 Irish Transverse Mercator
Datum: IRENET95
Projection: Transverse Mercator

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SITE LOCATION - NOT TO SCALE

Drawing Title: European Designated Sites

Project Title: Proposed Slievegrine Renewable Energy Development, Co. Waterford

Project No.	Drawing No.	Scale
240740	6-1	1:100,000
Drawn By	Checked By	Date
AMcL	RW	25/09/2026

Email: info@mkoireland.ie/ Website: www.mkoireland.ie

605000 610000 615000 620000 625000 630000

600000 595000 590000 585000 580000 575000

N

Lismore Woods

Blackwater River Callows

Stradbally Woods

Ballyvoyle Head To Tramore

Dungarvan Harbour

Helvick Head

Blackwater River And Estuary

Glenanna Wood

Ballyeelinan Wood

Blackwater River And Estuary

Ballyvergan Marsh

Ballymacoda (Clonpriest And Pillmore)

0 5 10 km

Map Legend

- EIAR Site Boundary
- Proposed Natural Heritage Area (pNHA)

Spatial Reference
Name: IRENET95 Irish Transverse Mercator
Datum: IRENET95
Projection: Transverse Mercator

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N

SITE LOCATION - NOT TO SCALE

Drawing Title
Nationally Designated Sites

Project Title
Proposed Slievegrine Renewable Energy Development, Co. Waterford

Project No.	Drawing No.	Scale
240740	6-2	1:100,000
Drawn By	Checked By	Date
AMcL	RW	25/09/2026

Email: info@mkoireland.ie/ Website: www.mkoireland.ie

6.3.1.2 NPWS Article 17 Reporting

The most recent National Parks and Wildlife Service data on the recorded distribution of EU Habitats Directive Annex I listed habitats was reviewed in relation to the subject lands. This data is available in the form of the NPWS Article 17 reporting (2025), and associated GIS data, on '*The Status of EU Protected Habitats and Species in Ireland*'.

There are no mapped Article 17 habitats located within or adjacent to the Site.

There are mapped Article 17 habitats located downstream of the Site, via Brickey_020 stream system (Twomile Bridge: 17T04, Kilmurray 17: 17K23, and Coolcormuck: 17C24) which flow from within the Site and into Dungarvan Harbour SPA [000663] approximately 2.5km downstream of the Site. The mapped Article 17 habitats are all associated with qualifying interests of the Dungarvan Harbour SPA and are assessed under that designation within the accompanying NIS.

There are also mapped Article 17 habitats located downstream of the Site, via the streams from the Licky_010 and the Licky_020 systems which flow from within the Site (Clashbrack and Carronadavderg) and enter the waters of the Blackwater River (Cork/Waterford) SAC [002170]. The mapped Article 17 habitats are all associated with qualifying interests of the Blackwater River (Cork/Waterford) SAC and Blackwater Estuary SAC and are assessed under that designation within the accompanying NIS.

6.3.1.3 Protected Flora

The New Atlas of the British and Irish Flora (Preston et al, 2002) was consulted to investigate whether any rare or unusual plant species listed under Annex II of the EU Habitats Directive, The Irish Red Data Book – 1 Vascular Plants (Wyse et al. 2016) or the Flora (Protection) Order 2022 had been recorded in the relevant 10km square in which the Site is situated (X18, X19, X28 and X29). Each hectad contains 100 one-kilometre squares containing terrestrial habitats. Species of conservation concern are given in Table 6-6 below. The NPWS Vascular plants, Charophytes and Lichens Map Viewer[15] and NBDC were also consulted.

Table 6-6 Species listed designated under the Flora Protection Order or the Irish Red Data Book within Hectads X18, X19, X28 and X29

Common Name	Scientific Name	Status	Hectad
Autumn Ladies-stresses	*Spiranthes spiralis*	NT	X18, X19
Borrer's saltmarsh grass	*Puccinellia fasciculata*	NT, FPO	X29
Brackish water-crowfoot	*Ranunculus baudotii*	NT	X29
Burr chervil	*Anthriscus caucalis*	NT	X29
Common Extinguisher-moss	*Encalypta vulgaris*	NT	X29
Common Gromwell	*Lithospermum officinale*	NT	X19
Common Toadflax	*Linaria vulgaris*	NT	X18, X28
Corn Marigold	*Glebionis segetum*	NT	X18, X29
Divided Sedge	*Carex divisa*	EN, FPO	X29

[15] *https://heritagedata.maps.arcgis.com/apps/webappviewer/index.html?id=a41ef4e10227499d8de17a8abe42bd1e*

Dumortier's Liverwort	*Dumortiera hirsuta*	NT	X29
Fiddle dock	*Rumex pulcher*	VU	X29
Fragrant Agrimony	*Agrimonia procera*	NT	X18, X19, X28, X29
Greater Knapweed	*Centaurea scabiosa*	NT	X28, X29
Green Field-speedwell	*Veronica agrestis*	NT	X18, X19
Henbane	*Hyoscyamus niger*	NT	X29
Knotted hedge-parsley	*Torilis nodosa*	NT	X28, X29
Irish Whitebeam	*Sorbus hibernica*	NT	X19
Irish Spleenwort	*Asplenium onopteris*	VU	X28
Killarney Fern	*Trichomanes speciosum*	LC, FPO	X29, X28
Little-robin	*Geranium purpureum*	NT	X29
Meadow Crane's bill	*Geranium pratense*	NT	X18
Opposite-leaved Pondweed	*Groenlandia densa*	FPO	X19
Pale Flax	*Linum bienne*	NT	X18, X29
River Pocket-moss	*Fissidens rivularis*	NT	X28, X29
Sea Kale	*Crambe maritima*	NT	X28, X29
Six-stamened Waterwort	*Elatine hexandra*	NT	X28
Slender Thistle	*Carduus tenuiflorus*	NT	X19, X29
Slender Tufted sedge	*Carex acuta*	NT	X18
Smooth brome	*Bromus racemosus*	NT	X19
Strawberry-tree	*Arbutus unedo*	NT	X18
Tall Aloe-moss	*Aloina ambigua*	EN	X29
Tubular water-dropwort	*Oenanthe fistulosa*	NT, FPO	X19
Vervain	*Verbena officinalis*	NT	X19
Wormwood	*Artemisia absinthium*	VU	X18, X28, X29
Yellow Horned-poppy	*Glacium falvum*	NT	X29

Near Threatened (NT), Vulnerable (VU), Endangered (EN), Critically Endangered (CR), Regionally Extinct (RE), FPO (Flora Protection Order)

6.3.1.4 Bryophytes

The desktop search (NPWS bryophyte mapper) indicated that no protected bryophytes have been recorded within or adjacent to the Site. However, Beck Pocket-moss *(Fissidens rufulus)* and Glasswort Feathermoss (*Scleropodium touretii)* have been recorded over 9km northeast of the Site. Table 6-7 below presents the records gathered from a search on NBDC also provided the following species. No peatland habitat that would provide suitable habitat for the bog mosses (*Sphagnum* species) listed below was recorded within the Site. *Fissidens rivularis* can be found on neutral to acidic rock in lowland streams, rivers and lakes, habitats which can be found within the Site.

Table 6-7 NBDC records of protected bryophytes within Hectads X18, X19, X28 and X29.

Common Name	Latin Name	Status
Feathery Bog-moss	*Sphagnum cuspidatum*	Annex V
Flat-topped Bog moss	*Sphagnum fallax*	Annex V
Fringed Bog moss	*Sphagnum fimbriatum*	Annex V
Papillose Bog-moss	*Sphagnum papillosum*	Annex V
Red Bog moss	*Sphagnum rubellum*	Annex V
River Pocket-moss	*Fissidens rivularis*	NT

6.3.1.5 National Biodiversity Data Centre (NBDC) Records

6.3.1.5.1 Fauna

A search of the NBDC website was conducted to inform survey effort and provide a baseline of likely species composition in the area. Records of protected fauna recorded from hectads X18, X19, X28 and X29 are provided in in Table 6-8 below. A desk study pertaining to records of bird species is provided in Chapter 7 of this EIAR.

Table 6-8 NBDC records for protected species and species of conservation interest (excl. birds) in Hectads X18, X19, X28 and X29

Common name	Scientific name	Status	Hectad
Common Frog	*Rana temporaria*	Wildlife Act, Annex V	X18, X19, X28, X29
Smooth Newt	*Lissotriton vulgaris*	Wildlife Act	X18, X19, X28
Common Lizard	*Zootoca vivipara*	Wildlife Act	X19, X28, X29
Marsh Fritillary	*Euphydryas aurinia*	Annex II,	X18, X19, X28, X29
Fallow Deer	*Dama dama*	Wildlife Act	X18, X19, X28, X29
Hedgehog	*Erinaceus europaeus*	Wildlife Act,	X18, X19, X28, X29
Otter	*Lutra lutra*	Wildlife Act, Annex II, Annex IV	X18, X19, X28, X29
Pine Marten	*Martes martes*	Wildlife Act, Annex V	X19, X29

Badger	*Meles meles*	Wildlife Act	X18, X19, X28, X29
Irish Stoat	*Mustela erminea subsp. hibernica*	Wildlife Act	X18, X19, X28, X29
Irish Hare	*Lepus timidus subsp. hibernicus*	Wildlife Act, Annex V	X18, X19, X28
Daubenton's Bat	*Myotis daubentonii*	Wildlife Act, Annex IV	X18, X19, X28, X29
Natterer's Bat	*Myotis nattereri*	Wildlife Act, Annex IV	X18, X29
Leisler's Bat	*Nyctalus leisleri*	Wildlife Act, Annex IV	X18, X28, X29
Common Pipistrelle	*Pipistrellus pipistrellus*	Wildlife Act, Annex IV	X18, X19, X28, X29
Soprano Pipistrelle	*Pipistrellus pygmaeus*	Wildlife Act, Annex IV	X18, X19, X28, X29
Brown Long-eared Bat	*Plecotus auritus*	Wildlife Act, Annex IV	X18, X19, X28, X29
Red Squirrel	*Sciurus vulgaris*	Wildlife Act	X18, X19, X28, X29
Pygmy Shrew	*Sorex minutus*	Wildlife Act	X19, X28, X29
Basking Shark	*Cetorhinus maximus*	Wildlife Act	X28
Bottlenose Dolphin	*Tursiops truncatus*	Wildlife Act, Annex II, Annex IV	X28
Common Dolphin	*Delphinus delphis*	Wildlife Act, Annex IV	X18, X28, X29
Fin Whale	*Balaenoptera physalus*	Wildlife Act, Annex IV	X28
Grey Seal	*Halichoerus grypus*	Wildlife Act, Annex II, Annex V	X28, X29
Harbour Porpoise	*Phocoena phocoena*	Wildlife Act, Annex II, Annex IV	X28, X29
Harbour Seal	*Phoca vitulina*	Wildlife Act, Annex II, Annex V	X29
Humpback Whale	*Megaptera novaeangliae*	Wildlife Act, Annex IV	X28
Leatherback Turtle	*Dermochelys coriacea*	Wildlife Act, Annex IV	W28, X29
Loggerhead Turtle	*Caretta caretta*	Wildlife Act, Annex II, Annex IV	X29
Long-finned Pilot Whale	*Globicephala melas*	Wildlife Act, Annex IV	X29
Minke Whale	*Balaenoptera acutorostrata*	Wildlife Act, Annex IV	X28
Orca	*Orcinus orca*	Wildlife Act, Annex IV	X28

Pygmy Sperm Whale	*Kogia breviceps*	Wildlife Act, Annex IV	X29
Risso's Dolphin	*Grampus griseus*	Wildlife Act, Annex IV	X28, X29
Sowerby's Beaked Whale	*Mesoplodon bidens*	Wildlife Act, Annex IV	X28
Sperm Whale	*Physeter macrocephalus*	Wildlife Act, Annex IV	X29
White-beaked Dolphin	*Lagenorhynchus albirostris*	Wildlife Act, Annex IV	X28

Annex II, Annex IV, Annex V – Of EU Habitats Directive, Wildlife Act – Irish Wildlife Acts (1976 as amended)

6.3.1.5.2 Invasive Species

The NBDC database also contains records of invasive species identified within the relevant hectads. A number of species subject to restrictions under Regulations 49 and 50 and included in the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 were found to be present in hectads X18, X19, X28 and X29 as shown in Table 6-9 below.

Table 6-9 NBDC records for invasive species (Hectads X18, X19, X28 and X29

Common Name	Scientific Name	Hectad
American Mink	*Mustela vison*	X18, X19, X29
Brown Rat	*Rattus norvegicus*	X28
Canada goose	*Branta canadensis*	X18, X19,
Fallow Deer	*Dama dama*	X28
Giant hogweed	*Heracleum mantegazzianum*	X29
Giant-rhubarb	*Gunnera tinctoria*	X19, X29
Himalayan balsam	*Impatiens glandulifera*	X18, X19, X29
Japanese Honeysuckle	*Lonicera japonica*	X28
Japanese knotweed	*Reynoutria japonica*[16]	X18, X19, X28, X29
Three-cornered leek	*Allium triquetrum*	X18, X19, X28, X29
Grey squirrel	*Sciurus carolinensis*	X29
Parrot's-feather	*Myriophyllum aquaticum*	X19, X29
Harlequin Ladybird	*Harmonia axyridis*	X19, X29
Rhododendron	*Rhododendron ponticum*	X18, X19, X28, X29
Hottentot-fig	*Carpobrotus edulis*	X29

[16] Named *Fallopia japonica* in the Regs.

Greylag goose	*Anser anser*	X18, X19, X29
Fallow deer	*Dama dama*	X18, X19, X28, X29
Spanish Bluebell	*Hyacinthoides hispanica*	X28
Sea-buckthorn	*Hippophae rhamnoides*	X29

6.3.1.6 NPWS Protected Species Records

National Parks and Wildlife Service (NPWS) online records were searched to see if any rare or protected species of flora or fauna have been recorded hectads X18, X19, X28 and X29. An information request was also sent to the NPWS scientific data unit requesting records from the Rare and Protected Species Database on the 21st of May 2026. A response was received on the 22nd of May 2026. Table 6-10 below lists rare and protected species records obtained from NPWS.

Table 6-10 NPWS records for rare and protected species

Common name	Scientific name	Designation	Hectad
Hen Harrier	*Circus cyaneus*	Wildlife Act, Annex I, BoCCI Amber List	X29
Common Lizard	*Zootoca vivipara*	Wildlife Act	X19, X28, X29
Common Frog	*Rana temporaria*	Wildlife Act, Annex V	X18, X19, X28, X29
Sea Lamprey	*Petromyzon marinus*	Annex II	X18, X19
Brook Lamprey	*Lampetra planeri*	Annex II	X18, X19, X28, X29
Atlantic Salmon	*Salmo salar*	Annex II, Annex V	X18, X19, X28, X29
Fallow Deer	*Dama dama*	Wildlife Act	X18, X19, X28
Hedgehog	*Erinaceus europaeus*	Wildlife Act	X18, X19, X28, X29
Otter	*Lutra lutra*	Wildlife Act, Annex II, Annex IV	X18, X19, X28, X29
Pine Marten	*Martes martes*	Wildlife Act, Annex V	X18, X19, X29
Badger	*Meles meles*	Wildlife Act	X18, X19, X28, X29
Irish Stoat	*Mustela erminea subsp. hibernica*	Wildlife Act	X18, X19
Irish Hare	*Lepus timidus subsp. hibernicus*	Wildlife Act, Annex V	X18, X19
Daubenton's Bat	*Myotis daubentonii*	Wildlife Act, Annex IV	X18, X19, X28, X29

Common name	Scientific name	Designation	Hectad
Leisler's Bat	*Nyctalus leisleri*	Wildlife Act, Annex IV	X18, X19, X28, X29
Common Pipistrelle	*Pipistrellus pipistrellus*	Wildlife Act, Annex IV	X18, X19, X28, X29
Soprano Pipistrelle	*Pipistrellus pygmaeus*	Wildlife Act, Annex IV	X18, X19, X28, X29
Brown Long-eared Bat	*Plecotus auritus*	Wildlife Act, Annex IV	X18, X19, X28, X29
Natterer's Bat	*Myotis nattereri*	Wildlife Act, Annex IV	X18, X19, X29
Red Squirrel	*Sciurus vulgaris*	Wildlife Act	X18
Henbane	*Hyoscyamus niger*	NT	X29
Little Robin	*Geranium purpureum*	NT	X29
Fiddle Dock	*Rumex pulcher*	VU	X29
Yellow Horned Poppy	*Glaucium flavum*	NT	X29
Divided Sedge	*Carex divisa*	EN, FPO	X29
Cottonweed	*Achillea maritima*	FPO	X29
Killarney Fern	*Trichomanes speciosum*	FPO, Annex II, Annex IV	X18, X19, X28, X29
Borrer's Saltmarsh-grass	*Puccinellia fasciculata*	FPO	X29
White Cushion Moss	*Leucobryum glaucum*	Annex V	X19
Twaite Shad	*Alosa fallax*	Annex II, Annex V	X18
Freshwater Pearl Mussel	*Margaritifera margaritifera*	Wildlife Acts, Annex II, Annex V	X18, X28

FPO = Flora Protection Order; VU = Vulnerable, NT=Near Threatened, WA = Wildlife Act

6.3.1.7 Bats

Please note that the detailed results of desktop studies in relation to bats are presented in the Bat Report, Appendix 6-2.

In summary, the desk study found records of six of Ireland's nine resident bat species within 10 km of the Site. Bat Conservation Ireland (BCI) records, received on the 26th of February 2026, included seven roosts, two transects and fifteen ad-hoc observations of soprano pipistrelle, common pipistrelle, brown long-eared bat, Daubenton's bat, Natterer's bat and Leisler's bat. The roosts were mainly in the Dungarvan, Aglish and Youghal areas. A National Bat Database of Ireland search of the relevant hectads (last run on the 31st of July 2026) found the same assemblage. Based on the 2025 Article 17 range maps, the Proposed Wind Farm site is outside the known range of lesser horseshoe bat, Nathusius' pipistrelle and whiskered bat. There are no SACs designated for lesser horseshoe bat within

10 km of the Site, and no NHAs or pNHAs within 10 km of the Proposed Wind Farm site are designated for bats. The nearest such site is Tallow (Disused Church) pNHA [000670], 13.8 km from the Proposed Grid Connection site and 17.5 km from the closest turbine. The Proposed Wind Farm site is mainly conifer plantation and marginal farmland and the NBDC bat landscape suitability index is 21.22–26.44, which is Low. Two Ancient and Long-Established Woodlands are nearby: Cladagh at 1.1 km and Killeeshal at 6.3 km. The relevant datasets show no subterranean sites within the Proposed Wind Farm site. Seventeen caves lie 4.8–8.6 km away, but none are known to be used by bats.

6.3.1.8 Aquatic Fauna

Please note that the detailed results of the desktop studies in relation to aquatic fauna are presented in the Aquatic Baseline Report, Appendix 6-3.

The desk study drew on NPWS, EPA, WFD and Inland Fisheries Ireland (IFI) datasets. In summary, the Goish watercourses (Goish_010) and the WF 1–4 and GC 1–3 survey sites are at 'Moderate' WFD status (2016–2021 and 2019–2024) and 'At Risk'. The Licky and Abartagh waterbodies are at 'Good status' and 'Not at Risk'. The Brickey (Brickey_020, Colligan-Mahon catchment) is at 'Poor status' and 'At Risk'. At the 14 EPA monitoring stations nearby, recent Q-values ranged from Q3 (Poor) on the Brickey and lower Goish to Q4–Q4-5 (Good–High) on the Licky.

No watercourses within the immediate vicinity of the Site are designated Salmonid Waters under S.I. No. 293/1988. The nearest is the River Bride [Waterford], which joins the Blackwater about 1.1 km downstream of the Goish confluence. The Site lies within the Munster Blackwater-Licky freshwater pearl mussel catchment (S.I. No. 296/2009). Records of freshwater pearl mussel are present in the Licky River which flows along the southern boundary of the Site (see Section 6.3.1.8.1 below). IFI WFD fish surveys on the Licky and Abartagh rivers (2018 and 2022) recorded brown trout, sea trout, Atlantic salmon, European eel, flounder and three-spined stickleback, with site fish ecological status of 'Good' or 'Moderate'.

Annex I habitat 3260 (Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation) is mapped in the hectads X18, X19, X28 and X29, and the nearest Annex I habitat 6430 (Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels) is about 4.2 km downstream of the aquatic survey site 'WF 4' on the Goish. No Annex I freshwater habitats are mapped within the Site, but the receiving Blackwater Estuary supports QI habitats of the SAC.

There are no records of FPO-protected aquatic plants in the relevant hectads or in hydrologically connected waters.

6.3.1.8.1 *Freshwater Pearl Mussel (Margaritifera margaritifera)*

The Site is located within the Munster Blackwater – Licky *Margaritifera* catchment, which is classified as 'Catchments of SAC populations listed in S.I. 296 of 2009'. The Licky population fell from an estimated >10,000 individuals in 2005 to about 4,700 by 2009, and there was no evidence of recruitment for at least 12 years.

There are 15 records of freshwater pearl mussel (from 1987 to 2005) within the Licky River, tributaries of which flow through the Proposed Wind Farm site. All of these records are located downstream of the Proposed Wind Farm site and thus there is hydrological connection between the Proposed Wind Farm site and known freshwater pearl mussel records.

6.3.1.9 Regional and Local Hydrology and Hydrogeology

6.3.1.9.1 Proposed Wind Farm site

A regional hydrology map is shown in Figure 9-2 within Chapter 9 of this EIAR. The Proposed Wind Farm site is in an upland rural setting about 5 km south of Dungarvan, Co. Waterford, mostly on the south-facing slopes of the Drum Hills. Regionally, most of the Site is within WFD Catchment 18 Blackwater (Munster) and the Goish_SC_010 subcatchment. A small northern part is within Catchment 17 Colligan-Mahon (Colligan_SC_010). Locally, about 83% of the Site drains south to the Licky River, about 12% to the Goish River and about 5% north to the Brickey River via the Twomile Bridge River. The Licky, the main surface water receptor, flows west-southwest to the Blackwater, which reaches the sea at Youghal. The Brickey flows east to the sea at Dungarvan. The Site is extensively drained artificially by agricultural field drains, forestry mound, collector and interceptor drains, and road drains. Waterlogging, ponding and overland flow were common during wet weather, and springs and seeps are found at a range of elevations. The largest spring, near proposed turbine T16, was visually estimated to discharge at 10–15 l/s.

The Licky_010–030 and Abartagh_010 waterbodies are at 'Good' WFD status (2019–2024) and 'Not at Risk'. Goish_010 (Moderate), Goish_020 (Poor) and Brickey_020 (Poor) are 'At Risk', which the EPA attributes to forestry and agricultural pressures. The Licky is also a LAWPRO Priority Area for Action (AFA0963) because of its freshwater pearl mussel population. In terms of hydrogeology, the Site is underlain by glacial till of Low to Moderate permeability derived from Old Red Sandstone, with alluvium along watercourses and small areas of peat. Below this is Devonian Old Red Sandstone bedrock, which the GSI classifies as a Locally Important Aquifer, poorly productive and moderately productive only in local zones (Ll). Groundwater vulnerability is mostly Moderate to High, with Extreme in upland areas where subsoils are thin. Recharge is limited, at up to 22% of effective rainfall, so surface runoff dominates. Groundwater flow follows topography towards local watercourses.

6.3.1.9.2 Proposed Grid Connection site

The Proposed 110kV Underground Cabling Route runs about 9 km west from the Proposed 110kV Substation at Clashbrack to the Proposed 220kV Loop-in Substation at Ballycullane, Co. Waterford. Most of it is within public road corridors, with two short sections (about 262m and 788m) in private agricultural land. Regionally, the Proposed 110kV Underground Cabling Route is within WFD Catchment 18 Blackwater (Munster) and the Goish_SC_010 subcatchment. It follows the Goish River drainage for several kilometres westward to its confluence with the Blackwater. The route has two EPA-mapped watercourse crossings. The Goish waterbodies it drains to are at Moderate (Goish_010) and Poor (Goish_020) WFD status and are 'At Risk'. The subsoils and bedrock across the relevant subcatchments are the same as those described above for the Proposed Wind Farm site, Old Red Sandstone-derived till over an (Ll) bedrock aquifer.

6.3.1.10 Conclusions of the Desktop Study

The desktop study has provided information about the existing environment in hectads X18, X19, X28 and X29, within which the Site is located. The Site is located in the Blackwater (Munster) catchment and is entirely within the Goish_SC_010 surface water sub-catchment.

The Licky River is located to the south of the Proposed Wind Farm site, with tributaries flowing through the Site. The Brickey River is located to the north of the Proposed Wind Farm site. The Licky River flows generally in a southwesterly direction before discharging to the Youghal Bay southwest of the Proposed Wind Farm site. A section of this river which flows along the southern boundary of the Proposed Wind Farm site is within the Blackwater River (Cork/Waterford) SAC. The Proposed Wind Farm site is located within the Munster Blackwater (Licky) Freshwater Pearl Mussel (*Margaritifera margaritifera*) catchment classified as "*Catchments of SAC populations listed in S.I. 296 of 2009*". There

are records of freshwater pearl mussel within the Licky River, which flows to the south of the Proposed Wind Farm site.

The following European sites were identified to be within the ZoI of the Proposed Project, namely:

- Blackwater River (Cork/Waterford) SAC
- Dungarvan Harbour SPA
- Blackwater Estuary SPA
- Helvick Head to Ballyquin SPA
- Mid-Waterford Coast SPA
- Ballymacoda Bay SPA

The following nationally designated sites were identified to be within the ZoI of the Proposed Project:

- Dungarvan Harbour pNHA [000663]
- Blackwater River and Estuary pNHA [000072]
- Ballymacoda (Clonpriest and Pillmore) pNHA [000077]

The desk study identified that a variety of protected faunal species are known to occur in the vicinity of the Site, including bats, otter, badger, red squirrel etc. The mammal species recorded during the desk study informed the survey methodologies undertaken during the site visits. The mammal species recorded within the relevant hectads have widespread range and distributions in Ireland and are likely to be recorded frequently throughout Ireland (Marnell et al, 2009).

There are no previously mapped Article 17 habitats located within the Site. However, there are previously mapped Article 17 habitats to the south of the Site and mapped downstream, as well as a number of previously mapped Article 17 habitats located within the same sub-catchment (Goish_SC_010) as the Site, all associated with European designated sites.

The desk study provided useful information to inform the ecological surveys undertaken within the Site as well as the identification of pathways for potential impact on sensitive ecological receptors.

6.3.2 Habitat Survey Results

The habitat classifications and codes correspond to those described in 'A Guide to Habitats in Ireland' (Fossitt 2000). A habitat map of the Proposed Project is provided in Figure 6-3a, 6-3b and 6-3c. A map showing the Proposed Project footprint overlaying the Habitat Map is shown in Figure 6-4a, 6-4b and 6-4c.

A total of eleven habitats were recorded within the Proposed Project boundaries including:

- Conifer plantation (WD4)
- Recently felled woodland (WS5)
- Improved agricultural grassland (GA1)
- Wet grassland (GS4)
- Scrub (WS1)
- Hedgerows (WL1)
- Stone walls and other stonework (BL1)
- Treelines (WL2)
- Drainage ditches (FW4)
- Eroding/upland Rivers (FW1)
- Buildings and artificial surfaces (BL3)

Detailed botanical data from relevés recorded within the Site are provided in Appendix 6-1 of this EIAR.

6.3.2.1 Proposed Wind Farm site

6.3.2.1.1 *Conifer Plantation (WD4)*

Conifer plantation (WD4) is one of the most abundant habitats present throughout the Site. The highest concentrations of this habitat can be found at the northern and southern parts of the Site. The dominant tree species within these plantation habitats is sitka spruce (*Picea sitchensis*). Ground flora includes hard fern (*Blechnum spicant*), broad buckler fern (*Dryopteris dilatata*) and bramble (*Rubus fruticosus* agg.). Additionally, several bryophyte species such as glittering wood-moss (*Hylocomium splendens*), common feather-moss (*Kindbergia praelonga*), swan's-neck thyme-moss (*Mnium hornum*) and pointed spear-moss (*Calliergonella cuspidata*) are located within this habitat (Plate 6-1).

The proposed infrastructure located within this habitat includes Proposed Turbines T1, T2, T3, T4, T5, T6, T11, T13, T14, T21, four borrow pits, four construction compounds, three of the security compounds, the met mast and the Proposed 110kV Substation. Additionally, many of the proposed access roads (existing and new) are located within this habitat. The forestry plantations within the Site typically contain sparse ground cover, which is generally dominated by needle litter and *Thuidium tamarascinum.* Further botanical data on these habitats are provided in Appendix 6-1.



Plate 6-1 Conifer plantation (WD4) located within the footprint of the proposed T5

6.3.2.1.2 Recently Felled Woodland (WS5)

There are habitat areas consisting of recently felled woodland (WS5) located within the Site. This habitat consists of areas where conifer plantations (WD4) have been felled. This habitat is found in small patches throughout the Site. The dominant species found within this habitat is recently felled sitka spruce (*Picea sitchensis*) (Plate 6-2). The proposed infrastructure located within this habitat includes Proposed Turbine T18 and some of the proposed access roads (existing and new).



Plate 6-2 Recently felled woodland (WS5) south of the Proposed Turbine T18

6.3.2.1.3 Improved Agricultural Grassland (GA1)

Improved agricultural grassland (GA1) (Plate 6-3) is one of the dominant habitats within the Site. This habitat is found throughout the Proposed Wind Farm site. The dominant species within this habitat include Perennial Ryegrass (*Lolium perenne*), Yorkshire Fog (*Holcus lanatus*), Creeping Buttercup (*Ranunculus repens*), White Clover (*Trifolium repens*) and Broad-leaved Dock (*Rumex obtusifolius*).

Proposed Project footprint within this habitat includes Turbines T7, T8, T10, T12, T15, T16, T17, T19, T20, T22 and T23. Additionally, one borrow pit located northeast of T22 is also located within a GA1 habitat. Many of the proposed access roads (existing and new) are located within this habitat.



Plate 6-3 Improved agricultural grassland (GA1) located in the footprint of T23

6.3.2.1.4 Scrub (WS1)

Scrub (WS1) is found in small pockets within the Site. This habitat is often found as a mosaic with conifer plantation (WD4). The dominant species within this habitat include willow (*Salix* spp.), gorse (*Ulex europaeus*) and bramble (*Rubus fruticosus* agg.). Limited scrub loss is required for the Proposed Project footprint, with marginal scrub only located in some sections of proposed new roads.



Plate 6-4 Gorse scrub present within the Site

6.3.2.1.5 Wet Grassland (GS4)

There are fields containing species-poor wet grassland (GS4) located throughout the Site, however to a much lesser extent compared to improved agricultural grassland. Commonly found species within these habitats includes soft rush (*Juncus effusus*), perennial ryegrass (*Lolium perenne*), yorkshire fog (*Holcus lanatus*), creeping buttercup (*Ranunculus repens*) (Plate 6-5). The proposed infrastructure located within this habitat type includes Proposed Turbines T9 and T10 and short sections of proposed new access roads.



Plate 6-5 Wet grassland (GS4) located within the footprint of T9

6.3.2.1.6 Hedgerow (WL1) and stone walls (BL1)

Hedgerows (WL1) are located throughout the Site and are frequently found in conjunction with stone walls (BL1). The highest concentration of these habitats is within the centre of the Proposed Wind Farm site where they are found as field boundaries for the improved agricultural grassland (GA1) fields, as shown in Plate 6-6. The most frequently found species within these habitats include gorse (*Ulex europaeus*), bramble (*Rubus fruticosus* agg.), hawthorn (*Crataegus monogyna*), rowan (*Sorbus aucuparia*), grey willow (*Salix cinerea*) with bracken (*Pteridium aquilinum*) and nettle (*Urtica dioica*) commonly found at field level. Detailed appraisals of hedgerows within the Proposed Project footprint are presented in the Botanical Report in Appendix 6-1.



Plate 6-6 Left: Hedgerow (WL1) located within the footprint of T15. Right: Example of stone wall habitat within the Proposed Wind Farm.

6.3.2.1.7 Treelines (WL2)

Within the Proposed Wind Farm site, these habitats are primarily found as boundaries for agricultural grassland habitats as shown in Plate 6-7. Species found within treeline habitats includes ash (*Fraxinus excelsior*), hawthorn (*Crataegus monogyna*), sycamore (*Acer pseudoplatanus*), dog rose (*Rosa canina*) and grey willow (*Salix cinerea*).



Plate 6-7 Treeline (WL2) located within the Proposed Project, north of T10

6.3.2.1.8 Drainage Ditches (FW4)

Drainage ditches (FW4) are located throughout the Proposed Wind Farm site. Within the Proposed Wind Farm site, this habitat is usually associated with Hedgerow (WL1) habitats or Conifer plantations (WD4). Where these occur as field boundaries, drains often include Water Mint (*Mentha aquatica*), Willowherb (*Epilobium* spp.), Rough Meadow-grass (*Poa trivialis*), Hogweed (*Heracleum sphondylium*), Yorkshire Fog (*Holcus lanatus*) and Creeping Buttercup (*Ranunculus repens*). Where they occur as forestry drains, they are very species poor and sparse in vegetation (Plate 6-8).



Plate 6-8 Drainage ditch (FW4) located within a Conifer Plantation (WD4) adjacent to T22 at the south of the Proposed Project

6.3.2.1.9 Eroding Upland Rivers/Streams (FW1)

Tributaries of the Licky River are located across the centre and south of the Proposed Wind Farm site (Plate 6-9). These watercourses converge outside the southern boundary of the Proposed Wind Farm site and flow southward. The Goish River is located to the west of the Proposed Wind Farm site. Tributaries within the Proposed Wind Farm site flow along the field boundaries of Improved agricultural grassland (GA1) and through Conifer plantations (WD4). The various tributaries of these EPA mapped rivers within the Proposed Wind Farm site have a variety of substrate types including loose pebbles, gravel, sand, cobbles and boulders. The width of these water courses varies between 1m and 3m wide where they occur within the Proposed Wind Farm site. There is little vegetation within the watercourses, however, in many areas there is encroaching bankside vegetation such as Gorse (*Ulex europaeus*), Willow (*Salix* spp.), Bramble (*Rubus fruticosus* agg.), Soft Rush (*Juncus effusus*), Birch (*Betula* spp.) and Holly (*Ilex aquifolium*). The Licky River flows along the southern boundary of the Proposed Wind Farm site (Plate 6-10).

Full details of results of aquatic surveys undertaken are provided in the Aquatic Baseline Report (Appendix 6-3), including aquatic habitat and faunal surveys of proposed new infrastructure crossing locations within the Proposed Wind Farm site. The results of these surveys are summarised in Section 6.2.3.4.



Plate 6-9 Tributary streams flowing through the Proposed Wind Farm site.



Plate 6-10 The River Licky - an eroding/upland river (FW1) flowing along the southern boundary of the Proposed Wind Farm site.

6.3.2.1.10 Buildings and artificial surfaces (BL3)

Residential dwellings, derelict buildings/farm structures as well as agricultural buildings are also present within the Proposed Wind Farm site and are categorised as Buildings and artificial surfaces (BL3) as shown in Plate 6-11. Existing public roadways, agricultural and forestry tracks within the Proposed Wind Farm site are also categorised as BL3.



Plate 6-11 Derelict building classified as Buildings and artificial surfaces (BL3) located to the south of T11



Plate 6-12 Example of artificial surface/ trackway within the Proposed Wind Farm site

6.3.2.2 Proposed Grid Connection site

The Proposed Grid Connection includes the Proposed 220kV Loop-in Substation in the townland of Ballycullane and the Proposed 110kV Underground Cabling Route.

The Proposed 220kV Loop-in Substation is proposed to be located within improved agricultural grassland (GA1 habitat).

The Proposed 110kV Underground Cabling Route will be located primarily within the public road corridor classified as artificial surfaces (BL3), with a short section (approximately 262m) located within a private forestry road west of the Proposed 110kV Substation, which is located within an area of conifer plantation (WD4) in the centre of the Proposed Wind Farm site. Another short section (approximately 788m) is located within proposed new access roads through agricultural pastures (GA1) bordered by hedgerows (WL1).

The Goish River, classified as Depositing/lowland River (FW2), runs parallel to the south of the Proposed 110kV Underground Cabling Route.

6.3.2.2.1 *Watercourse Crossings*

A total of 2 no. EPA mapped watercourse crossings have been identified will be traversed along the Proposed 110kV Underground Cabling Route. The locations of all EPA mapped watercourse crossings are shown on the detailed layout drawings in Appendix 4-1. Instream works are not required at any watercourse crossing along the Proposed 110kV Underground Cabling Route.

Full details of results of aquatic surveys undertaken at watercourse crossings along the Proposed Grid Connection are provided in the Aquatic Baseline Report (Appendix 6-3). The results of these surveys are summarised in Section 6.3.2.2.1.

The Goish River, an Eroding/upland River (FW1), flows along the Proposed 110kV Underground Cabling Route and occurs as a shallow, first-order stream within the vicinity of the route.



Plate 6-13 The Goish River in the vicinity of the Proposed 110kV Underground Cabling Route.

615000

585000

N

GOISH_010

T7

LICKY_010

T15

T13

T14

T16

T17

T18

T19

T20

T23

T22

T21

LICKY_020

LICKY_030

0 0.5 1 km

615000

Map Legend

- EIAR Site Boundary
- Proposed Turbine Locations
- Buildings and artificial surfaces (BL3)
- Spoil and bare ground (ED2)
- Improved agricultural grassland (GA1)
- Scrub (WS1)
- Immature woodland (WS2)
- Amenity grassland (improved) (GA2)
- Wet grassland (GS4)
- Conifer plantation (WD4)
- Recently-felled woodland (WS5)
- Hedgerows (WL1)
- Treelines (WL2)
- Rivers and streams (FW1/ FW2)

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Spatial Reference
Name: IRENET95 Irish Transverse Mercator
Datum: IRENET95
Projection: Transverse Mercator

N

SITE LOCATION - NOT TO SCALE

Drawing Title

Habitat Map

Project Title

Proposed Slievegrine Renewable Energy Development, Co. Waterford

Project No.	Drawing No.	Scale
240740	6-3a	1:14,000
Drawn By	Checked By	Date
AMcL	MNR	30/09/2026

Email: info@mkoireland.ie/ Website: www.mkoireland.ie

620000

590000

N

T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
T11
T12
T14
T15
T16
T17
T20

GOISH_010
BRICKEY_020
LICKY_010
LICKY_010

0 0.5 1km

620000

Map Legend

- EIAR Site Boundary
- Proposed Turbine Locations
- Buildings and artificial surfaces (BL3)
- Improved agricultural grassland (GA1)
- Scrub (WS1)
- Immature woodland (WS2)
- Amenity grassland (improved) (GA2)
- Wet grassland (GS4)
- Conifer plantation (WD4)
- Recently-felled woodland (WS5)
- Hedgerows (WL1)
- Treelines (WL2)
- Rivers and streams (FW1/ FW2)

Spatial Reference
Name: IRENET95 Irish Transverse Mercator
Datum: IRENET95
Projection: Transverse Mercator

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N

SITE LOCATION - NOT TO SCALE

Drawing Title

Habitat Map

Project Title

Proposed Slievegrine Renewable Energy Development, Co. Waterford

Project No.	Drawing No.	Scale
240740	6-3b	1:14,000
Drawn By	Checked By	Date
AMcL	MNR	30/09/2026

Email: info@mkoireland.ie/ Website: www.mkoireland.ie

615000

590000

N

GOISH_020

GOISH_010

ABARTAGH_010

0 0.5 1 km

Map Legend

- EIAR Site Boundary
- Improved agricultural grassland (GA1)
- Scrub (WS1)
- Hedgerows (WL1)
- Treelines (WL2)
- Rivers and streams (FW1/ FW2)

Spatial Reference
Name: IRENET95 Irish Transverse Mercator
Datum: IRENET95
Projection: Transverse Mercator

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N

SITE LOCATION - NOT TO SCALE

Drawing Title

Habitat Map

Project Title

Proposed Slievegrine Renewable Energy Development, Co. Waterford

Project No.	Drawing No.	Scale
240740	6-3c	1:14,000
Drawn By	Checked By	Date
AMcL	MNR	30/09/2026

Email: info@mkoireland.ie/ Website: www.mkoireland.ie

615000

615000

585000

615000

N

GOISH_010

LICKY_010

LICKY_020

LICKY_030

T7
T13
T14
T15
T16
T17
T18
T19
T20
T21
T22
T23

0
0.5
1 km

Map Legend

- EIAR Site Boundary
- Proposed Turbine Locations
- Proposed Project footprint
- Buildings and artificial surfaces (BL3)
- Spoil and bare ground (ED2)
- Improved agricultural grassland (GA1)
- Scrub (WS1)
- Immature woodland (WS2)
- Amenity grassland (improved) (GA2)
- Wet grassland (GS4)
- Conifer plantation (WD4)
- Recently-felled woodland (WS5)
- Hedgerows (WL1)
- Treelines (WL2)
- Rivers and streams (FW1/ FW2)

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Spatial Reference
Name: IRENET95 Irish Transverse Mercator
Datum: IRENET95
Projection: Transverse Mercator

N

SITE LOCATION - NOT TO SCALE

Drawing Title
Habitat Map with Overlain Infrastructure

Project Title
Proposed Slievegrine Renewable Energy Development, Co. Waterford

Project No.	Drawing No.	Scale
240740	6-4a	1:14,000
Drawn By	**Checked By**	**Date**
AMcL	MNR	08/10/2026

Email: info@mkoireland.ie/ Website: www.mkoireland.ie

620000

590000

N

T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T14 T15 T16 T17 T20

GOISH_010

BRICKEY_020

LICKY_010

0 0.5 1 km

620000

Map Legend

- EIAR Site Boundary
- Proposed Turbine Locations
- Proposed Project footprint
- Buildings and artificial surfaces (BL3)
- Improved agricultural grassland (GA1)
- Scrub (WS1)
- Immature woodland (WS2)
- Amenity grassland (improved) (GA2)
- Wet grassland (GS4)
- Conifer plantation (WD4)
- Recently-felled woodland (WS5)
- Hedgerows (WL1)
- Treelines (WL2)
- Rivers and streams (FW1/ FW2)

Spatial Reference
Name: IRENET95 Irish Transverse Mercator
Datum: IRENET95
Projection: Transverse Mercator

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N

SITE LOCATION - NOT TO SCALE

Drawing Title
Habitat Map with Overlain Infrastructure

Project Title
Proposed Slievegrine Renewable Energy Development, Co. Waterford

Project No.	Drawing No.	Scale
240740	6-4b	1:14,000
Drawn By	**Checked By**	**Date**
AMcL	MNR	08/10/2026

MKO
Email: info@mkoireland.ie/ Website: www.mkoireland.ie

615000

620000

590000

585000

GOISH_020

GOISH_010

BRICKEY_020

ABARTAGH_010

LICKY_010

LICKY_020

LICKY_030

BALLYLANG_010

T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T15 T16 T17 T18 T19 T20 T21 T22 T23

N

0 1 2 km

Map Legend

- EIAR Site Boundary
- Proposed Turbine Locations
- Proposed Project footprint
- Buildings and artificial surfaces (BL3)
- Spoil and bare ground (ED2)
- Improved agricultural grassland (GA1)
- Scrub (WS1)
- Immature woodland (WS2)
- Amenity grassland (improved) (GA2)
- Wet grassland (GS4)
- Conifer plantation (WD4)
- Recently-felled woodland (WS5)
- Hedgerows (WL1)
- Treelines (WL2)
- Rivers and streams (FW1/ FW2)

Spatial Reference
Name: IRENET95 Irish Transverse Mercator
Datum: IRENET95
Projection: Transverse Mercator

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SITE LOCATION - NOT TO SCALE

Drawing Title: Habitat Map with Overlain Infrastructure

Project Title: Proposed Slievegrine Renewable Energy Development, Co. Waterford

Project No.	Drawing No.	Scale
240740	6-4c	1:28,000
Drawn By	Checked By	Date
AMcL	MNR	08/10/2026

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6.3.2.3 Protected Habitats/Flora

In summary, as described in the preceding sections, no Annex I habitats were recorded within the Site. Furthermore, no botanical species listed under the Flora (protection) Order or listed in the Irish Red Data Books were recorded on the Site. All species recorded are common in the Irish landscape. No rare and protected plant species recorded in the desk study, including those obtained from NPWS data request were recorded within the study area.

6.3.2.4 Invasive species

During field surveys undertaken, *Rhododendron ponticum* was recorded within the Proposed Wind Farm site, with records found within the footprint of proposed existing access road widening works south of proposed turbine T3. Four stands were recorded, which include young non-flowering plants adjacent to the existing road, and a larger stand within forestry outside of the construction footprint. An Invasive Species Management Plan (ISMP) is included within Appendix 6-5 of this EIAR.

No further third schedule invasive species were recorded within the Site during any of the surveys undertaken to date.



Plate 6-14 Stand of Rhododendron (Rhododendron ponticum) within the Site

6.3.3 Faunal Survey Results

6.3.3.1 Badger

During the initial constraints walkover surveys undertaken in late 2024 and early 2025, a multi-entrance badger sett was recorded within a conifer plantation (WD4) habitat to the west of Proposed Turbine T6. There were many latrines, snuffle holes and mammal trails identified in the area surrounding this sett. Subsequent camera trap monitoring was carried out at this sett between April and August 2025. Following a review of the footage recorded at this sett, it was determined that there was a high level of badger activity at the sett. By taking a precautionary approach, it is assumed that this sett is likely used as a breeding sett and therefore has been treated as such.

Other badger signs including droppings and prints were recorded elsewhere throughout the Site, including droppings recorded along the existing road located to the southwest of Proposed Turbine T3 as well as located to the southwest of T19, a latrine located south of T15 as well as prints within the footprint of the hardstand of T11. The Site provides suitable habitat for this species, particularly given the extent of the conifer woodland (WD4) habitat within the Site.



Plate 6-15 Badger sett entrance located within a Conifer plantation (WD4) to the west of T6

6.3.3.2 Otter

No holts, breeding sites or resting (couching) sites were identified during any of the dedicated otter surveys, or multi-disciplinary surveys undertaken. However, evidence of activity was recorded downstream of the Proposed Wind Farm site, in the form of otter spraints, prints and slides, along the banks of the River Licky (Licky_020 and Licky_010). Both fresh and old otter spraint as well as otter prints were identified in the vicinity of survey location WF 7 along the River Licky. Potential otter slides were also identified in the vicinity of survey location WF 9 (Plate 6-16) and survey location WF 18 along the Licky and Brickey rivers, respectively, with high-quality commuting and foraging habitat throughout each of these rivers.

No evidence of otter activity was identified along watercourses within the vicinity of the Proposed Grid Connection.



Plate 6-16 Left: Otter spraint along the Licky_020 River downstream of the Site. Right: Otter slide along the Licky_020 River downstream of the Site

6.3.3.3 Pine Marten

Pine marten scat was recorded to the west of Proposed Turbine T12, and within the footprint of the T19 hardstand. There were no pine marten dens recorded at the Site. Conifer plantations (WD4) throughout the Site provide suitable supporting habitat for this species, although the habitat is suboptimal for the species relative to native broadleaved woodland.

6.3.3.4 Red squirrel

Red squirrel feeding remains were recorded within the Site. These feeding signs were recorded within proximity of the footprint of Proposed Turbine T21. No additional feeding signs or dreys were recorded during any of the surveys undertaken. Conifer plantations (WD4) throughout the Site provide suitable supporting habitat for this species, although the habitat is suboptimal for the species relative to native broadleaved woodland.



Plate 6-17 Red Squirrel feeding signs located within the footprint of T21

6.3.3.5 Reptiles and Amphibians

During the surveys, frogspawn was recorded on the track beside the proposed new access road between Proposed Turbines T9 and T11.

Common lizard was not recorded within the Site, however there is suitable habitat for this species in the form of scrub and stone wall habitats. Common lizards hibernate throughout October to March, often in groups[17]. They have a preference for sheltered frost-free spots, under rubble or stones, or old tree roots and in hedge banks[18]. Stone walls in particular can provide suitable hibernation sites for common lizard. Heavily vegetated stone walls were recorded within the Site and as such could provide suitable hibernation sites for this species.

6.3.3.6 Bats

Full details of results of bat surveys undertaken in 2025 are provided in the Bat Report (Appendix 6-2) and are summarised in this section. All survey and detector locations are shown in Figure 2-1 in the Bat Report.

6.3.3.6.1 *Bat Habitat Appraisal*

The desktop study and walkover surveys were used to assess habitats for their suitability to support foraging, commuting, and roosting bats, according to Collins (2023). Bat habitat suitability categories, divided into *High*, *Moderate*, *Low*, *Negligible* or *None* are described fully in **Appendix 6-2**.

Areas of exposed grassland, agricultural land and artificial surfaces were considered of *Negligible* suitability, areas of scrub and isolated treelines that may be used by a small number of bats and are

[17] https://iwt.ie/wp-content/uploads/2017/09/WL42-Lizzards-eng.pdf
[18] https://www.arguk.org/info-advice/id-guides/529-dragons-in-the-hills-the-amphibian-and-reptiles-of-northern-ireland/file

poorly connected to the wider landscape, as well as closed canopy forestry were considered of *Low* suitability for foraging and commuting bats. Hedgerows, treelines, eroding/upland rivers, drainage ditches, Stone walls and other stonework, scrub and conifer plantation edges were considered of *Moderate* suitability for foraging and commuting bats as they provide connectivity as linear features within the Site and to the surrounding landscape.

With regard to roosting bats, all inspected structures within the Proposed Wind Farm were assessed as having *Low, Moderate* or *Negligible* roosting suitability. No structures with *High* roosting suitability were identified.

Seven buildings were inspected for bat roosting suitability. One structure was assessed as offering *Negligible* roosting potential, three structures had *Low* roosting potential, and four buildings had *Moderate* roosting potential.

All trees and treelines within the Proposed Wind Farm footprint, particularly those scheduled for removal within felling buffers, were inspected for potential roost features (PRFs) following Andrews (2018), including rot holes, hazard beams, cracks/splits, partially detached bark, knot holes and branch junctions. No PRFs were identified on any tree scheduled for felling.

With regard to commuting and foraging bats, habitats directly affected by the Proposed Grid Connection footprint, comprising buildings and artificial surfaces (BL3), were assessed as having *Negligible* suitability. Linear features adjacent to the Proposed 110kV Substation, the Proposed 110kV Underground Cabling Route and the Proposed 220KV Loop-in Substation including conifer plantation (WD4) edges, hedgerows (WL1), and Depositing/lowland River (FW2), were assessed as offering *Moderate* suitability for commuting and foraging bats, due to their connectivity with the wider landscape and the presence of linear vegetation providing navigational structure and shelter. However, these features are not directly impacted by the Proposed Grid Connection works.

With regard to roosting bats, no buildings or trees capable of supporting bat roosts were identified within the Proposed Grid Connection footprint, and these areas were therefore assessed as having no (*None*) roosting potential. Of the assessed watercourse crossing structures, one was assigned *Negligible* potential, and one was assigned *Low* potential.

6.3.3.6.2 Static Detector Surveys

Bat surveys were undertaken within the Proposed Wind Farm site in Spring, Summer and Autumn of 2025. Fifteen static detectors were deployed at or near the Proposed Wind Farm turbine locations during each season. In complement, a bat habitat appraisal and manual activity surveys were conducted.

In total, 70,748 bat passes were recorded across all deployments in 2025. In general, Common pipistrelle (n=22,125) occurred most frequently, followed closely by soprano pipistrelle (n=22,055) and Leisler's bat (n=19,284). Instances of *Myotis* spp. (n=6,229) and brown long-eared bat (n=1,054) were recorded less frequently. Nathusius' pipistrelle (n=1) was rare. Spring activity was dominated by Leisler's bat, while summer and autumn activity was primarily associated with common pipistrelle and soprano pipistrelle. Leisler's bat, Common pipistrelle, Soprano pipistrelle and *Myotis* spp. were recorded consistently across all three survey periods, whereas brown long-eared bat was recorded infrequently. Only one bat pass of Nathusius' pipistrelle was recorded in spring.

Median activity levels were assessed for each species by detector location. The species utilising areas around the detectors varied by season and by detector location. Results indicate clear seasonal and spatial variation in median activity levels. In spring, summer and autumn, activity at detector D06 was notably higher than at all other locations, dominated by soprano pipistrelle passes; this detector was situated within an agricultural field adjacent to a conifer plantation edge. During summer, overall bat activity decreased substantially and *Myotis spp.* activity increased markedly at detector D01 while Leisler's bat activity decreases across all detector locations. In autumn, common and soprano

pipistrelles dominated and the activity levels of Leisler's bat increased. Activity remained generally low throughout the survey periods at detectors D12, D13, D14 and D15.

6.3.3.6.3 *Manual Activity surveys*

Manual transects were undertaken in spring, summer and autumn 2025 and bat activity was recorded in all seasons. A total of 1,251 bat passes were recorded, including during emergence surveys. In general, soprano pipistrelle (n=615) was recorded most frequently, followed by common pipistrelle (n=546) and Leisler's bat (n=64). *Myotis* spp. (n=22) and brown long-eared bat (n=4) were less frequent.

Species composition and activity levels varied between survey periods. To account for differences in survey effort, results were expressed as bat passes per kilometre surveyed. Activity was concentrated along woodland edges, treelines, hedgerows, and other linear features such as roads and tracks.

The spring surveys recorded fewer bat passes (n = 160) compared with summer (n = 346) and autumn (n = 283). Common pipistrelle was most frequently recorded in spring and autumn, while soprano pipistrelle was recorded in similar numbers during summer. Leisler's bat activity peaked in spring and autumn. *Myotis* spp. was recorded in summer and autumn and the species was absent in spring, whereas brown long-eared bats were recorded in both spring and summer.

6.3.3.6.4 *Emergence Surveys*

Emergence surveys were carried out in spring, summer and autumn of 2025 to further assess the use of seven structures identified within the Proposed Wind Farm as having potential to support roosting bats. A small stone shed within the farmyard complex was confirmed as a small soprano pipistrelle bat roost. No other roosts were identified within the remaining structures.

6.3.3.7 Fisheries and Aquatic Fauna

Full details of results of aquatic surveys undertaken are provided in the Aquatic Baseline Report (Appendix 6-3) and a summary of the results is provided below. All survey locations (n=22) are shown in Figure 2-1 in the Aquatic Baseline report. No rare or protected macrophytes/aquatic bryophytes were recorded at any of the aquatic survey locations. No aquatic Annex I habitats were recorded at any of the aquatic survey locations.

6.3.3.7.1 Proposed Wind Farm site

Aquatic baseline surveys were carried out at 19 Proposed Wind Farm sites (WF 1–19) in September 2025. The proposed internal infrastructure watercourse crossings were surveyed in May 2026. Most watercourses were eroding/upland rivers (FW1), from first and second-order headwater streams to the mainstem River Licky. The River Brickey sites (WF 15, 16 and 18) were classified as depositing/lowland rivers (FW2). The best fisheries habitat was on the mainstem Licky (WF 7, 9, 11 and 13), where salmonid holding and European eel habitat were categorised as Good to Excellent. Brown trout were caught at every electrofished, site except WF 17. Juvenile Atlantic salmon were caught at seven sites, with the highest density at WF 13. European eel were caught at nine sites, with the highest density at WF 9. Lamprey were recorded only at WF 14, and flounder only at WF 16. Water quality ranged from Q3 (Poor) to Q4 (Good), and most sites were below 'Good' status, indicating water quality pressures across the catchment. Otter spraint, prints and possible slides were recorded on the Licky and Brickey, but no holts or couches were found. White-clawed crayfish were not detected by eDNA at any of the 12 sampling sites.

Surveys were carried out at eight sites within the Proposed Wind Farm site that are crossed by Proposed Wind Farm infrastructure. The eight internal crossings were mostly narrow, culverted and historically modified streams under pressure from forestry and agriculture. Water quality at the crossings ranged from Q3 (Poor) to Q4 (Good). Watercourses at survey sites IC 1, IC 2 and IC 3 showed evidence of historic straightening and/or dredging, with overall limited instream habitat for all

fish species. Survey sites IC 4, IC 5 and IC 6 represented stretches of more naturalised upland streams, with locally good salmonid nursery habitat and European eel habitat. Survey site IC 7 was subject to ongoing livestock poaching, while the watercourse at IC 8 had a manmade rock ramp which diverted the watercourse into a secondary channel via a half-pipe.

6.3.3.7.2 *Proposed Grid Connection*

Three sites along the Proposed 110kV Underground Cabling Route (GC 1–3) were surveyed. All are Eroding/upland River (FW1) in the Goish catchment.

The survey site GC 1 (Monagally East) was located on a shallow, culverted first-order stream with Good salmonid nursery and eel habitat, but Poor holding habitat because of its shallow depth. GC 2 (Goish) consisted of particularly high-quality habitat for brown trout and salmon fry and parr. Salmonid holding and eel habitat were Good, but there is historic bank poaching. GC 3 (Goish) consisted of Good habitat for adult salmonids and eel.

Water quality was Q4 (Good) at GC 2 and GC 3 and Q3 (Poor) at GC 1. No signs of otter were recorded along the Proposed 110kV Underground Cabling Route.

6.3.3.7.3 Freshwater Pearl Mussel (*Margaritifera margaritifera*)

Data obtained from the NPWS data request recorded Freshwater Pearl Mussel (*Margaritifera margaritifera*) within the River Licky to the south of the Proposed Wind Farm site. Following dedicated Freshwater Pearl Mussel (*Margaritifera margaritifera*) surveys within the River Licky, populations of this species were identified downstream of the Proposed Wind Farm site.

No records of this species were identified within any watercourses within the Proposed Wind Farm site. Aquatic surveys and habitat appraisals were carried out at all proposed internal watercourse crossings. There are 4 no. EPA mapped watercourse crossings proposed within the Proposed Wind Farm site. Eight aquatic survey locations were sampled within the Proposed Wind Farm site and included these locations. Survey sites IC 1, IC 2 and IC 3 showed evidence of historic straightening and/or dredging, with overall limited instream habitat for all fish species. Survey sites IC 4, IC 5 and IC 6 represented stretches of more naturalised upland streams, with locally good salmonid nursery habitat and European eel habitat. Survey site IC 7 was subject to ongoing livestock poaching, while the watercourse at IC 8 had a manmade rock ramp which diverted the watercourse into a secondary channel via a half-pipe.

eDNA surveys for Freshwater Pearl Mussel conducted throughout the wider vicinity of the Proposed Wind Farm site showed a positive result at WF 9 along the River Licky south of the Proposed Wind Farm, with Stage 1 and 2 Freshwater Pearl Mussel surveys subsequently conducted under licence from the NPWS. Surveys were conducted along four stretches of the River Licky, with 127 live mussels and 2 no. dead mussels identified in Area 1. No other live mussels were identified in survey areas 2, 3 or 4, with enrichment and siltation pressures, as well as substrate compaction, evident in the latter areas of survey.

6.3.4 Identification of Key Ecological Receptors

Table 6-11 below summarises the ecological evaluation of all receptors as outlined in Section 6.2.4. It provides the rationale for the determination and identifies the habitats and fauna that are considered to be KERs and therefore those receptors that are subject to impact assessment and considered in Section 6.4 of this chapter. Following impact assessment mitigation measures are incorporated into the Proposed Project where required, to avoid potential significant impacts on these KERs.

Table 6-11 Identification of Key Ecological Receptors within the ZoI of the Proposed Project

Ecological feature or species	Reason for inclusion as a KER	KER
Designated Sites		
European sites	The following European sites have been screened in for Appropriate Assessment: › River Blackwater (Cork/Waterford) SAC › Dungarvan Harbour SPA › Blackwater Estuary SPA › Helvick Head to Ballyquin SPA › Ballymacoda Bay SPA › Mid Waterford Coastal SPA Potential for Likely Significant Effects (LSEs) on these European sites was identified within the AA screening for the Proposed Project. Potential impacts on these European sites are assessed fully in the Natura Impact Statement (NIS). In the context of this chapter these sites have been assigned **International Importance** and included as a KER.	**Yes**
Nationally designated sites	The following Nationally designated sites were identified as being within the ZoI of the Proposed Project: › Dungarvan Harbour pNHA › Blackwater River and Estuary pNHA › Ballymacoda (Clonpriest and Pillmore) pNHA [000077] These sites have been assigned **National Importance** and included as a KER.	**Yes**
Habitats (Terrestrial)		
Linear Habitats - Treelines (WL2), Hedgerows (WL1), Stone walls (BL1)	Hedgerows, treelines and associated stone walls, have been assessed as being of **Local importance (Higher Value)** as these linear habitats provide connectivity to the wider landscape and provide supporting habitat for a wide variety of faunal species. In order to facilitate construction of the Proposed Project there will be some loss of hedgerow (often associated with stone walls within the site) and treeline habitat within the Site. For this reason, these habitats have been identified for further assessment as a KER.	**Yes**

Scrub (WS1)	Less than 0.2ha of marginal scrub (WS1) is located within the of the Proposed Project footprint and therefore WS1 is not considered further as a KER.	No
Improved agricultural grassland (GA1)/Wet grassland (GS4)	Much of the Proposed Project footprint is located within Improved agricultural grassland (GA1). Some infrastructure, Proposed Turbines T9 and T10 and the proposed access road between the Proposed Turbines T13 and T14, is located in species-poor Wet grassland (WS4). These are highly modified habitats, common throughout the wider landscape and of relatively low biodiversity value. These habitats have been classified as Local Importance (Lower Value). For these reasons, these habitats have not been identified as a KERs.	No
Conifer plantation (WD4) and Recently felled woodland (WS5)	The majority of the infrastructure associated with the Proposed Wind Farm is proposed to be located within Conifer Plantation (WD4)/Recently felled woodland (WS5). It should be noted that habitat classified as WS5 within the Proposed Wind Farm site was conifer plantation that had been recently felled, no other woodland type was recorded within the Proposed Wind Farm site. Both habitats are highly modified, as well as being widespread in the wider landscape as such the loss of this habitat type was not considered to be significant. This is classified as Local Importance (Lower Value). For these reasons, this habitat has not been identified as a KER.	No
Buildings and artificial surfaces (BL3)	This habitat type is largely associated with artificial site access tracks throughout the Proposed Wind Farm site and along the Proposed 110kV Underground Cabling Route, it has little biodiversity value. For these reasons, this habitat has not been identified as a KER.	No
Aquatic habitats		
Rivers	**Eroding/upland rivers (FW1) and Depositing/lowland river (FW2)** The Site topography is incised by north-south oriented tributaries of the Brickey and Licky Rivers to the north and south of the Proposed Project, respectively, forming several metre deep gullies on steeper slopes. These Rivers and Streams have been assigned **Local Importance (Higher Value)** as they provide supporting habitat of high biodiversity value for fauna and also have the potential to act as conduits to ecological receptors downstream of the Site.	**Yes**
Drainage ditches (FW4)	**Drainage ditches (FW4)** Drainage ditches are found throughout the Proposed Wind Farm site along field boundaries and particularly throughout felled conifer woodland. They are highly modified and species poor where they occur. As such they are assessed as being local importance (lower value) and are not considered further as a KER. However, the presence of drainage ditches is considered where they have potential for connectivity with higher value watercourses, in the context of potential downstream water quality impacts.	**No**
Fauna (Terrestrial)		
Badger	Badger as an ecological receptor has been assigned **Local Importance (Higher Value)** on the basis that the habitats within the Site are	**Yes**

	utilised by a locally occurring badger population of Local Importance. Given that the species is known to inhabit the area, potential for direct and indirect impacts on badger are therefore considered further in this assessment and the species has been included as a KER for further assessment.	
Otter	While no signs of otter were recorded within the Site, signs of otter were identified downstream of the Proposed Wind Farm site, along the Licky and Brickey rivers. The River Licky forms part of the River Blackwater River (Cork/Waterford) SAC to which the Proposed Project is hydrologically linked. As otter are a QI of the SAC, this population is assigned **International Importance** and as such they are considered as a KER.	**Yes**
Pine marten	The Site provides suitable foraging and breeding habitat for pine marten, pine marten scat was recorded on Site. Pine marten as an ecological receptor has been assigned **Local Importance (Higher value)** on the basis that a locally occurring population of Local Importance is utilising the Site. Given that the species is known to inhabit the area, potential for direct and indirect impacts on pine marten are therefore considered further in this assessment and the species has been included as a KER for further assessment.	**Yes**
Red squirrel	The Site provides suitable foraging and breeding habitat for red squirrel and feeding signs were recorded on Site. Red squirrel as an ecological receptor has been assigned **Local Importance (Higher value)** on the basis that a locally occurring population of Local Importance is utilising the Site. Given that the species is known to inhabit the area, potential for direct and indirect impacts on red squirrel are therefore considered further in this assessment and the species has been included as a KER for further assessment.	**Yes**
Bats	Bats have been recorded commuting and foraging across the Site. The habitats within and surrounding the Site are utilised by a bat population of **Local Importance (Higher Value).** The Proposed Project has the potential to result in direct and indirect effects on these receptors in the form of commuting and foraging habitat loss and impacts from turbine interactions. Therefore, bats have been included as a KER for further assessment.	**Yes**
Amphibians (common frog/smooth newt)	It is considered that the Proposed Project will not result in a significant loss of suitable habitat for amphibians. No evidence of populations of amphibians being significant at more than a local level was recorded. No likely significant effects on these species are anticipated and therefore further survey/ assessment was not deemed necessary. Based on the limited observation of amphibians within the Site (one record of frogspawn), these species have been assessed as of **Local Importance (Lower Value)** and therefore are not considered to be KERs.	No
Common lizard	Common lizard as an ecological receptor has been assigned **Local Importance (Higher Value)** it is considered that the Proposed Project will not result in a significant loss of suitable foraging habitat for common lizard, the Site does support a number of heavily vegetated stone walls which may be utilised by lizards in brumation (type of dormancy similar to hibernation). Given that the construction of the Proposed Project will require some loss of stone wall habitat, it is considered that there is potential for direct impacts on lizard if removal of stone walls is undertaken during winter months, therefore, this species is included as a KER.	**Yes**

Aquatic and Fisheries Species		
Aquatic Species including Freshwater Pearl Mussel	Watercourses downstream of the Site are known to support a number of aquatic species (see Section 6.3.1.8 and Appendix 6-3). Watercourses within the Site are hydrologically linked to downstream watercourses (and aquatic fauna within them) which have been assigned as of **International Importance** due to their designation as Qualifying Interests of Blackwater River SAC (e.g. Freshwater pearl mussel, salmon, otter, lamprey spp.). A population of Freshwater pearl mussel is present downstream of Proposed Turbines T10, T11 and T12 and all Proposed Turbines except for T1, T2 and T6 are located within the freshwater pearl mussel catchment. Given that part of the Proposed Wind Farm site is located within this catchment, the potential for impacts on this population must be considered further and the species is included as a KER for further assessment. Known populations of eel downstream of the Site would also be considered of Local Importance (Higher Value). There is potential for indirect effect on these features as a result of impacts on water quality. Fish and other aquatic species are therefore included as a KER for further assessment.	**Yes**

6.4 Ecological Impact Assessment

6.4.1 Do-Nothing Effect

If the Proposed Project were not to proceed, it is unlikely that any changes would be made to the current land use practice. The majority of the lands within the Site would continue to be managed as they are now either as forestry or improved agricultural grassland and associated grazing. The other habitats identified within the Site, including stone walls, treelines, hedgerows, watercourses etc. would likely remain in a similar condition.

In some areas where scrub succession is establishing, this scrub may develop if not managed by the landowners and in time, this may undergo succession to small areas of woodland. The general biodiversity on the Site, as described in this chapter, would likely remain similar to its current state as activity levels and land use would not change.

The opportunity to harness the wind energy resource of County Waterford would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. The opportunity to generate local employment and investment would also be lost.

If the Proposed Project were not to proceed, the opportunity to implement an enhancement and management plan for Biodiversity of the area through habitat enhancement at a local scale would be lost (BMEP, Appendix 6-4).

At a global scale, climate change has been proven to have negative impacts on biodiversity, either through reduced quality of habitat, displacement due to the changing baselines, and reduced or altered food sources. With Irelands climate action plans in mind and the potential contribution of this Proposed Project in reducing dependency of fossil fuels, should it not proceed, this would contribute to the inhibition of the national targets in reducing greenhouse gas emissions in Ireland.

6.4.2 Likely Significant Effects During Construction Phase

6.4.2.1 Effects on Habitats During Construction

The table below provides details of the extent of the habitats that will be lost to facilitate the Proposed Project footprint. Buildings and artificial surfaces (BL3) as well as spoil and bare ground (ED2) are present along existing farm/forestry tracks within the footprint but were not mapped in detail and these habitats are therefore not listed below. A habitat map with Proposed Project footprint overlay is provided in Figure 6-4a, 6-4b and 6-4c.

The Proposed Project will result in the loss of species-poor wet grassland (GS4), improved agricultural grassland (GA1), recently felled (conifer) woodland (WS5) and conifer plantation (WD4), all of which have been assessed as being of Local Importance (lower value). The loss of these common and widespread habitats is not considered significant at any geographic scale as discussed in Table 6-11 above.

The effects on habitats that are identified as KERs (e.g. treelines, hedgerows etc.) are described in Table 6-13 and Table 6-14 below. The area of non-KER habitats to be lost is included in Table 6-12 - below for completeness but these habitats are not discussed further in the assessment.

Table 6-12 Habitats occurring within the Site.

Habitat (KER)	Area to be lost to Proposed Project footprint (hectares(ha)/meters(m))	KER?
Improved agricultural grassland (GA1)	11.3ha	No
Wet grassland (GS4)	1ha	No
Recently felled woodland (WS5)	3.8ha	No
WS1	0.2	No
Conifer plantation (WD4)	69.27ha	No
Hedgerows (WL1) including 177m of temporary loss due to grid connection joint bay works	2,580m	**Yes**
Treeline (WL2)	68m	**Yes**

6.4.2.1.1 *Assessment of Potential Effects on Treeline (WL2), Hedgerow (WL1)/Stonewall (BL1)*

Table 6-13 Assessment of Potential Effects on Treeline (WL2), Hedgerow (WL1)/Stonewall (BL1)

Description of Effect	Proposed Project footprint, including new internal roads, road widening and hardstand areas, as well as felling buffers around the Proposed Turbines to protect bat species occurring within the Proposed Wind Farm site will result in the loss of approx. 68 meters of treeline and approx. 2,580m of hedgerow. The Proposed 110kV Underground Cabling Route will also result in the temporary loss of approximately 177m of hedgerow.
Assessment of Significance prior to mitigation	The permanent loss of these habitats is not considered to be a significant effect at any greater than the local geographical scale, as these habitats are widespread and common within the local farmlands within and surrounding the Site. Removal of the hedgerows at this scale would not cause any significant fragmentation of habitat connectivity within the landscape. The loss of approx. 2,580m of hedgerow and 68m of treeline habitats has the potential for a permanent significant effect at the local geographic scale.
Mitigation	In order to offset the loss of linear vegetation, up to 5.5km of new hedgerow planting will be carried out along selected boundaries of fields within the Proposed Wind Farm site and along any new or realigned access tracks. The replanting areas are presented in the Biodiversity Management and Enhancement Plan (BMEP, Appendix 6-4). This will result in a net gain in this habitat within the Site. The potential for translocation of existing hedgerows requiring removal was considered. However, hedgerow condition assessments were undertaken in line with the Hedgerow Appraisal System, as outlined in Appendix 6-1. Following analysis, it was deemed that the conservation value of the existing hedgerows requiring removal was relatively low and therefore did not warrant translocation. Therefore, new hedgerow establishment is proposed. New

	hedgerow establishment is more likely to be successful than translocation in this instance with the proposed establishment and monitoring protocol in place. This will result in a higher value hedgerow type, resulting in a net gain in hedgerow habitat within the Site.
Residual Effect following Mitigation	Following implementation of mitigation, no potential for residual significant effect exists at any geographic scale. The planting of additional linear habitats as outlined above will result in a net gain of linear habitats within the Site.

6.4.2.1.2 Assessment of Potential Effects on Rivers and Associated Aquatic Fauna

Table 6-14 Assessment of Potential Effects on Rivers and Associated Aquatic Fauna

Description of Effect	The effects on water quality are fully described in Chapter 9: *Hydrology and Hydrogeology'* of this EIAR and are described here in relation specifically to ecology. This section assesses the potential for likely significant effects on riverine habitats and associated aquatic faunal species, otter, lamprey, European eel, salmonids, and other aquatic species identified during the desk study and dedicated aquatic surveys. Freshwater pearl mussel is assessed separately in Section 6.4.2.2.1 below. The Site is extensively drained by a network of natural watercourses and manmade land drains. The majority of watercourses and manmade drains at the Proposed Wind Farm site drain into the River Licky which flows southwest along the southern boundary of the Site. In addition, a number of streams flow north of the Proposed Wind Farm site in a northerly direction, joining the River Brickey downstream, which flows east towards Dungarvan Bay. The Goish flows parallel with the Proposed 110kV Underground Cabling Route. **Direct impacts (mortality of fish species):** To facilitate the construction of the Proposed Wind Farm roads, 4 no. EPA mapped watercourse crossings are required within the Proposed Wind Farm site. One of these will comprise flatbed formation over an existing crossing. Two watercourse crossings will consist of bottomless culverts. One crossing will comprise a clear-span structure. There are no instream works required for the construction of these structures. Two no. upgrades to existing EPA mapped watercourse crossings are required along the Proposed 110kV Underground Cabling Route. Both crossings will consist of flatbed formations over an existing watercourse. Instream works are not required at any watercourse crossing along the Proposed 110kV Underground Cabling Route. Therefore, there is no potential for direct impacts on any aquatic receptors associated with the Proposed Project. **Indirect impacts (water quality)** Within the Site, there are several watercourses and a number of drainage ditches across the site as outlined above. There is a risk that pollutants and sediment laden surface water run-off could discharge to surrounding ditches and watercourses, impacting on sensitive watercourses and aquatic species downstream. Potential sources of pollution to surface waters within the Site during construction include: › Silt laden surface water run-off; › Release of chemicals, including hydrocarbons, from onsite machinery, concrete and other cement-based products. › Drainage and seepage water resulting from infrastructure excavations; › Stockpiled excavated material providing a point source of exposed sediment; › Construction of the cabling trench, resulting in entrainment of sediment from the excavations during construction; and,

	› Erosion of sediment from emplaced site drainage channels. Pollution of aquatic habitats via the above could indirectly impact aquatic fauna including fish species and otter, as a result of habitat degradation, reduction in prey biomass, and toxicity.
Assessment of Significance prior to mitigation	In the absence of mitigation, there is potential for construction works associated with the Proposed Project to result in a temporary, significant indirect effect on aquatic habitats and species at a local geographic scale. This also has potential to result in impacts on aquatic receptors ranging from Local (Higher Value) to a receptor of International Importance (i.e. the Blackwater River (Cork/Waterford) SAC and associated QI species).
Mitigation	Detailed mitigation measures in relation to the protection of surface water during construction is provided in Chapter 9 of this EIAR.. The proposed setback distance/buffer of at least 50m will serve to avoid direct physical damage to watercourses, entry of suspended sediments from earthworks and drainage systems by ending drain discharges outside the buffer and allowing water to filter via percolation. The key areas of the Proposed Project footprint are all located outside of this buffer zone with the exception of some short sections of existing road upgrades and new roads, proposed watercourse crossings and existing watercourse crossings requiring upgrading. Detailed control measures in relation to the protection of surface waters and groundwater during construction, including the handling of clay pan material, are detailed in Section 9.4 of Chapter 9.
Residual Effect following Mitigation	Following the implementation of mitigation, there will be no significant residual effect on aquatic habitats or species as a result of the Proposed Project.

6.4.2.1.3 *Biosecurity*

As detailed in Section 6.3.1.5.2, a number of small stands of *Rhododendron ponticum* were recorded within the Proposed Wind Farm site. No other Third Schedule invasive species were recorded within the Site. A detailed Invasive Species Management Plan, outlining the measures required for control of rhododendron during construction of the Proposed Project is including in Appendix 6-5. With the outlined measures in place, there is no potential for significant effect to an ecological receptor as a result of spread of invasive species.

6.4.2.2 Effects on Fauna During Construction

The Proposed Project has the potential to result in habitat loss and disturbance impacts on faunal species included as KERs, see Table 6-11. Therefore, these species have been taken forward for further assessment. The following species have been brought forward for further assessment, as identified in Section 6.4.3:

- Freshwater pearl mussel
- Badger
- Otter
- Pine marten
- Red squirrel
- Bats

The potential for significant effects on aquatic species is restricted to indirect effects on their habitat resulting from water pollution. This has been assessed in Section 6.4.2.1.2 above and is not repeated below.

6.4.2.2.1 *Assessment of Potential Effects on Freshwater Pearl Mussel*

Table 6-15 Assessment of Potential Effects on Freshwater Pearl Mussel

Description of Effect	The Site is drained by a network of natural watercourses and manmade land drains, which drain into the Licky River which flows along the southern boundary of the Site. The Proposed Wind Farm site is over 300m from the Licky River, which hosts the freshwater pearl mussel population, at its closest point. The Goish flows parallel with the Proposed 110kV Underground Cabling Route. There is no hydrological connectivity between the Proposed 110kV Underground Cabling Route and the Licky River. Therefore, there is no potential for direct or indirect impact as a result of this element of the Proposed Project on freshwater pearl mussel. **Direct impacts to freshwater pearl mussels:** The Proposed Project footprint is located over 300m from the Licky River at its closest point, thereby eliminating the potential for direct physical damage. To facilitate the construction of the Proposed Wind Farm roads, 4 no. watercourse crossings (of EPA mapped watercourses) are required within the Site. One of these will comprise flatbed formation over an existing crossing. Two watercourse crossings will consist of bottomless culverts. One crossing will comprise a clear-span structure. There are no instream works required for the construction of these structures. Aquatic surveys and assessments of habitats in the vicinity of proposed new watercourse crossing locations within the Proposed Wind Farm site was undertaken. As outlined in the Aquatic Baseline Report (Appendix 6-3), watercourses at the proposed crossing locations IC 1, IC 2 and IC 3 showed evidence of historic straightening and/or dredging, with overall limited instream habitat for all fish species. Survey sites IC 4, IC 5 and IC 6 represented stretches of more naturalised upland streams, with locally good salmonid nursery habitat and European eel habitat. Survey site IC 7 was subject to ongoing livestock poaching, while the watercourse at IC 8 had a manmade rock ramp which diverted the watercourse into a secondary channel via a half-pipe. No records of this species were identified within any watercourses within the boundaries of the Proposed Wind Farm site. Therefore, there is no potential for direct impacts on freshwater pearl mussel as a result of the Proposed Project. **Indirect impacts (water quality)**

	The potential for construction impacts on the freshwater pearl mussel population was assessed following the *Guidance on Assessment and Construction Management in Margaritifera Catchments in Ireland* (Atkinson et al. 2024). This guidance outlines that potential impacts include: › Direct physical damage › Changes to river morphology and flow › Chemical and nutrient pollution › Sediment release and siltation › Effects on host fish and other biological factors A potential hydrological pathway exists through surface runoff and/or site drainage during construction, resulting in water quality impacts and therefore impacts on the freshwater pearl mussel population within the Licky River. Construction works include vegetation clearance, topsoil stripping, excavation, soil stockpiling and the movement of heavy machinery over exposed ground. These works could mobilise fine sediment and increase its transport to the river, with soil compaction potentially creating new, or more rapid, runoff pathways. Deposition of fine sediment within the riverbed could clog the interstitial spaces in gravel and cobble substrates, restrict water exchange and reduce oxygen availability. This would be of concern for freshwater pearl mussels which depend on clean, stable and well-oxygenated gravels. Freshwater pearl mussel is extremely vulnerable to environmental changes due to its complex life cycle and its sensitive habitat. As salmonids form part of the life cycle of freshwater pearl mussel, changes in salmonid populations directly affect the freshwater pearl mussel population (Atkinson et al. 2024) Accidental releases of fuels, oils or other chemicals from machinery, refuelling and material storage could result in acute toxicity to mussels and their salmonid host fish. Concrete pouring, washout water and lime-rich construction materials have potential to generate highly alkaline runoff, altering the pH and chemical quality of surface water and potentially causing an aquatic environment toxic to freshwater pearl mussel.
Assessment of Significance prior to mitigation	In the absence of mitigation, there is potential for construction works associated with the Proposed Project to result in a significant indirect effect on the freshwater pearl mussel population in the Licky River. This has potential to result in a significant effect to a receptor of International Importance (as a Qualifying Interest of the Blackwater River SAC).
Mitigation	Detailed mitigation measures in relation to the protection of surface water during construction is provided in Chapter 9 of this EIAR. The proposed setback distance/buffer of at least 50m will serve to avoid direct physical damage to watercourses, entry of suspended sediments from earthworks and drainage systems by ending drain discharges outside the buffer and allowing water to filter via percolation. The key areas of the Proposed Project footprint are all located outside of this buffer zone with the exception of some short sections of existing road upgrades and new roads, proposed watercourse crossings and existing watercourse crossings requiring upgrading. Detailed control measures in relation to the protection of surface waters and groundwater during construction, including the handling of clay pan material, are detailed in Section 9.4 of Chapter 9. In addition, a Freshwater Pearl Mussel Management Plan has been designed specifically for the Proposed Project in order to mitigate the potential impacts specific to freshwater pearl mussel, as outlined in Atkinson et al. (2024). This Plan is included as Appendix 6-6 to this EIAR. Measures are included to prevent impacts at every stage of construction and it also outlines the required ECoW supervision and surface water monitoring protocol. A Biodiversity Management and Enhancement Plan (BMEP) has been prepared with proposed measures including riparian woodland planting, hedgerow planting along watercourses within the Site and livestock-proof fencing along watercourses, to reduce

	existing pressures on freshwater pearl mussel populations such as nutrient input and sedimentation through poaching. Details of the proposed measures are provided in the BMEP in Appendix 6-4.
Residual Effect following Mitigation	Following the implementation of mitigation, there will be no significant residual effect on freshwater pearl mussel as a result of the Proposed Project.

6.4.2.2.2 Assessment of Potential Effects on Badger

Table 6-16 Assessment of Potential Impacts on badger

Description of Effect	As outlined in Section 6.3.3.1, an active badger sett was recorded within the Proposed Wind Farm site. The results of the badger surveys and the camera trap monitoring have informed the layout of the Proposed Wind Farm. Proposed Turbine T6 and associated road, hardstand and other infrastructure are all located over 100m from the recorded badger sett. All works will be carried out in accordance with TII (2005) *Guidelines for the Treatment of Badgers Prior to the Construction of National Road Schemes.* **Habitat Loss/Fragmentation** Given the nature of the Proposed Project, there will be some minimal loss of suitable badger foraging habitat i.e., agricultural grassland (GA1), conifer plantation (WD4) associated with the Proposed Project footprint. However, this habitat loss will not be significant in the context of the widespread alternative foraging habitat available within the Site and the wider area surrounding the Site. There will be no significant loss/fragmentation of badger habitat as a result of the Proposed Project. **Disturbance/Mortality** An active badger sett was identified during the ecological surveys undertaken at the Site west of Proposed Turbine T6. Numerous signs of badger activity were recorded on the Site (latrines, snuffle holes, prints) in proximity to the Proposed Wind Farm infrastructure including the proposed borrow pit northwest of the Proposed 110kV Substation and in the vicinity of T14. Taking a precautionary approach, there is potential for new badger setts to be created during the interim between baseline ecological surveying and commencement of construction, therefore a potential for impact via disturbance/mortality of badger exists should new setts be created in close proximity to the Proposed Project.
Assessment of Significance prior to mitigation	**Habitat Loss/Fragmentation** No significant overall loss or fragmentation of badger foraging habitat is anticipated at any geographic scale. **Disturbance/Mortality** Potential for direct significant effect due to mortality is considered unlikely (however precautionary mitigation is prescribed below). The potential for disturbance of occupied setts (if established prior to construction) would be considered a temporary significant effect at the local geographic scale.
Mitigation	**Habitat Loss/Fragmentation** No specific mitigation is required for habitat loss. **Disturbance/Mortality** Mitigation by design was applied to avoid impacts on the recorded badger sett, by relocating the Proposed Turbine T6 and associated infrastructure, and maintaining a 100m buffer to the recorded sett. All works will be carried out in accordance with TII (2005) *Guidelines for the Treatment of Badgers Prior to the Construction of National Road*

	Schemes. Any requirement for piling within 150m of the sett will be restricted to outside of the badger breeding season, as specified in the aforementioned document. Due to time that can elapse between the original surveys, any future planning consent and commencement of construction, a pre-construction badger survey will be carried out to identify the presence of any setts that may have been established in the intervening period, no more than 10 months in advance of construction. If a newly established sett is found within 50m of the Proposed Project footprint, further monitoring and mitigation in line with TII (2005), and in consultation with the NPWS where deemed necessary, will be prescribed as appropriate.
Residual Effect following Mitigation	Following the incorporation of the mitigation measures described above, no significant negative effects to badger is anticipated at any geographic scale.

6.4.2.2.3 Assessment of Potential Effects on Otter

Table 6-17 Assessment of Potential Impacts on otter

Description of Effect	No signs of otter were recorded within any of the watercourses within the Site. However, signs of otter activity were recorded downstream of the Proposed Wind Farm site. **Habitat Loss/Fragmentation, Disturbance, Mortality** Based on the dedicated otter surveys undertaken, no loss of otter breeding or resting places and no direct mortality related impacts on this species are anticipated. Therefore, there is no potential for the Proposed Project to result in any habitat loss/ fragmentation, disturbance or mortality for otter. To facilitate the construction of the Proposed Wind Farm roads, 4 no. new watercourse crossings (of EPA mapped watercourses) are required within the Proposed Wind Farm site. One of these will comprise flatbed formation over an existing crossing. Two watercourse crossings will consist of bottomless culverts. One crossing will comprise a clear-span structure. There are no instream works required for the construction of these structures. Given this and the locations of the structures, there will be no barrier to potential movement of otter created within the Site. There are EPA Mapped watercourse crossings along the Proposed 110kV Underground Cabling Route. No instream works are required for the Proposed Grid Connection and as such no potential for habitat loss or barrier effects to otter are anticipated. In relation to disturbance, otter are predominantly crepuscular in nature and it is anticipated that construction activity associated with the Proposed Project will be predominantly confined to daytime hours, thus minimising potential disturbance related impacts to the species. Any disturbance impacts would be temporary in nature and not considered to have a significant impact on the local otter population. **Habitat Degradation (impacts on water quality)** Evidence of otter activity was recorded downstream of the Proposed Wind Farm site, and it is assumed they may use aquatic habitats in the vicinity of the Proposed Grid Connection on occasion. There is potential for construction works to result in the run-off of silt and other pollutants such as hydrocarbons and cementitious material into watercourses downstream of the Site. This represents a potential indirect effect on otter in the form of habitat degradation/loss of prey resource through water pollution.
Assessment of Significance prior to mitigation	**Habitat Loss/Fragmentation, Disturbance, Mortality**

	Significant effects regarding habitat destruction, barrier effect, disturbance and mortality are not anticipated as a result of the Proposed Project. However, precautionary mitigations to prevent any potential for disturbance of otter potentially using watercourses for commuting and foraging are provided below. **Habitat Degradation (impacts on water quality)** In the absence of mitigation, there is potential for construction works associated with the Proposed Project to result in a temporary, significant indirect effect on aquatic habitats and species at a local geographic scale. This also has potential to result in indirect impacts on otter as a result of habitat degradation and prey availability, a receptor of International Importance (QI species of the Blackwater River SAC).
Mitigation	**Habitat Loss/Fragmentation, Disturbance, Mortality** Although significant impacts are not anticipated, precautionary mitigations are prescribed below: › A pre-commencement survey for otter will be undertaken within 150m upstream and downstream of the proposed new watercourse crossings and crossing upgrades that are required within the Site in advance of commencement of works. › If a holt is found within 150m of construction areas, the works will be undertaken in line with TII (2006)[19] and if a potential for disturbance is identified, these works will not be undertaken until a derogation licence is obtained. The requirement for a pre-construction survey does not represent a lacuna in the survey assessment but is fully in line with industry best practice. The function of the survey will be to assess any changes in baseline conditions since the time of undertaking the baseline surveys. **Habitat Degradation (impacts on water quality)** Detailed mitigation measures in relation to the protection of surface water during construction is detailed in Chapter 9 of this EIAR and as outlined in Section 6.4.2.1.2 above.
Residual Effect following Mitigation	Following the incorporation of the mitigation measures described above, no significant negative effects on otter are anticipated at any geographic scale.

6.4.2.2.4 *Assessment of Potential Effects on Red squirrel/Pine marten*

Table 6-18 Assessment of Potential Impacts on red squirrel/pine marten

Description of Effect	**Habitat Loss/Fragmentation** Red squirrel and pine marten are known to occur within the Proposed Wind Farm site. Conifer plantation provides suitable foraging and breeding habitat for both species. Conifer plantation was recorded as one of the predominant habitats within the Site. The Proposed Project will result in the loss of 69.27ha of conifer plantation, which comprises a small fraction of the conifer forestry habitat within the Site. This habitat loss will not be significant in the context of the widespread alternative foraging/breeding habitat available within the Site and the wider area surrounding the Site. As noted above there will be no significant fragmentation of red squirrel or pine marten habitat as a result of the Proposed Project.

[19] *TII (2006). Guidelines for the Treatment of Otters Prior to the Construction of National Road Schemes. Dublin: National Roads Authority.*

	Disturbance, Mortality No breeding sites (e.g. dreys, dens) were identified for either species during the ecological surveys undertaken at the Site, however, there is a potential for breeding sites to be created during the interim between baseline ecological surveying and commencement of construction. Tree felling works associated with the Proposed Project have the potential to disturb or destroy occupied dreys and or dens during construction. Both species would be a particularly vulnerable to the risk of mortality when young are to be found within breeding sites (spring/summer period). In the event that new breeding sites were established within or near the clear-felling footprint there is potential for disturbance/mortality to red squirrel or pine martin through destruction of breeding sites during construction.
Assessment of Significance prior to mitigation	**Habitat Loss/Fragmentation** No significant overall loss or fragmentation of red squirrel or pine marten habitat is anticipated at any geographic scale. **Disturbance/Mortality** Whilst no breeding sites for these species were recorded within the Site, baseline surveys identified that the Proposed Wind Farm site is being utilised by a local red squirrel and pine marten population. Potential for direct significant effect due to mortality is considered unlikely (however precautionary mitigation is prescribed below). The potential for disturbance of dens or dreys (if established prior to construction) would be considered a temporary significant effect at the local geographic scale.
Mitigation	**Habitat Loss/Fragmentation** No specific mitigation is required for habitat loss. However, as part of the biodiversity enhancement for the Site and as outlined in the BMEP (Appendix 6-4), 2 no. pine marten nest boxes and 2 no. red squirrel nest boxes will be installed within the Site. Indicative locations for installation of the boxes are shown in the BMEP. These have been chosen to avoid areas of forestry where future felling could occur. This will result in a net gain in suitable habitat for these species within the Site. **Disturbance/Mortality** Due to time that can elapse between the original surveys, any future planning consent and commencement of construction, a pre-construction survey for pine marten/red squirrel will be carried out to identify the presence of any potential new breeding sites. These surveys will focus on areas of conifer plantation to be felled and all suitable habitat within 50m of the felling footprint. Any potential breeding sites should be monitored to ascertain if they are active breeding sites. Surveys will be undertaken in line with Nature Scot[20] and TII[21] guidelines. Should active dreys/dens be identified within the blocks to be felled, the following mitigations and best practice procedures will be followed to ensure that no breeding site for either red squirrel or pine marten are impacted: › Felling works to be undertaken in October–January inclusive if an active drey or den is found, this will avoid the main breeding season (February-September) when vulnerable young are most likely to be found within breeding sites for both species.

[20] https://www.nature.scot/sites/default/files/2018-09/Species%20Planning%20Advice%20-%20red%20squirrel.pdf
[21] *TII guidance (TII, 2009, Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes. Dublin: National Roads Authority).*

	› Any breeding sites identified within the 50m buffer that wouldn't be directly affected by felling works but disturbance related impacts will be clearly marked out with an exclusion zone and works/access through these areas avoided. › Plant machinery will be turned off when not in use.
Residual Effect following Mitigation	Following the incorporation of the mitigation and enhancement measures described above, no significant residual negative effects to pine marten and red squirrel is anticipated at any geographic scale.

6.4.2.2.5 Assessment of Potential Effects on Common Lizard

Table 6-19 Assessment of Potential Effects on Common Lizard

Description of Effect	**Habitat Loss** Given the nature of the Proposed Project, there will be some minimal loss of suitable foraging habitat associated with the Proposed Wind Farm infrastructure. However, this habitat loss will not be significant in the context of the widespread alternative foraging habitat available within the site and the wider area surrounding the site. There will be no significant fragmentation of common lizard habitat as a result of the Proposed Project. **Disturbance, Mortality** The Proposed Wind Farm site supports a number of heavily vegetated stone walls which may be utilised by lizards in the winter months when they are in brumation. The removal of stone walls to facilitate the construction of the Proposed Wind Farm has the potential to have a direct impact (risk of mortality) on this species if works to remove the stone walls are undertaken in the winter months.
Assessment of Significance prior to mitigation	**Habitat Loss/Fragmentation** The loss of foraging habitat for common lizard is not considered to be significant at any geographic scale given the small scale of the habitat loss and the extensive area of available habitat locally. **Disturbance/Mortality** In the absence of mitigation, the potential for a direct effect on common lizard in relation to mortality risk during construction would be considered significant at the local geographic scale.
Mitigation	**Habitat Loss/Fragmentation** No specific mitigation is required for habitat loss. **Disturbance/Mortality** Common lizard when in brumation are in a state of sluggishness, inactivity, or torpor which would make them extremely vulnerable to works being undertaken in the winter months when they cannot quickly move out of harm's way. As such, works to remove stone walls should be undertaken March to September inclusive to avoid any potential impacts to lizard using stone walls as a winter hibernacula. Where removal of the stone walls is required within the core winter period (October – February) these will be taken down by hand under supervision of an ecologist so that any lizards (if found) can be moved to an alternative (preidentified) safe location.
Residual Effect following Mitigation	Following the incorporation of the mitigation measures described above, no significant negative effects to common lizard is anticipated at any geographic scale.

6.4.2.2.6 Assessment of Potential Effects on Bats

The impact assessment in relation to bats has been undertaken in accordance with NIEA[22] and NatureScot Guidance[23]. As per the NatureScot Guidance, wind farms present five potential risks to bats:

- Collision mortality, barotrauma and other injuries
- Loss or damage to commuting and foraging habitat
- Loss of, or damage to, roosts
- Displacement of individuals or populations
- Disturbance

For each of these five risks, the detailed knowledge of bat distribution and activity within the site has been utilised to predict the potential effects of the Proposed Project on bats. Potential risk of collision, barotrauma and other injuries relate to the operational phase and are presented in Section 6.4.3.2.

Table 6-20 Assessment of Potential Impacts on Bats

Description of Effect	**Loss of, or Damage to, Roosts** The Proposed Project site consists primarily of conifer plantation which does not provide roosting habitat of significance for bats. Seven built structures within the Proposed Wind Farm site were assessed during the 2025 survey season. Of these seven structures, one (Structure no. 6) was confirmed to support a small roost of soprano pipistrelle (2 individuals observed in autumn 2025). It is located 288m from the closest proposed turbine location. This confirmed roost and the associated linear habitat features will be avoided as part of the Proposed Project. There will be no requirement to fell trees/forestry as part of the Proposed Grid Connection. Therefore, there will be no loss of potential tree roosting habitat associated with these works. There are two EPA mapped watercourse crossings along the Proposed 110kV Underground Cabling Route. WC1, a concrete culvert was assessed as having *Negligible* roosting potential. WC2, a bridge, was assessed as having *Low* roosting potential. No bats were identified roosting within both structures, and no evidence of roosting was found during the surveys. Thirteen unmapped watercourses along the Proposed Grid Connection had no structures or features to assess for bat roost suitability. No structural modifications are required on existing bridge or culvert infrastructure associated with crossings along the Proposed 110kV Underground Cabling Route as works will be confined to the existing road infrastructure. As such, no loss or damage to potential roosting habitat is anticipated as a result of these works. No trees with potential roost features (PRFs) or structures with roosting potential were identified along the Proposed Turbine Delivery Route accommodation areas.
	Loss or Damage to Commuting and Foraging Habitat The Proposed Wind Farm site is dominated by agricultural grassland and commercial conifer plantation, which were assessed as providing a range of *Negligible* to *Moderate* suitability for commuting and foraging bats. Habitats of greater relevance to bats are limited to localised linear features, including plantation edges, hedgerows, scrub, watercourses and occasional treelines, which provide *Moderate* suitability for commuting and foraging bats within the Proposed Wind Farm site.

[22] *Northern Ireland Environment Agency Natural Environment Division (NED) published Guidance on Bat Surveys, Assessment and Mitigation for Onshore Wind Turbine Developments in Northern Ireland (NIEA, 2021).*
[23] *NatureScot published Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation. Version: August 2021 (NatureScot, 2021).*

	Direct habitat loss associated with the Proposed Project will primarily affect areas of closed canopy conifer plantation and grassland habitats of *Negligible* to *Low* suitability. These habitats do not represent key commuting or foraging features for bats and are widely available within the surrounding landscape. As such, the loss of these habitats is not expected to result in a significant reduction in foraging resources or connectivity for the local bat population. The removal of approximately 69.27ha of conifer plantation is not anticipated to result in the loss of high-value bat commuting or foraging habitat. Any localised loss of plantation edge habitat will be limited in extent and will not result in fragmentation at the site scale. Opening up previously closed canopy forestry also has the potential to increase the extent of forestry edge habitat which is known to support both foraging and commuting. As such, no net loss of linear edge, bat commuting or foraging habitat is anticipated. Approximately 2,580m of hedgerow and 68m of treeline will be lost to accommodate the Proposed Wind Farm infrastructure. There will be no net loss of linear commuting or foraging habitat as a result of Turbine Delivery Route accommodation works. Approximately 177m of hedgerow will be lost along the Proposed 110kV Underground Cabling Route, however this habitat will be reinstated once the works are completed.
	Disturbance and Displacement of Individuals or Populations During the construction phase, temporary disturbance arising from noise, vibration, increased human activity and artificial lighting may lead to localised avoidance of areas in close proximity to works. Potential sources of displacement during construction include noise and vibration associated with turbine and infrastructure construction, including rock breaking and blasting (where required), vegetation clearance, and temporary disturbance associated with construction activities. Construction activities associated with the Proposed Project, including any rock breaking or blasting required at borrow pit locations, will not occur in proximity to the confirmed soprano pipistrelle roost. The nearest borrow pit is located approximately 1.3km from the identified roost. These works will be undertaken in accordance with the construction methodology and noise control measures outlined in Chapter 12. Given the separation distance and the presence of intervening habitats, disturbance effects on roosting bats are not anticipated. Temporary disturbance may also arise from construction of the Proposed 110kV Underground Cabling Route including underground cabling works and flatbed formations at watercourse crossings. These activities will be localised and temporary in nature and will not result in fragmentation of habitat or a substantial reduction in habitat availability. No bat roosts were identified at, or in the immediate vicinity of, the Proposed 110kV Underground Cabling Route water crossing locations. Any short-term noise and vibration associated with these works are unlikely to differ significantly from existing background conditions such as road traffic to which bats in the area are already accustomed. Consequently, any construction-related displacement of individual bats is expected to be highly localised, temporary and reversible.
Assessment of Significance prior to mitigation	**Loss of, or Damage to, Roosts** No potential for significant effect with regard to the loss of, or damage to, roosting habitat as a result of the Proposed Project is anticipated.
	Loss or Damage to Commuting and Foraging Habitat Taking a precautionary approach, the loss of linear habitat required for the Proposed Project is considered significant at the local geographic scale.

	Disturbance and Displacement of Individuals or Populations No potential for significant impact as a result of disturbance during construction is predicted. However, taking a precautionary approach there is potential for significant displacement effects as a result of the use of construction phase lighting.
Mitigation	**Loss of, or Damage to, Roosts** No mitigation is required. **Loss or Damage to Commuting and Foraging Habitat** To offset this loss of linear features, approximately 5.5km of hedgerow and 3.6 ha of native woodland creation is proposed within the Site. This will result in a net gain of linear edge habitat within the Site. Planting will incorporate native species appropriate to the local area and will aim to strengthen existing habitat connectivity and ecological function. Full details of this enhancement planting are provided in the Biodiversity Management and Enhancement Plan (BMEP) (Appendix 6-4). **Disturbance or Displacement of Individuals or Populations** The following construction best practice will be employed to minimise general noise and disturbance potential: During the construction phase, plant machinery will be turned off when not in use and all plant and equipment for use will comply with the Construction Plant and Equipment Permissible Noise Levels Regulations (S.I. No. 632 of 2001). Where construction phase lighting is required, a site-specific lighting strategy in line with Section 6.1.2 of Appendix 6-2 will be implemented in accordance with current best-practice guidance to minimise light spill, maintain dark corridors and avoid illumination of retained linear features, sensitive habitats and known roost locations. With these measures in place, significant displacement effects resulting from artificial lighting are not anticipated.
Residual Effect following Mitigation	With the above mitigations in place, no potential for residual significant effect to bats as a result of construction of the Proposed Project is predicted.

6.4.3 Likely Significant Effects During Operational Phase

The operation of the Proposed Project will not result in any additional land take or loss of habitats and as such there is no potential for any significant effects in this regard.

The implementation of the Biodiversity Management and Enhancement Plan (see Appendix 6-4) will result in a net gain in habitats of biodiversity value within the Site.

6.4.3.1 Effects on Aquatic Habitats and Associated Fauna

Table 6-21 Assessment of potential effects on aquatic habitats and associated fauna during operation

Description of Effect	The effects on water quality are fully described in Chapter 9 of this EIAR and are described here in relation to ecology. This section assesses the potential for likely significant effects on watercourses and associated aquatic faunal species, including freshwater pearl mussel, otter, lamprey, European eel, salmonids, and other aquatic species identified during the desk study and dedicated aquatic surveys and likely to occur within or downstream of the Site. **Increased hardstanding/run-off impacts:** Proposed Wind Farm and Proposed 220kV Loop-in Substation Progressive replacement of the vegetated surface with impermeable surfaces could potentially result in an increase in the proportion of surface water runoff reaching the surface water drainage network. The replacement of natural surfaces (hardstand and crane pads for turbines, new and upgraded access tracks, and electrical substations) will generate 0.326 m³/s of runoff during a 6-hour duration, 10-year return period storm event. That is spread across 23 no. turbine locations, two substations, and 22.4 km of access roads. This is a small increase in average runoff and results from a relatively small area of the overall Site being developed, with the permanent built infrastructure footprint comprising approximately 33.17 ha, or 2.29% of the overall Site. Proposed 110kV Underground Cabling Route There will be no potential increase in runoff along the Proposed 110kV Underground Cabling Route. The works are located in the carriageway of the existing road corridor and no change in surface water runoff rates will result as the trench and road surface will be reinstated. **Maintenance Works** Routine activities will comprise periodic inspections and maintenance of the wind turbines, substations, meteorological mast, access road, associated infrastructure and electrical equipment. These activities will primarily use the permanent access-road network, and no significant excavation or ground disturbance will be required during normal operation. Maintenance is a repeated activity which includes clearing and removal of vegetation and accumulated sediments, in addition to checks and repairs of hardstand damages and replacements necessary for electro-mechanical installations. **Freshwater pearl mussel** Increased hardstanding/run-off and maintenance works can, as described above, affect the chemical and biological composition of a watercourse and cause hydromorphological changes, through sedimentation. Freshwater pearl mussel is extremely vulnerable to environmental changes due to its complex life cycle and its sensitive habitat. Sedimentation settling in the habitat can deprive the young freshwater pearl mussels of oxygen and prevent juveniles for moving into the substratum. As filter-feeders, this species is also particularly sensitive to suspended solids in the waterbody

	due to pollution events or sedimentation. As salmonids form part of the life cycle of freshwater pearl mussel, changes in salmonid populations directly affect the freshwater pearl mussel population (Atkinson et al. 2024).
Assessment of Significance prior to mitigation	In the absence of mitigation and following the precautionary principle, there is potential for the operational stage of the Proposed Project to result in a significant indirect effect on the identified aquatic habitats and species at a local geographic scale in the form of sediment laden run-off during storm rainfall events. This would also result in impacts on aquatic receptors ranging from Local (Higher Value) to a receptor of International Importance (i.e. the Blackwater River (Cork/Waterford) SAC and associated QI species).
Mitigation	The operational phase drainage system of the Proposed Project will be installed and water will be led via swales to settling basins/ponds, prior to discharge to ground, therefore, there will be no significant flows or flood risk added to watercourses. Drains, check dams and settling basins will be visually checked and maintained, with vegetation and built-up sediment removed, which will prevent sediment and organic matter being carried to the Licky, Goish and Brickey Rivers. These mitigations will prevent impacts via water chemistry alteration and sedimentation. In addition, as outlined in the Biodiversity Management and Enhancement Plan, measures including riparian woodland planting along a 100m stretch of the River Licky upstream of the recorded freshwater pearl mussel population, hedgerow planting along watercourses within the Site and livestock-proof fencing along watercourses, will reduce existing pressures on freshwater pearl mussel populations such as nutrient input and sedimentation through poaching. Details of the measures and the receiving environments are provided in the BMEP in Appendix 6-4.
Residual Effect following Mitigation	Following the implementation of mitigation, there will be no significant residual effect on aquatic habitats or species as a result of operation of the Proposed Project.

6.4.3.2 Effects on Fauna during Operation

Potential for significant effects on bat species resulting from the operation of the Proposed Project were identified and therefore, these are discussed further below.

There is no potential for significant negative effects on non-volant terrestrial fauna (otter, badger, pine marten, red squirrel) or reptiles during the operational phase of the Proposed Project. Implementation of the BMEP measures during the operational phase of the development will result in a net gain of linear features of value for local faunal species, providing more foraging opportunities for fauna, as well as additional shelter for birds and mammals, and commuting links for bats Additionally den/nesting boxes provided for red squirrel and pine marten will provide additional suitable breeding sites for these species within the Proposed Project.

6.4.3.2.1 *Assessment of Potential Effects on Bats During Operation*

Table 6-22 Assessment of Potential Effects on Bats

Description of Effect	**Collision Risk** Full details of the site-specific collision risk assessment for bats are provided in the Bat Report (Appendix 6-2), with a summary provided here for the purpose of this impact assessment. Overall collision risk for bat species was determined in accordance with Table 3b of NatureScot (2021) guidance, by cross-referencing the site risk level (Medium) with species-specific activity categories. Assessments were undertaken for both median activity (representing typical conditions) and maximum activity (representing peak levels). NatureScot recommends using the most appropriate measure (i.e. median or maximum) to determine overall risk. The following high-risk species (which utilise linear landscape features for commuting but also forage more widely in open habitats) were recorded during the dedicated surveys: › Leisler's bat, › Common pipistrelle › Soprano pipistrelle › Nathusius' pipistrelle Following NatureScot (2021) guidance and the site-specific activity thresholds, typical site-level collision risk for high-risk bat species at the Proposed Wind Farm was assessed as *Low*. At peak activity levels, the risk assessment reached *Medium* for Leisler's bat, common pipistrelle, and soprano pipistrelle. A historically recorded Leisler's bat roost has been known to occur within the Tallow pNHA. The roost record is located over 17km from the closest proposed turbine. This distance is beyond the 13.4km Irish Leisler's bat foraging range reported by Shiel et al. (1999) and cited in BCI (2026). Given this distance, potential for impacts on this roost is not anticipated. As per NatureScot guidance there is no requirement to complete an Overall Risk Assessment for low-risk species. During the extensive suite of surveys undertaken the following low-risk species were recorded: › *Myotis* spp. › Brown long-eared bat Overall activity levels were *Low* for the above species. Therefore, no significant collision related effects are anticipated for low-collision risk species.

	Disturbance and Displacement During operation, bats may exhibit avoidance behaviour in the immediate vicinity of turbines. However, available evidence indicates that any such effect is generally confined to a relatively small area surrounding individual turbines and does not typically result in displacement across wider landscapes. Baseline surveys recorded generally *Low* to *Moderate* levels of bat activity across the Proposed Wind Farm, with activity concentrated along habitat edges and linear features rather than within the turbine envelope itself. No evidence was recorded to indicate intensive use of the turbine areas by large numbers of bats or the presence of habitats supporting regionally important concentrations of commuting or foraging bats. Given the limited extent of habitat loss, the retention of the majority of commuting and foraging features, the avoidance of confirmed roosts, and the provision of habitat enhancement measures, any operational displacement is expected to be restricted to a small number of individual bats within the immediate vicinity of turbines. Operational artificial lighting has the potential to alter bat commuting and foraging behaviour, particularly for light-sensitive species such as brown long-eared bat and *Myotis* species. With regard to operational noise, all infrastructure associated with the Proposed Project will be specified, installed and maintained in accordance with relevant standards and manufacturer guidance to minimise unnecessary noise generation and the potential for unintended high-frequency noise emissions. No significant impacts to bats as a result of operational noise is anticipated.
Assessment of Significance prior to mitigation	No significant collision related effects are anticipated on *Myotis* spp. and brown long-eared bats, as the species are considered low-risk for collision. A potential for long-term negative effects was identified for Leisler's bat, Common and Soprano pipistrelles due to the medium levels of activity recorded within the Proposed Wind Farm site and their classification as high-risk species. The potential unmitigated effects on these high-risk species as a result of their potential interaction with wind turbines are considered a long-term significant effect at a local geographic scale.
Mitigation	**Collision Risk** Detailed mitigation measures in relation to bats are provided in the Bat Report (see Appendix 6-2) and summarised below. Mitigation measures are proposed together with post-construction monitoring and are summarised as follows: › Introduce felling buffers around turbines › Implement blade feathering as a standard › A minimum of three years operational monitoring (using carcass searching in tandem with activity surveys) to assess changes in bat activity patterns post construction and to monitor the implementation of the mitigation strategy. › Adaptive mitigation strategy based on the results of the post-construction monitoring. **Operational Lighting** During the operational phase, lighting associated with the Proposed Project will be kept to the minimum necessary for operation, maintenance, safety and security purposes. Turbines will not be continuously illuminated, other than where aviation lighting is required. External lighting associated with the proposed substations and security compounds will be motion-activated and will not be continuously illuminated. Luminaires will be fully shielded, have a 0% upward light ratio and be directed away from retained boundary habitats.

	All permanent lighting (excluding aviation lighting) will utilise warm-spectrum LED sources with a correlated colour temperature of 3000K or less. Lighting will be designed and operated to maintain dark commuting corridors along retained habitat features and avoid fragmentation of bat commuting routes. A buffer of dark, unlit habitat will be maintained between the proposed substations fence line and the nearest retained treeline or hedgerow. The lighting measures will also follow Dark Sky Ireland principles by ensuring that lighting is used only where necessary, appropriately directed and maintained at the minimum intensity required for operational and safety purposes. With regard to the potential for lighting to increase collision risk, it is noted that there will be limited illumination of the turbines in the form of aviation lighting. Post-construction monitoring will be carried out (as detailed in Appendix 6-2) to assess any potential changes in bat activity patterns and collision risk. Significant effects as a result of lighting are not anticipated; however, if in the course of this monitoring, any potential for significant effects on bats is identified, the site-specific mitigation measures will be reviewed and any changes necessary will be implemented to avoid any such impacts.
Residual Effect following Mitigation	Taking into consideration the sensitive design of the Proposed Project, the proposed best practice and adaptive mitigation measures, significant residual effects on bats as a result of operation of the Proposed Project are not anticipated.

6.4.4 Likely Significant Effects During Decommissioning Phase

Decommissioning is fully described in Chapter 4 (Section 4.11). There will be no additional habitat loss associated with the decommissioning of the Proposed Project and therefore there will be no significant effects in this regard.

The Proposed Turbines are expected to have a lifespan of approximately 35 years. Following the end of their useful life, the equipment may be replaced with a new technology, subject to planning permission being obtained, or the Proposed Turbines may be decommissioned.

Upon decommissioning of the Proposed Wind Farm, the Proposed Turbines, the telecommunications relay mast and the meteorological mast will be disassembled in reverse order to how they were erected. The turbines will be disassembled with a similar model of crane that was used for their erection. All above ground turbine and mast components would be separated and removed off-site for recycling. Turbine and mast foundations would remain underground and would be covered with earth and allowed to revegetate. Leaving the foundations in-situ is considered a more environmentally prudent option, as to remove that volume of reinforced concrete from the ground could result in significant temporary environment nuisances such as noise, dust and/or vibration. Site roadways will be used during the operational phase by farm machinery and will provide a useful means of extracting the commercial forestry crop which exists on at the Site and therefore will be retained post decommissioning to facilitate these activities.

The 33kV underground electrical cabling connecting the proposed turbines to the Proposed 110kV Substation will be removed from the cable ducts. The cabling will be pulled from the cable ducts using a mechanical winch which will extract the cable and re-roll it on to a cable drum. This will be undertaken at the original cable jointing pits which will be excavated using a mechanical excavator and will be fully re-instated once the cables are removed. The cable ducting will be left in-situ as it is considered the most environmentally prudent option, avoiding unnecessary excavation and soil disturbance. The cable materials will be transferred to a suitable recycling or recovery facility.

The Proposed 110kV Substation and Proposed 110kV Underground Cabling Route along with the Proposed 220kV Loop-in Substation, will remain in place as they will form part of the National Grid under the ownership and control of the ESBN and EirGrid.

A Decommissioning Plan has been prepared (Appendix 4-6). The Decommissioning Plan will be updated prior to the end of the operational period in line with decommissioning methodologies that may exist at the time and will agree with the competent authority at that time.

As noted in the Scottish Natural Heritage report (SNH) *Research and Guidance on Restoration and Decommissioning of Onshore Wind Farms* (SNH, 2013) reinstatement proposals for a wind farm are made approximately 30 years in advance, so within the lifespan of the Proposed Wind Farm, technological advances and preferred approaches to reinstatement are likely to change. According to the SNH guidance, it is therefore:

> *"best practice not to limit options too far in advance of actual decommissioning but to maintain informed flexibility until close to the end-of-life of the wind farm".*

The same mitigation to prevent significant impacts on water quality and associated aquatic fauna and other terrestrial fauna during construction will be required to be implemented during the Decommissioning Phase.

It can be concluded that following the implementation of preventative mitigation, there is no potential for the decommissioning of the Proposed Project to result in significant effects on biodiversity.

6.4.5 Effects on Designated Sites

6.4.5.1 European Designated Sites

In relation to European sites, an Appropriate Assessment Screening Report and Natura Impact Statement (NIS) have been prepared to provide the Competent Authority with the information necessary to complete an Appropriate Assessment for the Proposed Project in compliance with Article 6(3) of the Habitats Directive.

As per the EPA Guidance (2022), *"A biodiversity section of an EIAR, for example, should not repeat the detailed assessment of potential effects on European sites contained in documentation prepared as part of the Appropriate Assessment process, but it should refer to the findings of that separate assessment in the context of likely significant effects on the environment, as required by the EIA Directive".* This section, therefore, provides a summary of the key assessment findings with regard to potential impacts on European sites. The Stage 1 Screening Assessment concluded as follows:

'It cannot be excluded beyond reasonable scientific doubt, in view of best scientific knowledge, on the basis of objective information and in light of the conservation objectives of the relevant European sites, that the Proposed Project, individually or in-combination with other plans and projects, would be likely to have a significant effect on the following European sites:

- *Blackwater River (Cork/Waterford) SAC*
- *Dungarvan Harbour SPA*
- *Blackwater Estuary SPA*
- *Helvick Head to Ballyquin SPA*
- *Mid-Waterford Coast SPA*
- *Ballymacoda Bay SPA*

As a result, an Appropriate Assessment (AA) of the Proposed Project is required.'

The findings presented in the NIS are that:

'Where the potential for any adverse effect on any European Site has been identified, the pathway by which any such effect may occur has been robustly blocked through the use of avoidance, appropriate design and mitigation measures as set out within this report and its appendices. The measures ensure that the construction and operation of the Proposed Project does not adversely affect the integrity of European sites.

Therefore, it can be objectively concluded that the Proposed Project, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site'.

6.4.5.2 Nationally Designated Sites

The following pNHAs were identified to be within the Likely Zone of Influence of the Proposed Project:

- Dungarvan Harbour pNHA [000663]
- Blackwater River and Estuary pNHA [000072]
- Ballymacoda (Clonpriest and Pillmore) pNHA [000077]

These pNHAs are assessed under their European site designations within the NIS which accompanies this application. They are assessed under their national designation as pNHA in this chapter.

The identified pathway for impact on Dungarvan Harbour pNHA and Blackwater River and Estuary pNHA is via water quality deterioration. As discussed in Section 6.4.2.1.2 and 6.4.3.1, a range of mitigation measures are in place to protect surface water receptors, groundwater receptors, aquatic habitats and species during construction and operation of the Proposed Project. Further detail with regard to these measures are provided in Chapter 9 of this EIAR. With the prescribed mitigation measures in place, there is no potential for impact on the designated sites via the identified pathways.

A pathway for impact on bird species associated with Dungarvan Harbour pNHA and Ballymacoda (Clonpriest and Pillmore) pNHA. The potential for impact on bird species is assessed in Chapter 7 of this EIAR.

6.5 Cumulative Impact

The Proposed Project was considered in combination with other plans and projects in the area that could result in cumulative impacts on the KERs identified within this chapter. This included a review of online planning registers and served to identify past, present and future plans and projects, their activities and their predicted environmental effects. The cumulative assessment methodology and projects considered are outlined in Section 2.9 of Chapter 2: '*Background of the Proposed Project*'. The full list of projects has been considered and relevant projects are discussed in this section.

6.5.1 Assessment of Plans

The following development plans have been reviewed and taken into consideration as part of this assessment:

- Waterford City & County Development Plan 2022–2028
- 4th National Biodiversity Action Plan 2023-2027
- Regional Spatial and Economic Strategy for the Southern Region (2020-2032)

The review focused on policies and objectives that relate to designated sites for nature conservation, biodiversity and protected species. Policies and objectives relating to the conservation of Annex I habitats were also reviewed. An overview of the search results with regard to plans is provided in Table 6-23.

Potential for cumulative impacts on European sites are considered within the NIS that accompanies this application.

Table 6-23 Assessment of Plans

Plans	Key Policies/Issues/Objectives Directly Related To European Sites, Biodiversity and Sustainable Development In The Zone of Influence	Assessment of Proposed Project compliance with policy and potential for cumulative effects with the Plan
Waterford City & County Development Plan 2022–2028 [24]	**ENV 01:** Through implementation of the Development Plan we will cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management, including compliance with EU Directives - including the Habitats Directive (92/43/EEC, as amended), the Water Framework Directive(2000/60/EC), the Birds Directive (2009/147/EC), the Environmental Impact Assessment Directive (2011/92/EU, as amended by 2014/52/EC) and the Strategic Environmental Assessment Directive (2001/42/EC) – and relevant transposing Regulations.	The Development plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to the biodiversity, protected species and designated sites. The overall aim of the policies and objectives set out in the County Development Plan in relation to biodiversity aim to protect and enhance biodiversity within the county. No potential for negative cumulative impacts was identified when considered in conjunction with the Proposed Project. No developments or projects identified within the Development Plan were found to occur in the wider area surrounding the Proposed Project. The BMEP (Appendix 6-4) for the Proposed Project aims to implement and align with Green Infrastructure policies outlined in the Waterford City & County Development Plan by enhancing biodiversity within the Proposed Wind Farm site, in particular through providing an overall net gain in linear habitats and woodland throughout the Proposed Wind Farm site.
	BD 01: We will protect and conserve all sites designated or proposed for designation as sites of nature conservation value (Natura 2000 Network, Ramsar Sites, NHAs, pNHAs, Sites of Local Biodiversity Interest, Geological Heritage Sites, TPOs) and protect ecological corridors and networks that connect areas of high conservation value such as woodlands, hedgerows, earth banks and wetlands. We will contribute towards the protection and enhancement of biodiversity and ecological connectivity, including woodlands, trees, hedgerows, semi-natural grasslands, rivers, streams, natural springs, wetlands, the coastline, geological and geo-morphological systems, other landscape features, natural lighting conditions, and associated wildlife where these form part of the ecological network and/or may be considered as ecological corridors or stepping stones in the context of Article 10 of the Habitats Directive.	
	BD 02: In support of the All-Ireland Pollinator Plan we will seek to maintain and enhance Waterford's biodiversity in favourable conservation condition so that environmental resilience and net gain in biodiversity enhancement and creation are achieved during implementation of this plan.	
	BD 03: All proposed developments will be considered in terms of compliance with the standards and legal requirements of the following where they apply;	

[24] *https://consult.waterfordcouncil.ie/en/consultation/waterford-city-county-development-plan-2022-%E2%80%93-2028*

	• Appropriate Assessment of Plans and Projects in Ireland-Guidance for Planning Authorities Department of Housing, Local Government and Heritage (2021). • TII Guidelines on Ecological Impact Assessment (2009) • All-Ireland Pollinator Plan (2021) • Planning for Watercourses in the Urban Environment (2020) • Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites.	
	BD 04: Appropriate Assessment All projects and plans arising from this Plan will be screened for the need to undertake Appropriate Assessment under Article 6 of the Habitats Directive. A plan or project will only be authorised after the competent authority has ascertained, based on scientific evidence, Screening for Appropriate Assessment, and subsequent Appropriate Assessment where necessary, that: 1. The plan or project will not give rise to significant direct, indirect or secondary effects on the conservation objectives of any European site (either individually or in combination with other plans or projects); or 2. The plan or project will have significant adverse effects on the integrity of any European site (that does not host a priority natural habitat type/and or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000; or 3. The plan or project will have an adverse effect on the integrity of any European site (that hosts a natural habitat type and/or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons for overriding public interest, restricted to reasons of human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other	

	imperative reasons of overriding public interest. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary o ensure the protection of the overall coherence of Natura 2000.	
	BD 05: Protection of European Sites Projects giving rise to adverse effects on the integrity of European sites (cumulatively, directly or indirectly) arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall not be permitted except as provided for in Article 6(4) of the Habitats Directive, viz. There must be a) no alternative solution available, b) imperative reasons of overriding public interest for the project to proceed; and c) Adequate compensatory measures in place.	
	BD 06: Management Plans Article 6(1) of the Habitats Directive requires that Member States establish the necessary conservation measures for European sites involving, if need be, appropriate management plans specifically designed for the sites or integrated into other Development Plans. The Local Authority support the preparation and implementation of management plans for the conservation of Natura 2000 sites, pNHAs and Sites of Local Biodiversity as per appropriate.	
	BD 07: We will protect plant and animal species and habitats which have been identified by the EU Habitats Directive (1997), EU Bird Directive (1979), Wildlife Act (1976) and Wildlife (Amendment) Act 2000 and the Flora Protection Order (2015) and ensure development does not impact adversely on wildlife species or the integrity and habitat value of the site.	
	BD 08: We will assess all proposed developments at each level of the Development Planning process from City & County Development Plan, Local Area Plan to project level to determine potential for significant effects on the conservation objectives and /or adverse impact on the integrity of the Natura 2000 network and ensure that the requirements of Articles 6(3) and 6(4) of the Habitats Directive are fully satisfied.	

	BD 09: We will ensure a sufficient level of information is provided in development applications to enable a fully informed assessment of impacts on biodiversity to be made. Ecological impact assessments submitted in support of development proposals shall be carried out by appropriately qualified professionals and ecological survey work carried out at optimal survey time to ensure accurate collation of ecological data.	
4th National Biodiversity Action Plan 2023-2030	Irelands 4th National Biodiversity Action Plan 2023-2030 (Department of Housing, Local Government and Heritage, 2024) (the "**NBAP**"). The NBAP strives for a "whole of government, whole of society" approach to the governance and conservation of biodiversity. It demonstrates Ireland's continuing commitment to meeting and acting on its obligations to protect Ireland's biodiversity for the benefit of future generations and will implement this through a number of key targets, actions and objectives. The Wildlife (Amendment) Act 2023 introduced a new public sector duty on biodiversity. The legislation provides that every public body, as listed in the Act, is obliged to have regard to the objectives and targets in the NBAP. The NBAP sets out five key objectives as follows.	The objectives set out in the NBAP aim to protect and enhance and promote biodiversity, nature restoration in Ireland and also contribute to international biodiversity initiative. Mitigation and enhancement measures as outlined in the EIAR and NIS for the Proposed Project also aim to protect and enhance biodiversity as such no cumulative impacts were identified upon review of the Plan in conjunction with the Proposed Project. The Proposed Project will not contravene the proposed outcomes of the NBAP.
	Objective 1: Adopt a Whole-of Government, Whole of-Society Approach to Biodiversity. Proposed actions include capacity and resource reviews across Government; determining responsibilities for the expanding biodiversity agenda providing support for communities, citizen scientists and business; and mechanisms for the governance and review of this National Biodiversity Action Plan.	
	Objective 2: Meet Urgent Conservation and Restoration Needs. Supporting actions will build on existing conservation measures. Efforts to tackle Invasive Alien Species will be elevated. The protected area network will be expanded to include the Marine Protected Areas. The ambition of the EU Biodiversity Strategy will be considered as part of an evolving work programme across Government.	
	Objective 3: Secure Nature's Contribution to People. Actions highlight the relationship between nature and people in Ireland. These include recognising the tangible and intangible values of biodiversity, promoting nature's importance to our culture and heritage and recognising how	

	biodiversity supports our society and our economy.	
	Objective 4: Enhance the Evidence Base for Action on Biodiversity. This objective focuses on biodiversity research needs, as well as the development and strengthening of long-term monitoring programmes that will underpin and strengthen future decision-making. Action will also focus on collaboration to advance ecosystem accounting that will contribute towards natural capital accounts.	
	Objective 5: Strengthen Ireland's Contribution to International Biodiversity Initiatives. Collaboration with other countries and across the island of Ireland will play a key role in the realisation of this Objective. Ireland will strengthen its contribution to international biodiversity initiatives and international governance processes, such as the United Nations Convention on Biological Diversity.	
Regional Spatial and Economic Strategy for the Southern Region (2020-2032)	**RPO 1.b.** The RSES seeks to protect, manage, and through enhanced ecological connectivity, improve the coherence of the Natura 2000 Network in the Southern Region.	The Regional Spatial and Economic Strategy for the Southern Region was comprehensively reviewed, with particular reference to Policies and Objectives that relate to the Natura 2000 network and other natural heritage interests. No potential for cumulative effects when considered in conjunction with the Proposed Project were identified.
	RPO 5. Population Growth and Environmental Criteria Increased population growth should be planned with regard to environmental criteria, including: • Assimilative capacity of the receiving environment; • Proximity of Natura 2000 sites and potential for adverse effects on these sites, and their conservation objectives; • Areas with flood potential.	
	RPO 117 Flood Risk Management and Biodiversity It is an objective to avail of opportunities to enhance biodiversity and amenity and to ensure the protection of environmentally sensitive sites and habitats, including where flood risk management measures are planned. Plans and projects that have the potential to negatively impact on Natura 2000 sites are subject to the requirements of the Habitats Directive	

	RPO 124 Green Infrastructure a. It is an objective to promote the concept of connecting corridors for the movement of wildlife and encourage the retention and creation of features of biodiversity value, ecological corridors and networks that connect areas of high conservation value such as woodlands, hedgerows, earth banks, watercourses and wetlands. The RSES recognises the necessity of protecting such corridors and the necessity to encourage the management of features of the landscape that support the Natura 2000 network; b. Green infrastructure will be integrated into the preparation of statutory land-use plans in the Region, which will include identifying Green infrastructure and strengthening this network; c. All Development Plans and Local Area Plans shall protect, enhance, provide and manage Green infrastructure in an integrated and coherent manner addressing the themes of biodiversity protection, water management and climate action; and should also have regard to the required targets in relation to the conservation of European sites, other nature conservation sites, ecological networks, and protected species;	

6.5.2 Assessment of Projects

As described in Section 2.9 of the EIAR, relevant projects have been assessed in-combination with the Proposed Project and include planning applications in the vicinity of the Site, within the zone of influence of all habitats and species considered in this report and include other wind energy applications within the wider area. These have not been repeated here to reduce the duplication of information within this EIAR. However, they have been fully considered in the assessment with further detail provided below. Section 6.5.3 concludes on their potential for impact on biodiversity.

The table below provides the cumulative study areas for individual EIAR topics that are also relevant in relation to ecological receptors i.e., hydrological connectivity is important for assessing potential for effects on designated sites. Potential for cumulative effects in relation to birds is assessed separately within Chapter 7 of this EIAR.

Table 6-24 Cumulative Study Areas in relation to ecological receptors (birds are assessed separately within Chapter 7 of this EIAR)

Individual Topic	Maximum Extent	Justification
Biodiversity (excluding birds)	10km from the Proposed Wind Farm site. 250m from Proposed 110kV Underground Cabling Route. Consideration for the biodiversity cumulative extent is also given to the Hydrology and Hydrogeology cumulative geographical boundaries.	Using the precautionary approach and given the nature and scale of the Proposed Project, the geographical boundary for terrestrial ecological aspects, i.e. habitats and terrestrial fauna, is 10 km for cumulative assessment for the Proposed Wind Farm site in line with NatureScot (2021) guidance for assessment of bats. This geographical boundary is considered commensurate for other terrestrial ecological KERs identified within the Proposed Wind Farm site. The geographical boundary from the Proposed Grid Connection is 250m, which is considered commensurate with the type and scale of this development type, and the KERs identified in the vicinity of the Proposed Grid Connection.
Hydrology and Hydrogeology	**Proposed Project** Goish and Colligan subcatchments for large infrastructural developments such as wind farms, energy and public transport developments. River Sub Basins for all smaller proposed, permitted or existing plans or projects (i.e. private and commercial type developments).	Regional surface water catchments are used for cumulative impact assessment with regard to large infrastructural developments such as wind farms, energy and public transport developments. The potential for cumulative effects for these developments likely exists on a regional catchment scale (i.e. significant works likely existing in several sub-basins). Therefore, other wind-farm developments are considered within the Blackwater Catchment and Colligan-Mahon Catchment for cumulative effects. River Sub Basins are used for smaller developments (i.e. private & commercial type developments). These developments are not likely to present a significant cumulative impact risk on a regional catchment scale as any effects would likely be imperceptible as a result of the setback distances and localised nature of the associated works. Given the nature and scale of the proposed works and the lack of hydrological cumulative impact potential

		beyond the river sub basin scale, the Water cumulative study area is defined by river sub basins in which the Proposed Wind Farm is located. Due to the narrow nature of the Proposed 110kV Underground Cabling Route trench (~0.6m wide), a 250m buffer zone is an appropriate scale when considering potential cumulative effects on the water environment.

6.5.2.1 Proposed Grid Connection

A desk-based planning search was undertaken to identify permitted developments within 250m vicinity of the Proposed 110kV Underground Cabling Route. A total of 7 developments were identified within this area and consisted predominantly of small scale projects including the construction of individual private dwellings, extensions to existing dwellings and buildings, as well as agricultural buildings. The following project was also reviewed:

Pl ref: 22407 - *Junction & Bend Widening Works comprising road widening at the junction of the L2024 with the L2022 in Carronahyla townland; widening of the junction of the L2022 with the L6077 and widening of two bends along the L6077 in Knocknaglogh Upper townland; and ancillary works. The proposed development will facilitate the delivery of wind turbine blades along the roads from Pulla crossroads on the N25, to Knocknamona Windfarm Site Entrance, at Knocknaglogh Lower on the L6077. This application is accompanied by an Environmental Impact Assessment screening report and an Appropriate Assessment Report (Natura Impact Statement).*

The online planning files for this project were reviewed[25]. The Blackwater River (Cork/Waterford) SAC was screened in for Appropriate Assessment, and it was concluded that there was no potential for residual adverse effect with the mitigation implemented. The habitats at the works areas are described as "generally of lower value", with no direct connection to watercourses. Given the scale and nature of the works associated with the Proposed 110kV Underground Cabling Route, no potential for significant cumulative effect with the projects reviewed was identified.

[25] *https://www.pleanala.ie/anbordpleanala/media/abp/cases/reports/314/r314219.pdf*

6.5.2.2 Other Wind Farm Projects

A list of projects considered as part of the cumulative assessment is provided in Appendix 2-3. For the purposes of this cumulative assessment, wind farms within a 10-kilometre radius of the Proposed Wind Farm site were considered in further detail below. An additional wind farm at a distance of approx. 11km (turbine to turbine) was also considered on a precautionary basis. Five wind farms were identified as being within the cumulative study boundary as outlined in Table 6-25 below.

Table 6-25 Wind farm projects considered to be within the cumulative study area (Biodiversity) of the Proposed Project

Wind Farm	Planning Status	Number of Turbines	Separation Distance (turbine to turbine)	County
Knocknamona Wind Farm	Permitted	8	c.3km	Co. Waterford
Woodhouse Wind Farm	Existing	8	c.4.9km	Co. Waterford
Ballycurreen Wind Farm	Existing	2	c.5.9km	Co. Waterford
Moanbrack Wind Farm	Proposed	2	c.5.6km	Co. Waterford
Lyrenacarriga Wind Farm	Permitted	17	c.11km	Co. Waterford and Cork

6.5.2.2.1 *Knocknamona Wind Farm*

The potential for the Proposed Project to result in cumulative or in combination effects when assessed alongside the permitted Knocknamona Wind Farm was considered. The planning file was reviewed on the Waterford County Council Planning Register[26]. The wind farm is located within commercial forestry habitat, felled woodland and improved agricultural grassland west of the Proposed Wind Farm, within the same hydrological sub catchments.

The potential for the Proposed Project to result in cumulative or in combination effects when assessed alongside the permitted Knocknamona Wind Farm was considered. The EIAR identifies the following as KERs: hedgerows, common frog, smooth newt, badger, pine marten, Irish stoat, red squirrel and bats. The Blackwater River (Cork/Waterford) SAC, Blackwater Estuary SPA and Dungarvan Harbour SPA are also identified as KERs. The assessment identifies potential effects on downstream aquatic receptors and designated sites associated with deterioration in water quality and the potential introduction or spread of invasive species. It also identifies potential effects on bats associated with habitat loss, disturbance/displacement and collision risk. However, the Knocknamona EIAR concludes that, with the implementation of the mitigation measures outlined therein, significant residual effects on the identified KERs are not predicted.

Similarly, associated with the Proposed Project, identified KERs include hedgerows, badger, pine marten, red squirrel and bats and aquatic receptors. However, given the mitigations prescribed within this chapter, and the biodiversity enhancement measures proposed within the BMEP, no potential for significant cumulative effect with the Knocknamona Wind Farm has been identified in relation to biodiversity (excluding birds).

6.5.2.2.2 *Woodhouse Wind Farm*

[26] *https://ecopowerknocknamona.ie/wp-content/uploads/2026/03/KWF-2026-Non-Technical-Summary.pdf*

The potential for the Proposed Project to result in cumulative or in combination effects when assessed alongside the existing Woodhouse Wind Farm was considered. The wind farm is located within improved agricultural grassland 4.9km west of the Proposed Wind Farm, within the same hydrological sub catchments. Given that this wind farm is already existing, there is no potential for cumulative construction-related impacts. Given the mitigations prescribed within this chapter, and the biodiversity enhancement measures proposed within the BMEP, no potential for significant cumulative effect with the Woodhouse Wind Farm has been identified in relation to biodiversity (excluding birds).

6.5.2.2.3 *Ballycurreen Wind Farm*

The potential for the Proposed Project to result in cumulative or in combination effects when assessed alongside the existing Ballycurreen Wind Farm was considered. The wind farm is approx. 5.9km away and is small scale, comprising just 2 no. turbines. Given that this wind farm is already existing, there is no potential for cumulative construction-related impacts. Given the mitigations prescribed within this chapter, and the biodiversity enhancement measures proposed within the BMEP, no potential for significant cumulative effect with the Ballycurreen Wind Farm has been identified in relation to biodiversity (excluding birds).

6.5.2.2.4 *Moanbrack Wind Farm*

This project currently has an incomplete application status and is located 5.6km east of the Proposed Wind Farm. The project comprises 2 turbines and the area is located on agricultural grasslands and conifer plantation. The proposed Moanbrack Wind Farm is located within the same hydrological catchment as the Proposed Project. The planning file was reviewed on the Waterford County Council Planning Register[27]. The Biodiversity Chapter of the EIAR was reviewed as part of this assessment. The EIAR identifies the following as KERs: hedgerow, wet grassland, eroding upland river, otter, bats, badger, Irish hare, hedgehog, common frog, smooth newt, common lizard and the brown trout/fisheries resource of the Baile Uí Churraoin Thuaidh Stream. The Blackwater SAC, Dungarvan Harbour SPA, Helvick Head to Ballyquin SPA and Mid-Waterford Coast SPA are identified as KERs. The assessment identifies potential effects on downstream aquatic receptors associated with the release of suspended solids, nutrients, hydrocarbons and cementitious materials and potential effects on bats through habitat loss, disturbance and collision risk.

The potential for in-combination effects with the Proposed Project, in relation to aquatic receptors and designated sites through impacts on water quality, and potential cumulative effects on bats, were considered. However, with the implementation of the mitigation measures outlined within the Moanbrack Wind Farm EIAR, including surface-water protection, habitat enhancement, and bat collision-risk mitigation, no significant residual effects on the identified KERs are predicted. The EIAR concludes that there will be no residual impacts on non-volant fauna, bats or birds, while proposed hedgerow enhancement will provide a net increase in this habitat resource over the long term.

Similarly, associated with the Proposed Project, identified KERs include hedgerows, badger, otter, lizard, bats and aquatic receptors. However, given the mitigations prescribed within this chapter, and the biodiversity enhancement measures proposed within the BMEP, no potential for significant cumulative effect with the Moanbrack Wind Farm has been identified in relation to biodiversity (excluding birds).

6.5.2.2.5 *Lyrenacarriga Wind Farm*

The potential for the Proposed Project to result in cumulative or in combination effects when assessed alongside the permitted Lyrencarriga Wind Farm was considered. The planning file was reviewed on

[27] *https://www.eplanning.ie/WaterfordCCC/AppFileRefDetails/2660191/0*

the An Coimisiún Pleanála website[28]. The wind farm is located within commercial forestry habitat and improved agricultural approx. 11km from the Proposed Project, within the same hydrological sub catchment.

The ecological assessment for Lyrencarriga Wind Farm was reviewed as part of the cumulative assessment. The EIAR for Lyrencarriga Wind Farm identifies KERs including habitats, protected terrestrial mammals, bats, and quatic habitats and species. Potential effects associated with the development include habitat loss and disturbance, deterioration of surface-water quality and associated effects on aquatic receptors, and operational disturbance, displacement and collision mortality affecting bats.

The EIAR incorporates mitigation measures for the protection of the identified ecological receptors during the construction and operational phases, including measures relating to habitat protection, surface-water management and pollution prevention, and the protection of bats. In relation to bats, given the separation distance of greater than 10 km between the wind farms, significant in-combination mortality, disturbance or displacement effects are not anticipated. Following implementation of the prescribed mitigation measures, the assessment concludes that significant residual effects on the identified KERs are not anticipated.

Similarly, associated with the Proposed Project, identified KERs include hedgerows, bats and aquatic receptors. However, given the mitigations prescribed within this chapter, and the biodiversity enhancement measures proposed within the BMEP, no potential for significant cumulative effect with the Lyrenacarriga Wind Farm has been identified in relation to biodiversity (excluding birds).

6.5.2.3 Other EIA or Large-scale Projects

A number of other large-scale projects (excluding wind farms) were identified within 15km of the Proposed Project. These included the following:

- Extension of Quarrying activities (06/1599),
- Satellite Quarry Development (WCC 06/1599),
- For the recycling of construction and demolition materials within the footprint of the existing quarry (2460345)

Given the lack of significant residual effects predicted as a result of the Proposed Project and given the nature and locations of the above listed projects relative to the Proposed Project, no potential for significant cumulative effect in combination with these projects is predicted.

6.5.2.4 Existing Habitats and Land Uses

The potential for the Proposed Project to result in a cumulative loss or deterioration of habitats, or impact on the KER species identified, was considered in relation to the existing land uses in the area.

The Proposed Project is located primarily on improved agricultural grassland (GA1) and forestry (WD4/WS5) habitats. The Proposed Project will result in the loss of conifer plantation with the potential to support some protected species such as red squirrel and pine marten. However, the loss of this habitat within the Site will be minimal in the context of this habitat in the wider landscape. The loss of this habitat associated with other wind farm developments in the wider area will also be minimal and cumulative loss of this habitat type in the wider landscape is not considered significant. Furthermore, forestry re-planting is ongoing within the Proposed Wind Farm site and wider landscape, and a replanting plan will be implemented. The Proposed Project is also located within agricultural grassland,

[28] *https://www.pleanala.ie/publicaccess/EIAR-NIS/309121/Environmental%20Impact%20Assessment%20Report/EIAR%20Volume%201%20-%20Main%20Report%20&%20Non-Technical%20Summary.pdf*

which generally provides low value habitats for faunal species. The loss of linear habitats including treelines and hedgerow will be mitigated through the replanting measures described in the BMEP. The Proposed Grid Connection will not result in the significant loss of any habitat or change in land use. The Proposed Project will not contribute to a net loss of high value habitat, it has been deliberately designed to be located on habitats of low value for faunal species.

6.5.3 Assessment of Cumulative Effects

The residual construction, operational and decommissioning impacts of the Proposed Project are considered cumulatively with other plans and projects as described in the preceding sections. Particular focus has been placed on those plans and projects that are in closest proximity to the Proposed Project and those that could potentially result in cumulative impacts on designated sites, surface water, habitats and species. A cumulative impact assessment specific to the potential for impacts on bats is provided in Appendix 6-2 and summarised here also.

Following the detailed surveys undertaken and impact assessment provided in Section 6.4 (including mitigation measures), it is concluded that there will be no significant residual impacts associated with the Proposed Project. The other wind farms in the area were considered (among other projects) but the Proposed Project has been deliberately designed to minimise the effects on biodiversity through the siting of the Proposed Wind Farm infrastructure on habitats of low ecological value with an emphasis on protection of surface water features (and associated aquatic fauna) during construction of the Proposed Project. The Proposed Project also includes a Biodiversity Management and Enhancement Plan, which further minimises /mitigates any potential for individual or cumulative negative effects on biodiversity and proposes enhancement measures for habitats and species within the Site.

In the review of the projects and plans that was undertaken, no connection that could potentially result in additional or cumulative impacts was identified. Neither was any potential for different (new) impacts resulting from the combination of the various projects and plans in association with the Proposed Project.

6.6 EIA Classification Summary

Table 6-26 Summary of Effects of the Proposed Project

Topic	Pre-Mitigation Effect	Mitigation / Assessment Section Reference	Residual Effect	Significance
Construction Phase				
European sites	Effects on European sites are addressed in the NIS. The NIS concludes that the Proposed Project, individually or in combination with other plans or projects, will not adversely affect the integrity of any European site.			
Nationally Designated Sites	Potential significant effects.	Section 6.4.5.2	No significant residual effect at any geographic scale	Not Significant
Aquatic Habitats and Related Species	Temporary, indirect significant effect	Section 6.4.2.1.2	No significant residual effect at any geographic scale	Not Significant
Hedgerows and Treelines	Direct, permanent, significant effect	Section 6.4.2.1.1, Appendix 6-4	No significant residual effect	Not Significant
Badger	Direct effects unlikely. Potential for temporary indirect significant effect (disturbance).	Section 6.4.2.2.2	No significant residual effect at any geographic scale	Not Significant
Otter	Temporary, indirect significant effect (habitat degradation)	Section 6.4.2.2.3	No significant residual effect at any geographic scale	Not Significant
Pine Marten and Red Squirrel	Direct effects unlikely. Potential for temporary indirect significant effect (disturbance).	Section 6.4.2.2.4 / Appendix 6-4	No significant residual effect at any geographic scale	Not Significant
Bats	Permanent significant effect (linear habitat loss)	Section 6.4.2.2.6	No significant residual effect at any geographic scale	Not Significant
Reptiles and Amphibians	Direct effects unlikely. Potential for temporary indirect significant effect (disturbance) to common lizard.	Section 6.4.2.2.5	No significant residual effect at any geographic scale	Not Significant
Operational Phase				
European Sites	Effects on European Sites are addressed in the NIS. The NIS concludes that the Proposed Project, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site.			
Nationally Designated Sites	Potential significant effects.	Section 6.4.5.2	No significant residual effect at any geographic scale	Not Significant
Aquatic Habitats and Related Species	Potential significant indirect effect	Section 6.4.3.1	No significant residual effect at any	Not Significant

			geographic scale	
Habitats	No significant operational effect identified.	NA	No significant residual effect	Not Significant
Bats	Long-term significant effect	Section 6.4.3.2.1	No significant residual effect following mitigation and monitoring	Not Significant
Decommissioning Phase				
Biodiversity	Potential effects during decommissioning will be similar to those associated with construction, but of reduced magnitude due to the reduced scale of works associated with decommissioning.	Section 6.4.4	No significant residual effect at any geographic scale	Not Significant

6.7 Conclusion

Following consideration of the residual effects (post mitigation) it is concluded that the Proposed Project will not result in any significant effects on any of the identified KERs. No significant effects on receptors of International, National, County Importance or Local importance (higher value) were identified.

The potential for effects on the European Designated Sites is fully described in the NIS that accompanies this application. The NIS concludes that in view of best scientific knowledge and on the basis of objective information, the Proposed Project either individually or in combination with other plans or projects, is not likely to have adverse effects on the European Sites that were assessed as part Appropriate Assessment process. Similarly, with the prescribed mitigations in place, there is no potential for impact on any nationally designated site.

Provided that the Proposed Project is constructed and operated in accordance with the design, best practice and mitigation that is described within this application, significant individual or cumulative effects on biodiversity are not anticipated at the international, national, county, or local scales or on any of the identified KERs.