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, Flora and Fauna, and sets out the mitigation measures proposed to avoid, reduce or offset any potential significant effects that are identified. Mitigation by design was applied to the finalised Proposed Project layout wherever possible to avoid impacts on Biodiversity. 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 Act, 1976 (as amended) and the EU Habitats Directive 92/43/EEC. Impacts on avian receptors are considered in **Chapter 7: Ornithology** of this EIAR. The full description of the Proposed Project is provided in **Chapter 4 Description of the Proposed Project** of this EIAR.

The chapter is structured as follows:

- The Introduction provides a description of the legislation, guidance and policy context applicable to Biodiversity, Flora and Fauna.
- This is followed by a comprehensive description of the ecological survey and impact assessment methodologies that were followed to inform the robust assessment of likely significant effects on ecological receptors.
- A description of the Baseline Ecological Conditions and Receptor Evaluation 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 effects 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, Flora and Fauna.

6.1.1 Project Referencing

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

For the purposes of **Chapter 6** for this EIAR:

- The 'Proposed Project' refers to the entirety of the project (the 'Proposed Wind Farm' and the 'Proposed Grid Connection', as described below) for the purposes of this EIAR in accordance with the EIA directive. The Proposed Project is described in detail in Ch. 4: Description of the Proposed Project of this EIAR and is the subject of the accompanying planning application under Section 37E of the Planning and Development Act 2000, as amended;
- The 'Proposed Wind Farm' refers to the 14 no. turbines and supporting infrastructure, including the proposed 110kV onsite substation. A detailed description of the Proposed Wind Farm is provided in Ch. 4: Description of the Proposed Project of this EIAR.
    - The 'proposed turbines' refers to the 14 no. turbines associated with the Proposed Wind Farm as outlined above;

- The 'Proposed Grid Connection' refers to the 110kV underground cabling connection from the proposed 110kV onsite substation to the existing Dunmanway 110kV substation, and all ancillary works and apparatus. The Proposed Grid Connection will facilitate the connection of the Proposed Wind Farm to the national electricity grid;
- The 'Site' refers to the primary study area for the EIAR, as delineated by the EIAR site boundary in green as shown in **Figure 1-1** of the EIAR, and encompasses an area of approximately 1,175 hectares; and,
- The 'Proposed Wind Farm site' refers to the portion of the Site surrounding the Proposed Wind Farm but excluding the portion of the Site surrounding the Proposed Grid Connection.

In addition:

- 'Key Ecological Receptor" (KER) is defined as a species or habitat occurring within the zone of influence of the development upon which likely significant effects are anticipated.
- Zones of Influence" (ZOI) for individual ecological receptors refers to the zone within which potential effects are anticipated. ZOIs differ depending on the sensitivities of particular habitats and species and were assigned in accordance with best available guidance and through adoption of a precautionary approach.

6.1.2 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 creatures and flora. These species are therefore considered in this report 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. These sites do not form part of the Natura 2000 network of European sites and the AA process, or screening for same, does not apply to NHAs or pNHAs. Proposed Natural Heritage Areas (pNHAs) were published on a non-statutory basis in 1995 but have not since been statutorily proposed or designated[1] However, these sites are considered to be of significance for wildlife and habitats as they may form statutory designated sites in the future (NPWS, 2020).

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 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**"[2]). The NBAP strives for a "whole of government, whole of society" approach to the governance and conservation of biodiversity. It demonstrates Ireland's continuing

[1] https://www.npws.ie/protected-sites/nha (accessed December 2025).
[2] *Ireland's 4th National Biodiversity Action Plan 2023-2030. Available at https://www.npws.ie/sites/default/files/files/4th_National_Biodiversity_Action_Plan.pdf*

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

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 adverse impact on any relevant European Sites (i.e. SACs, cSACs, SPAs or cSPAs) has been carried out in the Appropriate Assessment (AA) Screening Report and Natura Impact Statement. 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).

6.1.3 Review of Relevant Guidance and Sources of Consultation

The assessment methodology is based primarily upon the National Road Authority (TII) *'s Guidelines for Assessment of Ecological Impacts of National Road Schemes Rev 2* (TII, 2009a)[3] 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)[4]. 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:

[3] *(TII, 2009a)- Guidelines for Assessment of Ecological Impacts of National Road Schemes Rev 2. Available at* https://www.tii.ie/media/kzldoawo/guidelines-for-assessment-of-ecological-impacts-of-national-road-schemes.pdf
[4] *(TII, 2009b)- Ecological Surveying Techniques for Protected Flora and Fauna on National Road Schemes. Available at* https://www.tii.ie/media/4nthqz3a/ecological-surveying-techniques-for-protected-flora-and-fauna-during-the-planning-of-national-road-schemes.pdf

- (CIEEM, 2018[5]). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.3. Chartered Institute of Ecology and Environmental Management, Winchester.

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

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

- 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).
- Wildlife Acts as amended.

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).
- European Union (Invasive Alien Species) Regulations 2024 (S.I. 374 of 2024)

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

- Cork County Development Plan 2022-2028[6]
- Ireland's 4th National Biodiversity Action Plan 2023-2030[7]
- Regional Spatial and Economic Strategy for the Southern Region 2020-2032[8]

6.1.4 Statement of Authority

This EIAR chapter has been prepared by Rachel Minogue (B.Sc., Environmental Science) and Julie Kohlstruck (B.Sc. and M.Sc. Landscape Ecology). Rachel Minogue and Julie have over 3 and 5 years' experience respectively in ecological consultancy and have worked on Appropriate Assessments and Ecological Impact Assessments for a range of project types, including renewable energy infrastructure This report has been reviewed by Rachel Walsh (B.Sc. Env., MCIEEM). Rachel Walsh is a Senior Ecologist and full member of CIEEM with over 5 years' experience in ecological consultancy and has undertaken ecological impact assessments for a wide range of large-scale infrastructure projects including renewable energy and water infrastructure.

This chapter has been prepared with oversight, advice and assistance from the Principal Ecologist at MKO, Pat Roberts (B.Sc. (Env) MCIEEM). Pat is a full member of the Chartered Institute of Ecology and Environmental Management and is a highly experienced in the preparation of Ecological Impact Assessments and Biodiversity Chapters for Ecological Impact Assessment Reports. He has provided

[5] *(CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.3. Chartered Institute of Ecology and Environmental Management, Winchester. Available at https://cieem.net/wp-content/uploads/2018/08/EcIA-Guidelines-v1.3-Sept-2024.pdf*

[6] *Cork County Development Plan 2022-2028. Available at https://www.corkcoco.ie/en/resident/planning-and-development/cork-county-development-plan-2022-2028*

[8] *Northern and Western Regional Assembly Regional Spatial and Economic Strategy 2020-2032. Available at https://www.nwra.ie/rses/*

these services for a wide range of large-scale infrastructure including renewable energy, road, rail, flood relief and residential projects and has over 20 years' post graduate experience in ecological consultancy.

The baseline terrestrial ecological surveys were undertaken by Rachel Minogue, Matthew Kieran (BSc), Fiona Kileen (BSc), Colin Murphy (BSc, MSc), Tom Peters (BSc, MSc), Ciara Lynn Sheehan (BSc), and Niamh Rowan (BSc) of MKO. Bat Surveys were undertaken by MKO. Details of bat surveyors are provided in **Appendix 6-2.** Aquatic Surveys were undertaken by MKO. Details of aquatic surveyors are provided in **Appendix 6-3.**

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 the National Parks and Wildlife Service (NPWS) Article 17 shapefile datasets and 2025 reports.
- Review of online web-mappers: NPWS[9], EPA maps[10], Water Framework Directive (WFD) and Inland Fisheries Ireland (IFI)[11].
- Review of IFI Reports[12], where available
- 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[13]- Bryophytes.
- Review of relevant Plans, including the National Biodiversity Action Plan (NBAP) 2023-2030 and the All-Ireland Pollinator Plan 2021-2025.
- Review of the publicly available National Biodiversity Data Centre (NBDC) web-mapper.
- A data request was sent to the NPWS for records of Rare and Protected Species for the hectads in which the Proposed Project is located on the 9th of July 2025 and a response was received on the 25th of July 2025.
- Desk sources reviewed in relation to data on bat species in the area are included in **Appendix 6-2.**
- Potential for cumulative effects have been considered in **Chapter 2: Background to the Proposed Project** of this EIAR and **Section 6.6** Cumulative Impact of this Chapter. This was informed by a review of the EIARs/NISs prepared for other plans and projects occurring in the wider area.
- Review of previous planning applications within the Site, as listed in Section 2.7.1 of Chapter 2 (Background to the Proposed Project) of this EIAR.

[9] https://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=8f7060450de3485fa1c1085536d477ba *Accessed December 2025*
[10] *https://gis.epa.ie/EPAMaps/ Accessed November 2025*
[11] https://ifigis.maps.arcgis.com/apps/webappviewer/index.html?id=9a31fedb077c4fb2991184842b7ef025 *Accessed December 2025*
[12] *Water Framework Directive Rivers Fish Ecological Status 2008-2022*
[13] https://heritagedata.maps.arcgis.com/apps/webappviewer/index.html?id=a41ef4e10227499d8de17a8abe42bd1e *Accessed December 2025*

6.2.2 Scoping and Consultation

MKO undertook a scoping exercise during preparation of this EIAR, as described in **Chapter 2, Section 2.8** 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 2-5 & Table 2-6** in Chapter 2 of this EIAR describes where the comments raised in the scoping responses received have been addressed in this assessment. **Table 6-1** below 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	Response Summary	Addressed in Chapter
Bat Conservation Ireland	No response		N/A
BirdWatch Ireland	No response		
Cork County Council – Environment Department	No response		
Cork County Council – Heritage and Conservation Department	No response		
Department of Housing, Local Government and Heritage	07/04/2025	The response includes observations/recommendations regarding nature conservation and is summarised in **Section 6.2.2.1** below.	Chapter 6 Biodiversity Chapter 8 Land, Soils and Geology, Chapter 9 Hydrology and Hydrogeology Appendix 4-3 Construction and Environmental Management Plan
Inland Fisheries Ireland	15/01/2025	States that the site of the Proposed Project encompasses the upper, Rivers Owvane, Meelagh and Bandon Catchments and tributaries, significant salmonid fisheries. In this context IFI would ask that the following requirements should be taken into consideration. There should be no drainage or other physical interference with the bed or bank of any watercourse without prior consultation with IFI. Suspended solids and or hydrocarbon contaminated site run-off waters must be controlled adequately so that no pollution of surface waters	Chapter 9 Hydrology and Hydrogeology

		can occur. More specifically IFI feels the following issues should be addressed i. Identifying and zoning the project for environmental impact should a peat slip occur ii. Setting out contingency plan should a peat movement occur. iii. Setting out a plan for the control of silt in such a scenario, including measures to be put in place at the initial stages of construction. In the event of any watercourse crossings being bridged or culverted the following general criteria should apply, i. The free passage of fish must not be obstructed. ii. The original slope of the riverbed should be maintained with no sudden drops on the downstream side. iii. Design details on any proposed crossing should be incorporated at planning stage iv. Bridges are preferable to culverts. v. All instream works should be carried out only in the July-September period. Full cognisance should be given to IFI "Guidelines on protection of fisheries during construction works in and adjacent to waters"	
Irish Peatland Conservation Council	No Response		N/A
Irish Raptor Study Group	No Response		N/A
Irish Red Grouse Association	No Response		N/A
Irish Wildlife Trust	11/03/2025	States they do not have the staff capacity to respond to this consultation at the moment, but we will endeavour to respond if possible	N/A
The Heritage Council	No Response		N/A

6.2.2.1 Department of Housing, Local Government and Heritage:

The response received from the Department of Housing Local Government and Heritage on the 07/04/2025 includes observations/recommendations regarding nature conservation and are summarised below in *italics* responses are provided under teach observation/ recommendation

Observations/ recommendations relating to Ornithology are considered in the **Ornithology Chapter 7** of this EIAR.

All aspects of the wind farm project, including both the overall turbine and grid connection proposals, need to be assessed together in terms of both EIA/EIS and NIS/AA process to avoid project splitting aspects of the project within the assessment process.

- All aspects of the Proposed Project, including the Proposed Wind Farm and Proposed Grid Connection are provided in Chapter 4 Description of the EIAR and are included in the accompanying Natura Impact Statement (NIS).

The project site is hydrologically linked to the Bandon River SAC 2171 via tributaries and appears also at the eastern end of the application to be partly within the SAC.

- The hydrological impacts on the River Bandon SAC have been fully considered in the accompanying Natura Impact Statement (NIS), and appropriate mitigation measures have been incorporated into the Project Design, as set out in this the NIS, Biodiversity Chapter 6, Chapter 4- Description and Chapter 9 Water, and the Construction Environmental Management Plan (CEMP).

There are concerns regarding the potential loss and/or degradation of dry heath, blanket bog and other peatland habitats arising from the overall wind farm proposal. A number of areas of Annex I habitat under the EU Habitats Directive occur within the project area.

- The loss of Annex I habitats will be offset through the measures as outlined in the Biodiversity Management Enhancement Plan (BMEP) (**Appendix 6-4).** The restoration efforts will restore the formerly occurring Annex I habitat Wet Heath. A Monitoring Plan to ensure success of the proposed measures are also provided in the BMEP.

Any losses of biodiversity habitat associated with this project (including access roads and cabling etc.) such as woodland, scrub, hedgerows, peatland and other habitats should be mitigated for..

- The loss of woodland, scrub and hedgerow habitats will be offset through measures as outlined in the BMEP (Appendix 6-4). A Monitoring Plan to ensure success of the proposed measures are also provided in the BMEP.

Annex I habitats which occur outside the Natura 2000 network are important in terms of biodiversity conservation. The presence of the Annex I habitats outside the network should be given due consideration as part of the consideration of biodiversity matters generally for the project. The loss of Annex I habitats outside SACs should be avoided.

- All high-quality Annex I habitats within the Site have been deliberately avoided in the design of the Proposed Project. The loss of Annex I habitats will be offset through the measures as outlined in the Biodiversity Management Enhancement Plan (BMEP) (Appendix 6-4). The restoration efforts will restore the formerly occurring Annex I habitat Wet Heath. A Monitoring Plan to ensure success of the proposed measures are also provided in the BMEP.

The EIAR should include the results of the surveys and detail the survey methodology and timing of such surveys including consistency in terms of timed vantage point surveys.

- Full details of ecological surveys undertaken, the methodologies and results are provided in this Biodiversity Chapter 6, Bat Report (Appendix 6-2) and Aquatic Report (Appendix 6-3). Bird Survey methodologies and results are provided in the Ornithology Chapter 7.

The document notes species of concern which should be considered including the following: Marsh Fritillary and Bats.

- Full consideration and assessment of impacts to these species have been provided in this Biodiversity Chapter 6, and Bat Report (Appendix 6-2).

Inland Fisheries Ireland (IFI) should be consulted with regard to impacts on fish species and the applicant may find it useful to consult their publication entitled "Planning for watercourses in the urban environment" (2020) which can be downloaded from their web site.

- Refer to Chapter 9- Hydrology and Hydrogeology.

Cumulative impact from all windfarms in the area needs to be fully and comprehensively assessed and the data from surrounding sites needs to be considered in the assessment of impacts. Post construction monitoring results and data from nearby windfarms should be considered and their associated EIARs.

- Cumulative impact assessments are provided in the relevant EIAR chapters, and Section 6.5 of this Biodiversity Chapter.

Where there are impacts on protected species and their habitats, resting or breeding places, licenses may be required under the Wildlife Act 1976-2018 or derogations under the EC (Birds and Natural Habitats) Regulations 2011, as amended.

- Full assessment of potential impacts on protected species and habitats is provided in this Biodiversity Chapter 6, Bat Report (Appendix 6-2) and Aquatic Report (Appendix 6-3). Bird Survey methodologies and results are provided in the Ornithology Chapter 7. All necessary Derogation Licences are provided in the EIAR chapters.

6.2.2.2 Meeting with NPWS

Members of the Project Team, including Environmental Scientists, Ecologists and Ornithologists met with the NPWS on the 8th of August 2025 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.

The outcome of the meeting included the following feedback and recommendations from the NPWS:

- The loss of Annex I habitat within the Proposed Wind Farm site was raised, and it was highlighted that the Site is one of the few remaining open, upland peatland/ heath sites in the area. The loss of Annex I peatland/ heath habitats has been addressed in the Biodiversity Management Enhancement Plan (BMEP) as set out in **Appendix 6-4.** Further, it was highlighted that the mitigation hierarchy was applied to avoid sensitive habitats, as detailed in **Chapter 3- Reasonable Alternatives.**
- It was highlighted that the surrounding land uses (grazing, drainage, land reclamation) in the vicinity of the proposed enhancement area may impact the overall success of the wet heath enhancement proposal. The on-going management and monitoring, including grazing management and removal of self-seeded conifers etc of this wet heath enhancement area is detailed in the **BMEP Appendix 6-4.**
- Hydrological impacts on dystrophic lakes and watercourses in the area need to be fully considered due to nature of peat on site. The hydrological impacts have been fully considered, and appropriate mitigation measures have been incorporated into the project design, as set out in this **Biodiversity Chapter, Chapter 4- Description** and **Chapter 9 Water**, and the **Construction Environmental Management Plan (CEMP).**
- Hydrological impacts to downstream freshwater pearl mussels and aquatic receptors were raised. The hydrological impacts have been fully considered, and appropriate mitigation

measures have been incorporated into the project design, as set out in this **Biodiversity Chapter,** and **Chapter 4- Description** and **Chapter 9 Hydrology and Hydrogeology**, and the **Construction Environmental Management Plan (CEMP) in Appendix 4-3.**

- It was noted that the Proposed Project will need to be assessed cumulatively with other renewable energy projects in the surrounding area. The Proposed Project has been assessed cumulatively in relation to biodiversity in **Section 6-6** of this Chapter.

6.2.3 Field Surveys

Comprehensive surveys of the biodiversity of the Site were undertaken to inform this Biodiversity Chapter of the EIAR. The following sections fully describe the ecological surveys that have been undertaken and provide details of the methodologies and guidance followed. Surveys were carried out throughout 2024 and 2025 and are summarised in **Table 6-2** below.

Table 6-2: Ecology Surveys Informing the EIAR

Survey Type	Dates	Appendix
Multi-disciplinary walkover (incl. habitats)	17/07/2024 18/07/2024 28/08/2024 12/09/2024 12/05/2025 13/05/2025 14/05/2025	N/A
Detailed Botanical Surveys	17/07/2024 18/07/2024 28/08/2024 13/05/2025 14/05/2025 01/07/2025	Botanical Report, **Appendix 6-1**
Badger/Mammal survey	17/07/2024 18/07/2024 25/02/2025 26/02/2025 27/02/2025	N/A
Bat Surveys	Full details of dates of surveys for manual activity surveys and emergence surveys, static detector surveys, and daytime bat habitat appraisal surveys, are presented in **Appendix 6-2.**	Bat Report, **Appendix 6-2**
Aquatic surveys (including otter)	Full details of dates of aquatic surveys including fisheries and habitat assessment, Q- Value & Electric Fishing are presented in **Appendix 6-3.**	Aquatics Report, **Appendix 6-3**
Kerry Slug Surveys	05/12/2025	N/A
Terrestrial Ecological Surveys of Proposed Grid Connection & TDR Route	12/05/2025 13/05/2025 14/05/2025	N/A

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

Multidisciplinary walkover surveys were undertaken within the Site on the dates outlined in **Table 6-2** above. Surveys were undertaken within the recognised optimum period for vegetation surveys/habitat mapping, i.e. April to September (Smith *et al.*, 2011)[14]. 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 Proposed Project (e.g. otter etc.). Bird species observed during the multi-disciplinary surveys were also recorded.

The multi-disciplinary walkover surveys comprehensively covered the entire Site and based on the survey findings, further detailed targeted surveys were carried out for features and locations of ecological significance. These surveys were carried out in accordance with the TII *Guidelines on Ecological Surveying Techniques for Protected Flora and Fauna* on National Road Schemes (TII, 2009).

Other targeted survey methodologies undertaken within the Site are described in the following subsections.

6.2.3.2 Dedicated Habitat and Vegetation Composition Surveys

All habitats recorded on Site and described in this Biodiversity chapter have been classified in accordance with Fossitt (2000[15]). Detailed botanical surveys/relevé assessments of the Site were undertaken. 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 Proposed Project were undertaken throughout multidisciplinary walkover surveys carried out on the dates detailed in **Table 6-2** above. These surveys provided an understanding of the baseline and informed further survey work following finalisation of the Site layout.

The habitat assessment surveys described in this report 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.[16]
- NPWS (2019). *The Status of EU Protected Habitats and Species in Ireland*. Volume 2: *Habitat Assessments*. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neill.[17]

[14] *(Smith et al 2011)- Best Practice Guidance for Habitat Survey and Mapping. Available at* https://www.heritagecouncil.ie/content/files/best_practice_guidance_habitat_survey_mapping_onscreen_version_2011_8mb.pdf
[15] *(Fossitt 2000)- A Guide to Habitats in Ireland. Available at* https://www.npws.ie/sites/default/files/publications/pdf/A%20Guide%20to%20Habitats%20in%20Ireland%20-%20Fossitt.pdf
[16] *(EC 2013)- Interpretation Manual of European Union Habitats. Available at* https://www.miteco.gob.es/content/dam/miteco/es/biodiversidad/temas/espacios-protegidos/doc_manual_intp_habitat_ue_tcm30-207191.pdf
[17] *(NPWS 2019)- The Status of EU Protected Habitats and Species in Ireland. Volume 2. Available at* https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2019_Vol2_Habitats_Article17.pdf

- 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. [18]
- 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.[19]
- Perrin, P.M., Barron, S.J., Roche, J.R. & O'Hanrahan, B. (2014). Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland. Version 2.0. Irish Wildlife Manuals, No. 79. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.[20]

Plant nomenclature for vascular plants follows '*New Flora of the British Isles*' (Stace, 2019), while mosses and liverworts nomenclature follows '*Mosses and Liverworts of Britain and Ireland - a field guide'* (British Bryological Society, 2010).

Habitats considered to be of ecological significance, and in particular having the potential to correspond to those listed in Annex I of the EU Habitats Directive, where present, were identified and classified as KERs.

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 within representative habitats at each turbine base and associated Proposed Wind Farm infrastructure, see **Appendix 6-1** for all relevé data. Detailed botanical assessments were not required along the Proposed Grid Connection, which is restricted to existing roads and forestry tracks, and further detailed in Section 6.3.4. The extent of each habitat on Site was mapped using the field maps app. A representative photograph was also taken for each of the habitats recorded on site, including all relevés. The location of all quadrats is shown on **Figure 1-1** of **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)[21] 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

[18] *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. NPWS Available at https://www.npws.ie/sites/default/files/publications/pdf/IWM%20102%20Annex%201%20Grasslands.pdf*
[19] *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. NPWS. Available at https://www.npws.ie/sites/default/files/publications/pdf/IWM-78-Irish-semi-natural-grassland-survey.pdf*
[20] *Perrin, P.M., Barron, S.J., Roche, J.R. & O'Hanrahan, B. (2014). Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland. Version 2.0. Irish Wildlife Manuals, No. 79. NPWS. Available at https://www.npws.ie/sites/default/files/publications/pdf/IWM79.pdf*
[21] *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 December 2025.*

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). 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 6-3** details the categorizing types of plots utilising the clustering analysis. This categorizing procedure was utilised to determine if the grassland plots within the Proposed Wind Farm site had any affinity to Annex I grassland and whether further assessment was required.

Table 6-3: 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.

Habitats considered to be of ecological significance and in particular having the potential to correspond to those listed in Annex I of the EU Habitats Directive where present were identified and classified as KERs.

6.2.4 Terrestrial Faunal Surveys

The results of the desk study, scoping replies, incidental records of protected species during ecological survey work and multidisciplinary walkover surveys were used to inform the scope of targeted ecological surveys required. Dedicated surveys for badger were undertaken on the dates set out in **Table 6-2** above, with the methodologies followed also provided in the following sections. Dedicated surveys for bats were undertaken across the Site and are detailed in the Bat Report in **Appendix 6-2.** Otter surveys were carried out by MKO within the Proposed Wind Farm site and along the Proposed Grid Connection. Otter surveys were also carried out during the dedicated aquatic surveys as detailed in the Aquatic Report in **Appendix 6-3.** During the multidisciplinary walkover surveys, where observed incidental records of birds, reptiles, amphibians, and invertebrates including butterflies, dragonflies, etc. were recorded.

6.2.4.1 Badger Survey

The badger surveys were conducted on the dates outlined in **Table 6-2** above in areas identified as providing potential habitat for badgers (i.e., conifer plantation). The surveys were carried out to determine the presence or absence of badger signs within the Proposed Wind Farm site and in the wider survey area. This involved a search for all potential badger signs as per TII (2009) (latrines, badger paths and setts). If encountered, setts would be classified as per the convention set out in TII (2009) (i.e. main, annexe, subsidiary, outlier).

The badger survey was conducted adhering to best practice guidance (TII, 2009) and followed the *'Guidelines for the Treatment of Badger Prior to the Construction of National Roads Schemes'* (TII, 2006a) and CIEEM best practice competencies for species surveys (CIEEM, 2013[22]).

[22] *CIEEM, 2013, Technical Guidance Series – Competencies for Species Survey, Online, Available at: https://cieem.net/resource/competencies-for-species-survey-css/ Accessed December 2025.*

6.2.4.2 Otter Survey

Dedicated otter surveys were undertaken along watercourses in the vicinity of the Site during dedicated aquatic surveys undertaken in 2024 (Aquatic Baseline Report, **Appendix 6-3**), and during multidisciplinary walkover surveys and Proposed Grid Connection surveys as described in **Table 6-2** above.

The otter surveys were conducted as per TII (2009) guidelines (Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes). 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). The dedicated otter survey also followed the guidance as set out in TII (2008) *'Guidelines for the Treatment of Otters Prior to the Construction of National Roads Schemes'* and following CIEEM best practice competencies for species surveys (CIEEM, 2013[23]).

6.2.4.3 Bat Surveys

Detailed description of the survey methodologies undertaken at the Site throughout 2024/ 2025 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 was created in accordance with the best practice guidelines, '*Bat Surveys: Good Practice Guidelines' prepared by the Bat Conservation Trust (Collins 2023)*[24] and were undertaken in strict accordance with those prescribed in NatureScot (2021)[25] *'Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation'.* This is in line with standard best practice industry guidelines.

6.2.4.4 Aquatic surveys

Dedicated aquatic baseline surveys were undertaken in the vicinity of the Proposed Project on the 26th–28th June 2024, 7th–9th August 2024 and 15th and 16th October 2024. All freshwater watercourses which could be affected directly or indirectly by the Proposed Project were considered as part of the current assessment. This included survey sites in vicinity of the Proposed Project inclusive of watercourse crossings associated with the Proposed Wind Farm site and the Proposed Grid Connection.

Thus, a total of 21 survey sites located across two hydrological sub catchments were selected within the vicinity of the Proposed Project. Five survey sites were located within the Mealagh_SC_010 sub catchment (Sub catchment ID: 21_20), with the remaining 16 survey sites located within the Coomhola_SC_010 sub catchment (Sub catchment ID: 21_19). Within the Mealagh_SC_010 sub catchment, surveys were conducted on the Mealagh_010 and Mealagh_020 watercourses. Within the Coomhola_SC_010 sub catchment, surveys were conducted on the Owvane (Cork)_010, Owvane (Cork)_020 and Owngar (Cork)_010. A total of 10 survey sites located across the Bandon-Ilen and Dunmanus-Bantry-Kenmare hydrological catchments were selected along the Proposed Grid Connection. One survey location (GC 1) was located within the Suir Dunmanus-Bantry-Kenmare hydrological catchment (sub catchment Coomhola_SC_010), while the remaining sites were located

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[24] *(Collins 2023)- Bat Surveys for Professional Ecologists- Good Practice Guidelines. Available at* https://cdn.bats.org.uk/uploads/pdf/Resources/For-professionals/Bat-Survey-Guidelines-4th-edition-AMENDED-27.03.24.pdf?v=1711530492

[25] *(NatureScot, 2021) Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation. Available at* https://www.nature.scot/sites/default/files/2021-08/Bats%20and%20onshore%20wind%20turbines%20-%20survey%2C%20assessment%20and%20mitigation_0.pdf

within the Bandon-Ilen hydrological catchment (GC 2 – GC 8 located within sub catchment Bandon_SC_010, GC 9 within sub catchment Bandon_SC_020 and GC 10 within sub catchment Bandon_SC_030). Within the Dunmanus-Bantry-Kenmare catchment, surveys were conducted along the Owngar River. Within the Bandon-Ilen catchment, surveys were conducted along the Bandon River.

Survey effort focused on both instream and riparian habitats at each aquatic sampling location. Surveys at each of these sites included a fisheries assessment (electro-fishing and or fisheries habitat appraisal), macrophyte and aquatic bryophyte survey and (where suitable) biological water quality sampling (Q-sampling) and macro-invertebrate sweep sampling. The presence of otter (*Lutra lutra*) was determined through the recording of otter signs within 150m radius of each survey site.

In addition, to validate site surveys and to detect potentially cryptically low populations, composite water samples were collected analysed for freshwater pearl mussel (*Margaritifera margaritifera*), white-clawed crayfish and crayfish plague (*Aphanomyces astaci*).

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.**

6.2.4.5 Kerry Slug Surveys

Following the desk study (**Section 6.3.1.8**), and as per the National Biodiversity Data Centre (NBDC) map viewer, the Proposed Wind Farm was confirmed to lie within the known range of Kerry Slug (*Geomalacus maculosus*).

Hand search surveys were carried out for Kerry slug on the 5th of December 2025. Surveys followed the methodology outlined in McDonnell & Gormally (2011) in relation to hand searching methods. The surveys were undertaken in suitable weather conditions, on an overcast and wet day. As per the TII (2009) guidelines, surveys for Kerry Slug can be completed all year round. The search focused on the following habitats/features within the Proposed Wind Farm site:

- Rotting logs/tree stumps in areas of forestry.
- Rocky out crops in peatland habitats.
- Tree trunks and stumps in areas of forestry and clear-fell.
- Rocks and boulders within areas of recently planted conifer plantation

6.2.4.6 Marsh Fritillary Surveys

As part of the multidisciplinary surveys, a search for potential suitable habitat for Marsh fritillary (*Euphydryas aurinia*) was carried out as per TII (2009b). This included a search for devil's- bit scabious (*Succisa pratensis*) which is the food plant for the larval stage of this species.

6.2.4.7 Invasive species survey

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).

6.2.4.8 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 on site were readily identifiable and comprehensive assessments were made during the field visit. No limitations in respect of the surveys undertaken have been identified.

6.2.5 Methodology for Assessment of Impacts and Effects

6.2.5.1 Identification of Target Receptors and Key Ecological Receptors

The methodology for assessment followed the precautionary principle (CIEEM 2018) with regard to the identification of KERs. Following a comprehensive desk study, initial site visits and stakeholder consultation; "Target Receptors" likely to occur in the ZOI of the Proposed Project were identified. The Target Receptors included habitats and species that were protected under the following legislation:

- Annexes of the EU Habitats Directive.
- Qualifying Interests (QI) of SACs within the likely ZOI.
- Designated Sites and Species protected under the Wildlife Act as amended.
- Species protected under the Flora (Protection) Order 2022 S.I. No. 235.

6.2.5.2 Determining Importance of Ecological Receptors

The importance of the ecological features identified within the Site 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 2009). 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. These guidelines 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)

The guidelines clearly set out the criteria by which each geographic level of importance can be assigned. Locally Important (lower value) receptors contain habitats and species that are widespread and of low ecological significance and of any importance only in the local area. 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 the TII Ecological Impact Assessment Guidelines 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.

Any ecological receptors that are determined to be of National or International, County or Local importance (Higher Value) following the criteria set out in the TII Ecological Impact Assessment Guidelines are considered to be KERs for the purposes of ecological impact assessment if there is a pathway for effects thereon. Any receptors that are determined to be of Local Importance (Lower Value) are not considered to be KERs. 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

6.2.5.3 Characterisation of Impacts and Effects

The ecological effects of impacts arising from the Proposed Project are characterised as per the CIEEM '*Guidelines for Ecological Impact Assessment in the UK and Ireland*' (2018). The CIEEM (2018) Guidelines are the industry standard for the completion of Ecological Impact Assessment (EcIA) in the UK and Ireland. This chapter has also been prepared in cognisance of the EPA Guidelines (EPA 2022)[26].

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** Refers 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.

6.2.5.4 Determining the Significance of Effects

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

For the purpose of EcIA, 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. 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.

[26] *There are seven generalised degrees of effect significance that are commonly used in EIA. Imperceptible, Not Significant, Slight, Moderate, Significant, Very Significant and Profound. Generalised definitions of each of these are provided in Table 3.4 of the EPA guidelines (2022). As stated in the guidelines, when more specific definitions exist within a specialised factor or topic, e.g. biodiversity, these should be used in preference to these generalised definitions (i.e. CIEEM 2018).*

- 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 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) 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).

6.2.5.5 Incorporation of Mitigation

Section 6.5 of this EIAR 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, as is the case with the Proposed Project. The implemented mitigation measures avoid or reduce or offset potential significant residual effects, post mitigation.

6.3 Establishing the Ecological Baseline

6.3.1 Desk Study Results

The following sections describe the results of a survey of published material that was consulted as part of the desk study for the purposes of the ecological assessment. It provides a baseline of the ecology known to occur in the existing environment. Material reviewed includes the Site Synopses for designated sites within the Likely ZOI, as compiled by the NPWS, plant distribution atlases and other research publications.

6.3.1.1 Designated Sites

6.3.1.1.1 *Identification of the Designated Sites within the Likely Zone of Influence of the Proposed Project*

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) for birds are designated under the Habitats Directive and the 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 NIS that accompanies this application. As per EPA 2022 Guidance, *"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 6.5.5 of this EIAR provides a summary of the key assessment findings with regard to European Designated 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 Biodiversity 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 Biodiversity Chapter. NHAs and pNHAs are collectively known as 'Nationally Designated Sites'.

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

- Initially the most up to date Geographical Information Systems (GIS) spatial datasets for European and Nationally designated sites and water catchments were downloaded from the NPWS website (www.npws.ie) and the EPA website (www.epa.ie). The datasets were utilised to identify designated sites which could feasibly be affected by the Proposed Project.
- All European and Nationally designated sites within the vicinity of the Proposed Project were identified. In addition, the potential for connectivity with European or Nationally designated sites at greater distances from the Proposed Project was also considered in this initial assessment.
- A map of all the European Sites within the vicinity of the Proposed Project is provided **in Figure 6-1** with all Nationally Designated Sites shown in **Figure 6-2.** These figures also display Water Framework Directive hydrological catchments and groundwater bodies.
- **Table 6-4** provides details of all relevant Nationally Designated Sites as identified in the preceding steps and assesses which are within the likely ZOI. All European Sites are fully described and assessed in the AA Screening and NIS reports submitted as part of this planning application.
- The designation features of these sites, as per the NPWS website (www.npws.ie), were consulted and reviewed at the time of preparing this report.
- Where potential pathways for Significant Effect are identified, the Site is included within the Likely ZOI, and further assessment is required.

Castlemaine Harbour SAC
Laune Muckross
Blackwater River (Cork/Waterford) SAC
Blackwater (Munster)
Glenville
Cahersiveen
Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC
Mullaghanish Bog SAC
Mullaghanish to Musheramore Mountains SPA
Old Domestic Building, Curraglass Wood SAC
St. Gobnet's Wood SAC
Eirk Bog SPA
Blackwater River (Kerry) SAC
Kenmare
Kilgarvan Ice House SAC
Ballinhassig West
Lee, Cork Harbour and Youghal Bay
The Gearagh SPA
The Gearagh SAC
Ballinhassig East
Glanlough Woods SAC
Old Domestic Building, Dromore Wood SAC
Kenmare River SAC
Ballincollig
Lee Valley Gravels
Derryclogher (Knockboy) Bog SAC
Dunmanus-Bantry-Kenmare
Beara Sneem
Caha Mountains SAC
Glanmore Bog SAC
Beara Sneem Islands
Bandon River SAC
Bandon
Bandon-Ilen
Skibbereen-Clonakilty
Reen Point Shingle SAC
Sheep's Head SAC
Dunbeacon Shingle SAC
Clonakilty Bay SAC
Clonakilty Bay SPA
Farranamanagh Lough SAC
Sheep's Head to Toe Head SPA
Myross Wood SAC
Kilkeran Lake and Castlefreke Dunes SAC
Galley Head to Duneen Point SPA
Waste Facility (W0089-02)
Castletownshend SAC
Roaringwater Bay and Islands SAC
Bandon Islands

Map Legend

- EIAR Site Boundary
- Special Protection Areas (SPA)
- Special Areas of Conservation (SAC)
- WFD Hydrological Catchments
- WFD GroundWater Bodies
- WFD Hydrological SubCatchments

Drawing Title
European Designated Sites within the Likely Zone of Influence

Project Title
Maughanaclea Renewable Energy Development

Drawn By	Checked By
NL	RW
Project No.	Drawing No.
240225	Figure 6-1
Scale	Date
1:200,000 - A3	11.03.2026

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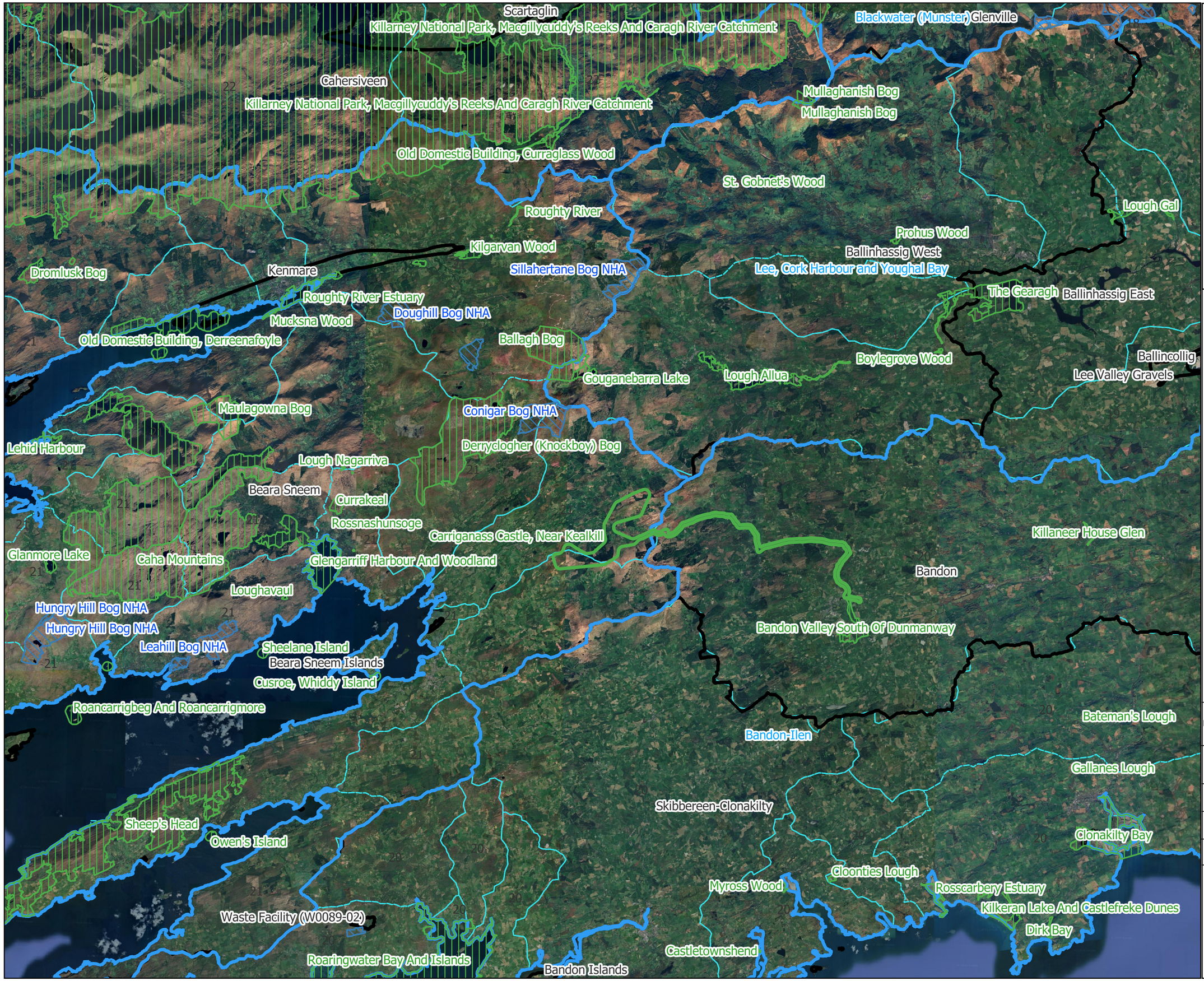

Map Legend

- EIAR Site Boundary
- Natural Heritage Areas (NHA)
- Proposed Natural Heritage Area (pNHA)
- WFD Hydrological Subcatchments
- WFD Hydrological Catchemnts
- WFD Groundwater Bodies

Drawing Title

Nationally Designated Sites within the Likely Zone of Influence

Project Title

Maughanaclea Renewable Energy Development

Drawn By	Checked By
NL	RW
Project No.	Drawing No.
240225	Figure 6-2
Scale	Date
1:200,000 - A3	11.03.2026

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Website:www.mkoireland.ie

Table 6-4 Identification of Nationally designated sites within the Likely Zone of Influence

Designated Site	Distance from Proposed Project (km)	Likely Zone of Influence Determination
Natural Heritage Area (NHA)		
Conigar Bog NHA [002386]	**5.3 km from the Proposed Wind Farm.** **6.7km from the Proposed Grid Connection**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this NHA. The Proposed Project is located approx. 5.3km south of Conigar Bog NHA, in a separate hydrological sub catchment. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this NHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**
Slaheny River Bog NHA [000383]	**11.5km from the Proposed Wind Farm.** **12.7km from the Proposed Grid Connection**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this NHA. The Proposed Project is located approx. 11.5km southeast of Slaheny River Bog NHA, in a separate hydrological sub catchment. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this NHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**
Sillahertane Bog NHA [001882]	**11.4km from the Proposed Wind Farm** **13.7km from the Proposed Grid Connection**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this NHA. The Proposed Project is located approx. 11.4km south of Sillahertane Bog NHA, in a separate hydrological sub catchment. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this NHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**
Proposed Natural Heritage Areas (pNHA)		
Bandon Valley South of Dunmanway pNHA [001035]	**The southern section of the Proposed Grid Connection extends into the northern boundary of this pNHA.** **14km from the Proposed Wind Farm**	The southern section of the Proposed Grid Connection extends into the northern boundary of this pNHA. However, the Proposed Grid Connection will be fully confined to the existing road network. Therefore, there will be no direct effects on this pNHA. There is downstream hydrological connectivity via the Proposed Grid Connection and this pNHA via the River Bandon and associated tributaries, which cross the Proposed Grid Connection in four places, flowing in a southerly direction into this pNHA.

		Therefore, a potential pathway for indirect impact as a result of deterioration in water quality associated with the Proposed Grid Connection was identified. The Proposed Wind Farm is located within a separate hydrological sub catchment than this pNHA. Therefore, there is no potential for indirect impacts on this pNHA as a result of deterioration of water quality associated with the Proposed Wind Farm. **A potential pathway for significant effect on the Nationally Designated Site has been identified, and it is considered for further assessment.**
Carriganass Castle, Near Kealkill pNHA [002099]	**2.9km from the Proposed Wind Farm** **5.4km from Proposed Grid Connection**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this pNHA. The Proposed Project is located approx. 2.9km west of Carriganass Castle, Near Kealkill pNHA. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this pNHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**
Goughanebarra Lake pNHA [001057]	**7.6km from the Proposed Wind Farm** **9.7km from the Proposed Grid Connection.**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this pNHA. The Proposed Project is located approx. 7.6km southwest of Goughanebarra Lake pNHA, in a separate hydrological sub catchment. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this pNHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**
Derryclogher (Knockboy) Bog pNHA [001873]	**7.1km from the Proposed Wind Farm** **8.5km from the Proposed Grid Connection**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this pNHA. The Proposed Project is located approx. 7.1km southwest of Derryclogher (Knockboy) Bog pNHA, in a separate hydrological sub catchment. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this pNHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**
Ballagh Bog pNHA [001886]	**7.9km from the Proposed Wind Farm** **9.7km from the Proposed Grid Connection.**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this pNHA. The Proposed Project is located approx. 7.9km southwest of Ballagh Bog pNHA, in a separate hydrological sub catchment. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated

		Site. As such, potential for direct or indirect impact on this pNHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**
Lough Allua pNHA [001065]	**8km from the Proposed Wind Farm** **7.3km from the Proposed Grid Connection**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this pNHA. The Proposed Project is located approx. 7.3km south of Lough Allua pNHA, in a separate hydrological sub catchment. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this pNHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**
Domestic Building Near Glengariff pNHA [002049]	**12km from the Proposed Wind Farm** **14.8km from the Proposed Grid Connection**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this pNHA. The Proposed Project is located approx. 12km west of Domestic Building Near Glengariff pNHA, No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this pNHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**
Cusroe, Whiddy Island pNHA [000110]	**12.5km from the Proposed Wind Farm** **15.5km from the Proposed Grid Connection**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this pNHA. The Proposed Project is located approx. 12.5km northwest of Cusroe, Whiddy Island pNHA, in a separate hydrological sub catchment. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this pNHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**
Glengariff Harbour and Woodland pNHA [000090]	**12.8km from the Proposed Wind Farm** **15.7km from the Proposed Grid Connection**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this pNHA. The Proposed Project is located approx. 12.8km northwest of Glengariff Harbour and Woodland pNHA, in a separate hydrological sub catchment. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this pNHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**
Currakeal pNHA [001826]	**13.2km from the Proposed Wind Farm**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this pNHA.

	15.6km from the Proposed Grid Connection	The Proposed Project is located approx. 13.2km southwest of Currakeal pNHA, in a separate hydrological sub catchment. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this pNHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**
Lough Namaddra and Lough West pNHA [001069]	**13.2km from the Proposed Wind Farm** **15.4km from the Proposed Grid Connection**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this pNHA The Proposed Project is located approx. 13.2km southwest of Lough Namaddra and Lough West pNHA, in a separate hydrological sub catchment. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this pNHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**
Rossnashunsoge pNHA [001537]	**13.6km from the Proposed Wind Farm** **16.2km from the Proposed Grid Connection**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this pNHA. The Proposed Project is located approx. 13.6km southwest of this Rossnashunsoge pNHA, in a separate hydrological sub catchment. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this pNHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**
Lough Nagarriva pNHA [001369]	**13.8km from the Proposed Wind Farm** **16.1km from the Proposed Grid Connection**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this pNHA. The Proposed Project is located approx. 13.8km southwest of Lough Nagarriva pNHA, in a septate hydrological sub catchment. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this pNHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**
Boylegrove Wood pNHA [001854]	**18.8km from the Proposed Wind Farm** **12.4km from the Proposed Grid Connection**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this pNHA. The Proposed Project is located approx. 12.4km southwest of Boylegrove Wood pNHA, in a separate hydrological catchment. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this pNHA can be excluded.

		No pathway for significant effects on the Nationally Designated Site has been identified.
The Gearagh pNHA [000108]	**19.4km from the Proposed Wind Farm** **13km from the Proposed Grid Connection**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this pNHA. The Proposed Project is located approx. 13km southwest of the Gearagh pNHA, in a separate hydrological sub catchment. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this pNHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**
Killaneer House Glen pNHA [001062]	**26km from the Proposed Wind Farm** **13.6km from the Proposed Grid Connection**	There will be no direct effects as the Proposed Project is located entirely outside the boundary of this pNHA. The Proposed Project is located approx. 13.6km west of Killaneer House Glen pNHA. No source-pathway-receptor chain for impact was identified between the Proposed Project and this Nationally Designated Site. As such, potential for direct or indirect impact on this pNHA can be excluded. **No pathway for significant effects on the Nationally Designated Site has been identified.**

The following European designated sites were identified as being within the Likely ZOI and are assessed further in the accompanying Natura Impact Statement (NIS):

- Bandon River SAC [002171]
- Mullaghanish to Musheramore Mountains SPA [004162]

The following nationally designated sites have been identified as being within the Likely ZOI of the Proposed Project:

- Bandon Valley South of Dunmanway pNHA [001035].

6.3.1.2 NPWS Article 17 Reporting

A review of the Irish Reports for Article 17 of the Habitats Directive (92/42/EEC), including the Heath, Bogs and Mires, Irish Semi-Natural Grassland Survey datasets, National Survey of Native Woodlands and Ancient and Long-Established Woodland datasets was carried out as part of this assessment.

Article 17 Annex I habitats are mapped within, and in the vicinity of the Site (**Figure 6-3).** Areas of Article 17 Wet heath [4010], Dry heath [4030], and Blanket bog (active)* [7130] are mapped within the south and north of the Site. No Wind Farm infrastructure is proposed for these areas of mapped Article 17 Annex I habitats. An area of Alpine/ subalpine heath [4060] is mapped in the vicinity of T7 and T8, within the south of the Site. The area of mapped Article 17 Alpine/ subalpine heath in the vicinity of T7/ T8 comprises Conifer Plantation (WD4) **(Plate 6-1)** and does not conform to this Annex I habitat.

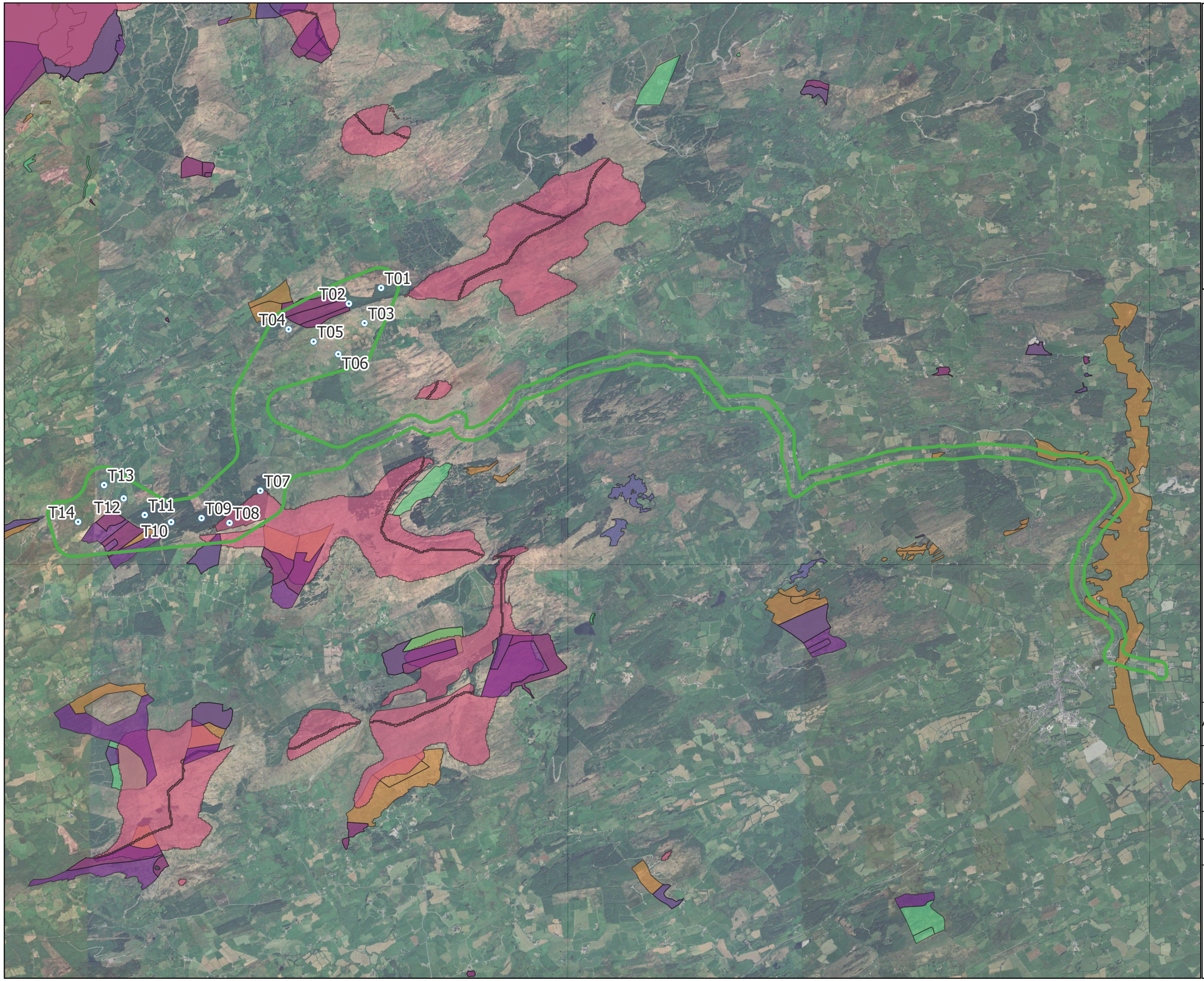
Areas of Dry Heath [4030] are mapped adjacent to the Proposed Grid Connection. These areas of Article 17 mapped Dry Heath [4030] comprise Improved Agricultural Grassland (GA1)/ Dry Meadows and Grassy Verges (GS2) **(Plate 6-2)** and do not conform to this Annex I habitat. The Proposed Grid Connection is confined to the existing road network, classified as Buildings and Artificial Surfaces (BL3).

There is downstream hydrological connectivity via the Owngar (Cork) River, which flows through the Site, in a southerly direction into Inner Bantry Bay where the following Article 17 habitats are mapped; Estuaries (approximately 12.3km), Tidal Mudflats and Sandflats (approximately 12.3km), Coastal Lagoon (approximately 15km), and Large Shallow Inlets and Bays (approximately 15.6km). Areas of Old Oak Woodland [91A0] are mapped approximately 1km to 2.4km south of the Proposed Grid Connection.

The distribution of relevant Article 17 mapped Annex I habitat records is detailed in **Figure 6-3.**

*Plate 6-1 Mature **Conifer Plantation (WD4)** where T7, T8 and associated Wind Farm infrastructure are located, mapped as Article 17 Alpine/ subalpine heath [4060].*

*Plate 6-2 **Dry Meadows and Grassy Verges (GS2)** to the south of the Proposed Grid Connection mapped as Dry Heath [4030].*



Map Legend

- EIAR Site Boundary
- Proposed Turbine Locations
- [7130] Active Blanket Bog
- [4060] Alpine and Subalpine Heath
- [4030] Dry Heath
- [91A0] Old Oak Woodlands
- [4010] Wet Heath

N

Drawing Title

Article 17 Habitats recorded within and in the vicinity of the Proposed Project

Project Title

Maughanaclea Renewable Energy Development

Drawn By	Checked By
NL	RW
Project No.	Drawing No.
240225	Figure 6-3
Scale	Date
1:55,000 - A3	11.03.2026

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6.3.1.3 Vascular Plants

A search was made in the New Atlas of the British and Irish Flora (Preston *et al*, 2002) 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 (Curtis, 1988) or the **Flora (Protection) Order 2022 S.I. No. 235** had been recorded in the relevant 10km square in which the Site is situated **[W05, W15, W25].** Species of conservation concern are given in **Table 6-4**.

The NPWS Flora (Protection) Order 2022 online map viewer[27] was also consulted for records of Flora (Protection) Order species within or adjacent to the Proposed Project.

No rare or unusual plant species, or FPO Species were recorded within hectad **W15.**

*Table 6-4 Species listed designated under the Flora Protection Order or the Irish Red Data Book within Hectad **W05 & W25***

Common Name	Scientific Name	Status	Hectad
Killarney Fern	*Trichomanes speciosum*	Annex II, IV, FPO, LC	W05
Narrow-leaved Helleborine	*Cephalanthera longifolia*	FPO, VU	W25
Small-white Orchid	*Pseudorchis albida*	FPO, VU	
Annual Knawel	*Scleranthus annuus*	FPO, VU	
Marsh Clubmoss	*Lycopodiella inundata*	Annex V, FPO	
Irish Lady's-tresses	*Spiranthes romanzoffiana*	FPO, NT	

EU Habitats Directive (Council Directive 92/43/EEC) Annex II. IV plant species. FPO = Floral Protection Order; Red List of Vascular Plants = Near Threatened (NT), Vulnerable (VU), Least Concern (LC)

6.3.1.4 Bryophytes

A search was made on the NPWS FPO Bryophyte (non-vascular land plants comprising of mosses, hornworts, and liverworts) 2022 Map Viewer to investigate whether any rare or unusual Bryophyte species had been recorded in the relevant 10km squares in which the Proposed Project is situated (**W05, W15, W25).**

No rare Bryophyte species were recorded within any of the relevant 10km grid squares in which the Proposed Project is situated in.

6.3.1.5 NPWS Protected Species Records

NPWS online records were searched on the 29/07/2025 for records of any rare or protected species of flora or fauna within in the 10-kilometre grid squares (**W05, W15, W25**), in which the study area lies. A data request was sent to the NPWS for records of Rare and Protected Species for the hectads in which the Proposed Project is located on the 9th of July 2025 and a response was received on the 25th of July 2025. **Table 6-5** lists the rare and protected species records obtained from the NPWS during this study.

[27] *Flora (Protection) Order 2022 Map Viewer*
https://heritagedata.maps.arcgis.com/apps/webappviewer/index.html?id=a41ef4e10227499d8de17a8abe42bd1e

Table 6-5 Records for rare and protected species, NPWS.

Common Name	Scientific Name	Designation	Hectad
Vascular Plants			
Annual knawel	*Scleranthus annuus*	FPO	W25
Irish Lady's tresses	*Spiranthes romanzoffiana*	FPO	W25
Killarney fern	*Trichomanes speciosum (Vandenboschia speciosa)*	Annex II, IV, FPO	W05
Small cudweed	*Logfia minima (Filago minima)*	FPO	W25
Marsh clubmoss	*Lycopodiella inundata*	Annex V, FPO	W25
Narrow leaved helleborine	*Cephalanthera longifolia*	FPO	W25
Small white orchid	*Pseudorchis albida*	FPO	W25
Bryophytes			
Cladonia ciliata var.tenuis	*Cladonia ciliata var.tenuis*	Annex V	W15, W25
Cladonia portentosa	*Cladonia portentosa*	Annex V	W05, W15
Reptiles and Amphibians			
Common frog	*Rana temporaria*	Annex V, WA	W15, W25
Common lizard	*Zootoca vivipara (Lacerta vivipara)*	WA	W25
Mammals			
Daubenton's bat	*Myotis daubentoni*	Annex IV, WA	W05
Eurasian badger	*Meles meles*	WA	W25
Eurasian otter	*Lutra lutra*	Annex II, IV, WA	W25
Eurasian Pygmy shrew	*Sorex minutus*	WA	W05, W25
Irish hare	*Lepus timidus*	Annex V, WA	W05
Irish stoat	*Mustela erminea*	WA	W25
Lesser horseshoe bat	*Rhinolophus hipposideros*	Annex II, IV, WA	W05
Natterer's bat	*Myotis nattereri*	Annex IV, WA	W05
Brown long eared Bat	*Plecotus auritus*	Annex IV, WA	W05
Pine Marten	*Martes martes*	Annex V, WA	W15
Sika deer	*Cervus nippon*	WA	W05, W15, W25

Common Name	Scientific Name	Designation	Hectad
Vascular Plants			
Western European hedgehog	*Erinaceus europaeus*	WA	W05, W15, W25
Bird Species			
Barn owl	*Tyto alba*	BoCCI Red List	W15
Peregrine falcon	*Falco peregrinus*	Annex I	W15, W25
Mollusc			
Kerry slug	*Geomalacus (Geomalacus) maculosus*	Annex II, IV, WA	W05, W15, W25

Annex II, Annex IV, Annex V – Of EU Habitats Directive, WA – Irish Wildlife Acts (1976-2017), Red Data List (Curtis and McGough 1988), BoCCI Red List – Birds of Conservation Concern in Ireland (Population for which the species is red listed in brackets), AEWA -Agreement on the Conservation of African-Eurasian Migratory Waterbirds [1999], FPO- Flora Protection Order

6.3.1.6 National Biodiversity Data Centre (NBDC) Records

A search of the NBDC website was conducted in advance of undertaking the initial field survey in July 2024. This helped to inform survey effort and provide a baseline of likely species composition in the area. An updated search of the NBDC website was conducted in November 2025. This helped to inform survey effort and provide a baseline of likely species composition in the area. Records of protected fauna recorded in the relevant hectads **(W05, W15, W25)** are provided in **Table 6-6. Table 6-7** lists the Third- Schedule non-native invasive species recorded within the relevant hectads.

NBDC and Bird Atlas records for birds are provided in Chapter 7 and are not repeated here.

Table 6-6 NBDC records for protected species and species of conservation interest (excl. birds) in hectads W05, W15, W25.

Common Name	Scientific Name	Status	Hectad
Reptiles and Amphibians			
Common Frog	*Rana temporaria*	Annex V, WA	W05, W15, W25
Smooth Newt	*Lissotriton vulgaris*	WA	W05, W25
Common Lizard	*Zootoca vivipara*	WA	W05, W15, W25
Invertebrates			
Marsh Fritillary	*Euphydryas aurinia*	Annex II	W05, W15
Terrestrial Mammal			
West European Hedgehog	*Erinaceus europaeus*	WA	W15, W05, W25
Badger	*Meles meles*	WA	W05, W15, W25

Common Name	Scientific Name	Status	Hectad
Brown Long-eared Bat	*Plecotus auritus*	Annex IV, WA	W05, W15, W25
Common Pipistrelle	*Pipistrellus pipistrellus sensu stricto*	Annex IV, WA	W05, W15, W25
Daubenton's Bat	*Myotis daubentonii*	Annex IV, WA	W05, W15, W25
Leisler's Bat	*Nyctalus leisleri*	Annex IV, WA	W05, W15, W25
Lesser Horseshoe Bat	*Rhinolophus hipposideros*	Annex II, Annex IV, WA	W05, W15
Soprano Pipistrelle	*Pipistrellus pygmaeus*	Annex IV, WA	W05, W15, W25
Whiskered Bat	*Myotis mystacinus*	Annex IV, WA	W15, W25
Natterer's Bat	*Myotis nattereri*	Annex IV, WA	W25
Otter	*Lutra lutra*	Annex II, Annex IV, WA	W05, W15, W25
Pine Marten	*Martes martes*	Annex V, WA	W05, W15, W25
Red Squirrel	*Sciurus vulgaris*	WA	W05, W15, W25
Pygmy Shrew	*Sorex minutus*	WA	W05, W15
Red Deer	*Cervus elaphus*	WA	W15
Mollusc			
Kerry Slug	*Geomalacus (Geomalacus) maculosus*	Annex II, Annex IV, WA	W05, W15, W25
Freshwater Pearl Mussel	*Margaritifera (Margaritifera) margaritifera*	Annex II, Annex V, WA	W05, W15, W25

Annex II, Annex IV, Annex V – Of EU Habitats Directive, WA – Irish Wildlife Acts (1976-2017).

Table 6-7 NBDC records for Invasive species.

Common Name	Scientific Name	Threat	Hectad
Giant rhubarb	*Gunnera tinctoria*	Third Schedule, High Impact	W05
Rhododendron	*Rhododendron ponticum*	Third Schedule, High Impact	W05, W15, W25
Japanese knotweed	*Fallopia japonica*	Third Schedule, High Impact	W05, W25
Himalayan Balsam	*Impatiens glandulifera*	Third Schedule, High Impact	W05, W25
American Mink	*Neovison vison*	High Impact	W05, W25
Sika Deer	*Cervus nippon*	High Impact	W05, W15, W25
Brown Rat	*Rattus norvegicus*	High Impact	W05, W25

Himalayan Knotweed	*Persicaria wallichii*	Medium Impact	W05, W15
Canadian Waterweed	*Elodea canadensis*	High Impact	W25
Sika deer	*Cervus nippon*	High Impact	W05, W15, W25
Rabbit	*Oryctolagus cuniculus*	Medium	W05, W15, W25
Jenkins Spire Snail	*Potamopyrgus antipodarum*	Medium	W05, W15, W25
Two-spined acaerna	*Acaena ovalifolia*	Medium	W15
Sycamore	*Acer pseudoplatanus*	Medium	W05, W15, W25
Three cornered garlic	*Allium triquetrum*	Third Schedule, High Impact	W25, W05
Budapest Keeled Slug	*Tandonia budapestensis*	Medium	W05, W25
Feral goat	*Capra hircus*	Medium	W25
Canada Goose	*Branta canadensis*	Third Schedule, High Impact	W25
Butterfly bush	*Buddleja davidii*	Medium	W05
Salmon Berry	*Rubus spectabilis*	Medium	W05
Spanish bluebell	*Hyacinthoides hispanica*	Third Schedule, High Impact	W05
Traveller's joy	*Clematis vitalba*	Medium	W05
Common Garden snail	*Cornu aspersum*	Medium	W05
Bank vole	*Myodes glareolus*	Medium	W05
House mouse	*Mus musculus*	High Impact	W05

6.3.1.7 Marsh Fritillary

The NPWS point dataset for Marsh Fritillary (*Euphydryas aurinia*) was reviewed on GIS to ascertain whether records for the species are present in the vicinity of the Site. There are no records of Marsh Fritillary within the Site. However, Marsh fritillary is known to occur within hectads W05, W15 as per the NBDC records.

6.3.1.8 Kerry Slug

The NBDC map viewer was reviewed to ascertain whether records for Kerry Slug are present in the vicinity of the Site. There is one record of Kerry Slug in the east of the Proposed Wind Farm site, approximately. 130m to the east of T3. Further, Kerry slug is known to occur within the hectads W05, W15, and W25 as per the NBDC records.

6.3.1.9 Freshwater Pearl Mussel Catchment

The Proposed Wind Farm is located within the Owvane and Mealagh *Margaritifera* sensitive areas (respectively), which are both listed as catchments of extant Freshwater Pearl Mussel populations outside of the SAC populations listed in S.I. 296 of 2009.Therefore, the Proposed Wind Farm is not

located within a *Margaritifera* catchment of SAC populations listed under regulations S.I. No. 296/2009 - The European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009[28]. The Proposed Grid Connection is located within the Bandon and Caha *Margaritifera* catchment. Therefore, the Proposed Grid Connection is located within a Margaritifera catchment of SAC populations listed under regulations S.I. No. 296/2009 - The European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009.

Further, there are known records of Freshwater Pearl Mussel within the Bandon River SAC, and Freshwater pearl mussel are known to occur within the hectads W05, W15, and W25 as per the NBDC records.

6.3.1.10 Bats

The following desk study data review has been summarised with full details provided in the Bat Report (**Appendix 6-2).**

Eight of Ireland's nine bat species were recorded within the hectads reviewed. The Site is located within the published range of all Irish bat species, apart from Nathusius' pipistrelle and Natterer's bat.

Eleven lesser horseshoe bat roosts were identified within the hectads overlapping the Site. The recognised Core Sustenance Zone (CSZ) for lesser horseshoe bat is 2 km (BCT, 2020), within which roosts and associated foraging and commuting habitat may be considered functionally linked. The nearest known lesser horseshoe bat roost is located approximately 2 km from the Proposed Grid Connection and approximately 5.5 km from the nearest proposed turbine (T03). The remaining ten roost records are located between approximately 3 km and 7 km from the nearest proposed turbines. None of the recorded roosts are associated with Special Areas of Conservation designated for lesser horseshoe bat, with the nearest SAC designated for this species located more than 12 km from the Site. This further indicates that no European sites designated for lesser horseshoe bat have any functional ecological linkage with the Proposed Project.

6.3.1.11 Aquatic Fauna and Fisheries Data

The following desk study data review has been summarised with full details provided in the Aquatic Baseline Report (**Appendix 6-3).**

6.3.1.11.1 *Inland Fisheries Ireland Data*

A search of the Inland Fisheries Ireland (IFI) online database was carried out to determine the species richness of the adjacent watercourses. As summarised in the Aquatic Baseline Report:

'*Surveys were conducted by IFI as part of water sampling for the Water Framework Directive, in the immediate vicinity of the Proposed Wind Farm Study area and Proposed Grid Connection study area between July 2010-August 2021. Atlantic salmon (Salmo salar), brown trout (Salmo trutta), sea trout (Salmo trutta), european eel (Anguilla anguilla), minnow (Phoxinus phoxinus), stone loach (Barbatula barbatula) and three-spined stickleback (Gasterosteus aculeatus) were recorded during surveys.*

Sampling of the Bandon River Catchment on 9th and 12th September 2018 saw a total of 8 species recorded across 36 sites within the catchment. Species recorded included brown trout (0+ and 1+ and older), salmon (0+ and 1+ and older), European eel, minnow, stone loach, three-spined stickleback, lamprey sp. (Petromyzontiformes spp.) and pike (Esox lucius), with brown trout being the most abundant species.

[28] *S.I. No. 296/2009- The European Communities Objectives (Freshwater Pearl Mussel) Regulations 2009* https://www.irishstatutebook.ie/eli/2009/si/296

Further sampling of the Bandon River Catchment took place between 30th August and 6th September 2021, with a total of seven fish species recorded across 35 sites. Brown trout was the most abundant species captured at all sites surveyed by IFI. Other species caught throughout the surveyed sites included salmon, European eel, lamprey (Lampetra sp.), minnow, stone loach and three-spined stickleback.

Sampling of the Owvane (Cork) River Catchment by IFI between 23rd and 26th September 2024 saw a total of six fish species recorded across 13 sites, with brown trout being the most common and abundant species, caught at 12 of the 13 sites surveyed by IFI. Other species in order of caught across the survey sites included salmon, European eel, minnow, roach and three-spined stickleback

Scoping response received from IFI on 15/01/2025 highlighted the Owvane, Mealagh and Bandon Rivers and their tributaries as significant salmonid fisheries.'

6.3.1.11.2 Other Protected Aquatic Species

As summarised in the Aquatic Baseline Report:

'A Desk Study was conducted to gather baseline information from online sources and records on the aquatic habitats and aquatic dependent species within the vicinity of the survey area.

Watercourses designated as Salmonid Waters under S.I 293 (1988) are those fresh waters classified under the first schedule, which are 'capable of supporting Salmon (Salmo salar), Trout (Salmo trutta), Char (Salvelinus) and Whitefish (Coregonus)' species. No watercourses within the vicinity of the Proposed Wind Farm or Grid Route are designated in the Salmonid Regulations (S.I. 293 / 1988).

Wind Farm aquatic survey locations WF 1– WF 17 and GC 1, and survey locations WF 18– WF 23 are located within the Owvane and Mealagh Margaritifera sensitive areas (respectively), which are both listed as catchments of extant Freshwater Pearl Mussel populations outside of the SAC populations listed in S.I. 296 of 2009. Survey locations GC 2– GC 10 are located within the Bandon/Caha Margaritifera sensitive area, which is listed as a catchment of SAC populations of Freshwater Pearl Mussel listed in S.I. 296 of 2009. NPWS Point data for Freshwater Pearl Mussel show records of Freshwater Pearl Mussel approx. 0.16km downstream of sites GC 9 and GC 10, approx. 1.7km upstream of site GC 4, and approx. 0.23km east of the eastern side of the Proposed Grid Connection (Grid ref: W 24154 55632).

The incidence of Annex II and V species white-clawed crayfish (Austropotamobius pallipes) has been recorded by NPWS within the same 10km hectad (W15) as the part of the Proposed Wind Farm study area and Proposed Grid Connection study area. There are no records of white-clawed crayfish within or directly adjacent to the Proposed Wind Farm or Proposed Grid Connection.

There are no mapped instances of freshwater Annex I habitats within or in the vicinity of the Proposed Wind Farm or Proposed Grid Connection Study areas

Aquatic plant species protected under the Flora (Protection) Order 2022 (S.I. No. 235/2022) were not recorded within the 10km hectads'.

6.3.1.12 Regional and Local Hydrology

The following sections have been summarised from **Chapter 9: Hydrology and Hydrogeology** in this chapter to provide a context for the assessment on biodiversity.

Regional Scale

Regionally, the Proposed Wind Farm site is located in the WFD Dunmanus-Bantry-Kenmare Surface Water Catchment within Hydrometric Area No. 21 of the Southwestern River Basin District.

Local Scale

Locally the Proposed Wind Farm site is contained within 2 sub-catchments; the Coomhola_SC_010 and the Mealagh_SC_010 where there are 11 no. and 3 no. proposed turbines respectively.

Within the Coomhola_SC_010, the Proposed Wind Farm site drains into the Owvane River catchment with 11 no. proposed turbines located in this catchment (T1 – T9, T12 and T13). The Owvane River drains into Bantry Bay approximately 10km downstream of the Site.

Within the Mealagh_SC_010, the Proposed Wind Farm site drains into the Mealagh River catchment with 3 no. proposed turbines located in this catchment T10, T11 and T14). The Mealagh River also drains into Bantry Bay approximately 10km downstream of the Site.

Within the Owvane River catchment, the northern cluster is located within 2 river sub-basins: the Owvane (Cork)_010 and the Owngar (Cork)_010, while the southern cluster is located only in the Owngar (Cork)_010. Two turbines (T1 and T2) are located in Owvane (Cork)_010 and nine (T3 – T9, T12 and T13) in the Owngar (Cork)

As stated above, the Owngar River valley separates the northern and southern cluster of the Proposed Wind Farm site. The Owngar River flows into the Owvane River approximately 2km downstream of the Proposed Wind Farm site.

Within the Mealagh River catchment, the southern cluster is located in the Mealagh_010 sub-basin only.

With the exception of 2.9km length at the Proposed Wind Farm site, the Proposed Grid Connection cable route is located mainly in the Bandon River catchment where it passes through the Bandon_SC_010 to Bandon_SC_030 sub-catchments.

The 2.9km length of Proposed Grid Connection cable at the Proposed Wind Farm site, including the proposed 110kV onsite substation, is located in the Coomhola_SC_010 which drains locally to the Owngar River (Owngar (Cork)_010).

6.3.1.13 Conclusion of the Desktop Study

The desktop study has provided information about the existing environment of the hectads (**W05, W15, W25)** within which the Proposed Project is located. A number of watercourses drain the Proposed Wind Farm Site, namely the Mealagh River and Owngar (Cork) River. The Bandon River (and associated tributaries) have hydrological connectivity with the Proposed Grid Connection and the downstream Bandon River SAC [002171]. Further the Bandon Valley South of Dunmanway pNHA [001035] is located downstream of the Proposed Grid Connection.

The desktop study identified that a variety of protected faunal species are known to occur within the wider study area, including bats, otter, pine marten and badger. 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[29]).

There is one record of Kerry slug in the east of the Proposed Wind Farm site, approximately. 130m to the east of T3. Further, Kerry slug is known to occur within the hectads W05, W15, and W25 as per the NBDC records. There are no NPWS point records for marsh fritillary within the Site, however this species is known to occur within hectads W05, W15 as per the NBDC records.

The Proposed Wind Farm is located within the *Margaritifera* catchment Dunmanus-Bantry-Kenmare catchment of other extant populations. The Proposed Grid Connection is located within the Bandon and Caha *Margaritifera* catchment. Therefore, the Proposed Grid Connection is located within a *Margaritifera* catchment of SAC populations listed under regulations S.I. No. 296/2009 - The European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009. Further, there are known records of Freshwater Pearl Mussel within the Bandon River SAC, and Freshwater pearl mussel are known to occur within the hectads W05, W15, and W25 as per the NBDC records.

The desk study identified revealed that Annex I Article 17 habitats are present within the Site, namely Wet heath [4010], Dry heath [4030], Blanket bog (active)* [7130], and Alpine/ subalpine heath [4060]. In addition, the desk study revealed a number of Red Listed and FPO plant species within the hectads W05 and W25.

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

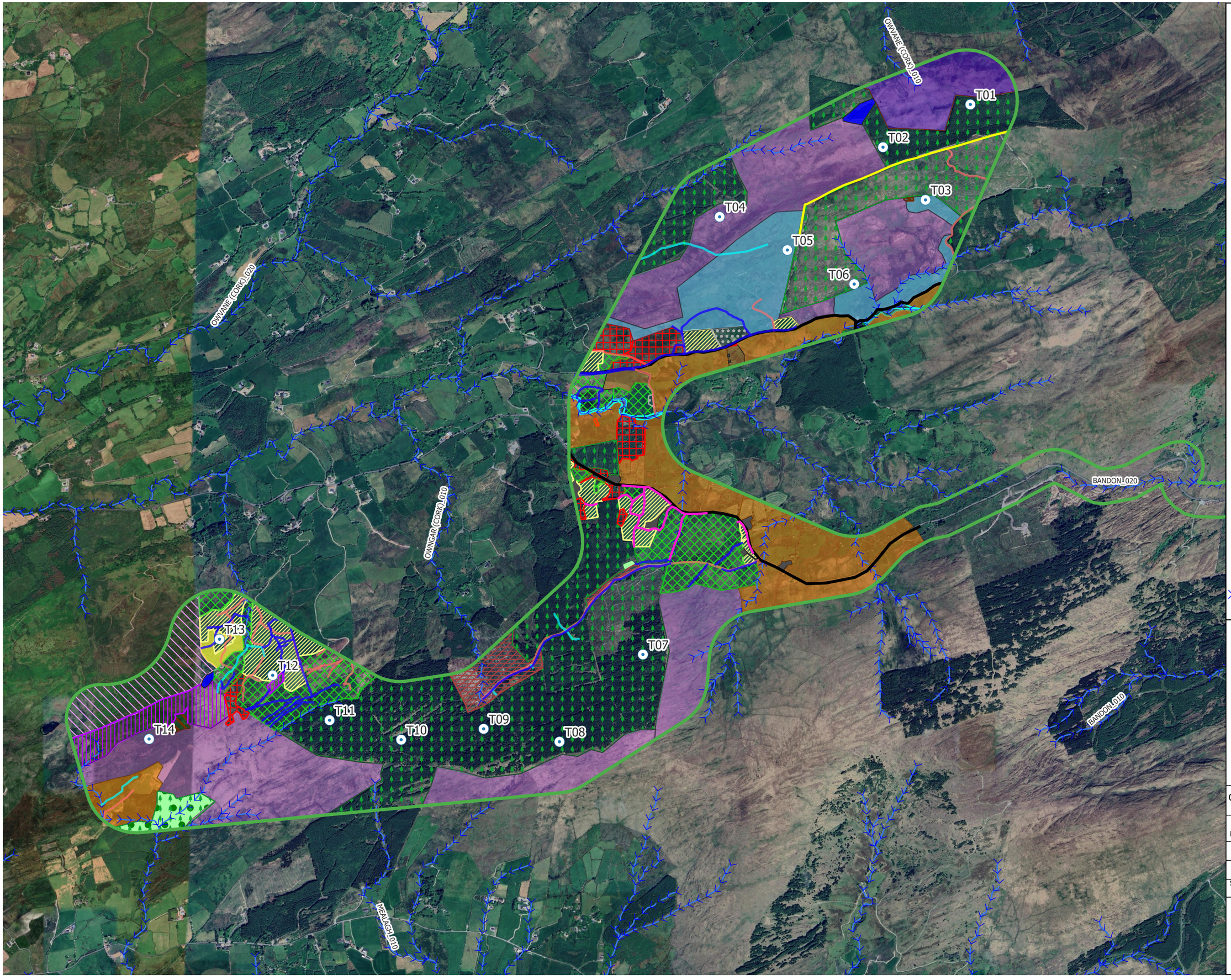
[29] *Marnell, F., Kingston, N. & Looney, D. (2009) Ireland Red List No. 3: Terrestrial Mammals, National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.*

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 Wind Farm site is provided on **Figure 6-4, Figure 6-5 and Figure 6-6**. A map showing the Proposed Wind Farm footprint overlaying the Habitat Map is shown on **6-7 and Figure 6-8.** Relevé data is detailed in **Appendix 6-1** of this EIAR.

A total of twenty-two habitats were recorded within the Site, including:

1. Conifer Plantation (WD4)
2. Recently Clear-Felled Woodland (WS5)
3. Improved Agricultural Grassland (GA1)
4. Wet Grassland (GS4)
5. Dry Humid Acid Grassland (GS3)
6. Dry Meadows and Grassy Verges (GS2)
7. Wet Heath (HH3)
8. Upland Blanket Bog (PB2)
9. Dry Siliceous Heath (HH1)
10. Spoil and Bare Ground (ED2)
11. Recolonising Bare Ground (ED3)
12. Buildings and Artificial Surfaces (BL3)
13. Scrub (WS1)
14. Dense Bracken (HD1)
15. Hedgerow (WL1)
16. Drainage Ditch (FW4)
17. Riparian Woodland (WN5)
18. Eroding Upland River (FW1)
19. Depositing Lowland River (FW2)
20. Dystrophic Lakes (FL1)
21. Treeline (WL2)
22. Immature Woodland (WS2)



Map Legend

- EIAR Site Boundary
- Proposed Turbine Locations
- Buildings and artificial surfaces (BL3)
- Spoil and bare ground (ED2)
- Dystrophic lakes (FL1)
- Improved agricultural grassland (GA1)
- Dry meadows and grassy verges (GS2)
- Wet grassland (GS4)
- Dense bracken (HD1)
- Wet heath (HH3)
- Upland blanket bog (PB2)
- Conifer plantation (WD4)
- Scrub (WS1)
- Recently-felled woodland (WS5)
- Improved Agricultural Grassland (GA1)/ Wet Grassland (GS4)
- Dry-Humid Acid Grassland (GS3)/ Wet Grassland (GS4)
- Dry Siliceous Heath (HH1)/ Dense Bracken
- Dry Siliceous Heath (HH1)/ Scrub (WS1)
- Upland Blanket Bog (PB2)/ Wet Heath (HH3)
- Riparian Woodland (WN5)/ Scrub (WS1)
- Immature Woodland(WS2)
- Buildings and artificial Surfaces (BL3)
- Spoil and Bare Ground (ED2)
- Spoil&Bare Ground (ED2)/ Recolonising Bare Ground (ED3)
- Eroding/Upland Rivers (FW1)
- Drainage Ditches (FW4)
- Hedgerows (WL1)/Treelines (WL2)
- WFD_RiverWaterbodies

Drawing Title
Overview of Habitats Recorded Within the Site

Project Title
Maughanaclea Renewable Energy Development

Drawn By	Checked By
NL	RW
Project No. 240225	Drawing No. Figure 6-4
Scale 1:20,000 - A3	Date 10.03.2026

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OWVANE (CORK) 020

OWNGAR (CORK) 010

MEALAGH 010

T13

T12

T14

T11

T10

T09

T08

T07

Map Legend

- EIAR Site Boundary
- Proposed Turbine Locations
- Buildings and artificial surfaces (BL3)
- Spoil and bare ground (ED2)
- Dystrophic lakes (FL1)
- Improved agricultural grassland (GA1)
- Dry meadows and grassy verges (GS2)
- Wet grassland (GS4)
- Dense bracken (HD1)
- Wet heath (HH3)
- Upland blanket bog (PB2)
- Conifer plantation (WD4)
- Scrub (WS1)
- Recently-felled woodland (WS5)
- Improved Agricultural Grassland (GA1)/ Wet Grassland (GS4)
- Dry Humic Acid Grassland (GS3)/ Wet Grassland (GS4)
- Dry Siliceous Heath (HH1)/ Dense Bracken (HD1)
- Dry Siliceous Heath (HH1)/ Scrub (WS1)
- Riparian Woodland (WN5)/ Scrub (WS1)
- Immature Woodland(WS2)
- Buildings and artificial Surfaces (BL3)
- Spoil and Bare Ground (ED2)
- Eroding/Upland Rivers (FW1)
- Drainage Ditches (FW4)
- Hedgerows (WL1)/Treelines (WL2)
- WFD River Waterbodies

N

Drawing Title
Habitats Recorded in the South of the Proposed Wind Farm

Project Title
Maughanaclea Renewable Energy Development

Drawn By	Checked By
NL	RW
Project No. 240225	Drawing No. Figure 6-5
Scale 1:12,000 - A3	Date 10.03.2026

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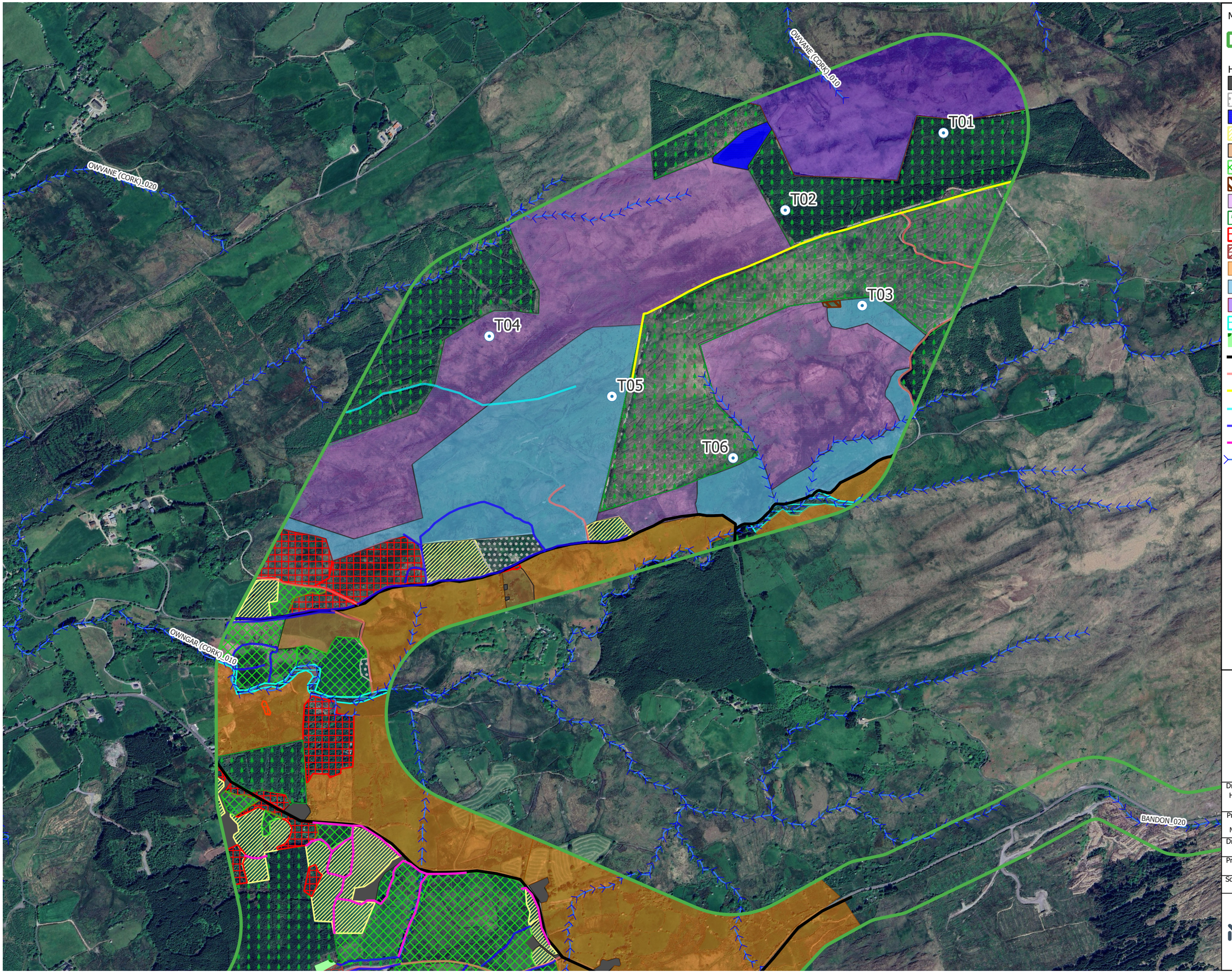

Map Legend

- EIAR Site Boundary
- Proposed Turbine Locations

Habitats

- Buildings and artificial surfaces (BL3)
- Spoil and bare ground (ED2)
- Dystrophic lakes (FL1)
- Improved agricultural grassland (GA1)
- Dry meadows and grassy verges (GS2)
- Wet grassland (GS4)
- Dense bracken (HD1)
- Wet heath (HH3)
- Conifer plantation (WD4)
- Scrub (WS1)
- Recently-felled woodland (WS5)
- Improved Agricultural Grassland (GA1)/ Wet Grassland (GS4)
- Dry Humic Acid Grassland (GS3)/ Wet Grassland (GS4)
- Upland Blanket Bog (PB2)/ Wet Heath (HH3)
- Riparian Woodland (WN5)/ Scrub (WS1)
- Immature Woodland(WS2)
- Buildings and artificial Surfaces (BL3)
- Spoil and Bare Ground (ED2)
- Spoil&Bare Ground (ED2)/ Recolonising Bare Ground (ED3)
- Eroding/Upland Rivers (FW1)
- Drainage Ditches (FW4)
- Hedgerows (WL1)/Treelines (WL2)
- WFD_RiverWaterbodies

Drawing Title
Habitats Recorded in the North of the Proposed Wind

Project Title
Maughanaclea Renewable Energy Development

Drawn By	Checked By
NL	RW
Project No. 240225	Drawing No. Figure 6-6
Scale 1:11,000 - A3	Date 10.03.2026

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OWVANE (CORK)_020

OWNGAR (CORK)_010

MEALAGH_010

T13

T12

T14

T11

T10

T09

T08

T07

Map Legend

- EIAR Site Boundary
- Proposed Turbine Locations
- Proposed Hardstands
- Proposed Met Mast Location
- Temporary Construction Compounds
- Proposed Security Compounds Cabins
- Proposed 110kV Substation
- Proposed New Roads
- Existing Road to be Upgraded
- Proposed Borrow Pits
- Proposed Peat and Spoil Management Areas
- Proposed Internal WF 33kV Cabling
- Proposed Grid Connection 110kV Cabling

Habitats

- Buildings and artificial surfaces (BL3)
- Spoil and bare ground (ED2)
- Dystrophic lakes (FL1)
- Improved agricultural grassland (GA1)
- Dry meadows and grassy verges (GS2)
- Wet grassland (GS4)
- Dense bracken (HD1)
- Wet heath (HH3)
- Upland blanket bog (PB2)
- Conifer plantation (WD4)
- Scrub (WS1)
- Recently-felled woodland (WS5)
- Improved Agricultural Grassland (GA1)/ Wet Grassland (GS4)
- Dry Humic Acid Grassland (GS3)/ Wet Grassland (GS4)
- Dry Siliceous Heath (HH1)/ Dense Bracken (HD1)
- Dry Siliceous Heath (HH1)/ Scrub (WS1)
- Riparian Woodland (WN5)/ Scrub (WS1)
- Immature Woodland(WS2)
- Buildings and artificial Surfaces (BL3)
- Spoil and Bare Ground (ED2)
- Eroding/Upland Rivers (FW1)
- Drainage Ditches (FW4)
- Hedgerows (WL1)/Treelines (WL2)
- Rivers

N

Drawing Title

Habitats Recorded in the South of the Proposed Windfarm overlain with Proposd Project Infrastructure

Project Title

Maughanaclea Renewable Energy Development

Drawn By	Checked By
NL	RW
Project No. 240225	Drawing No. Figure 6-7
Scale 1:12,000- A3	Date 10.03.2026

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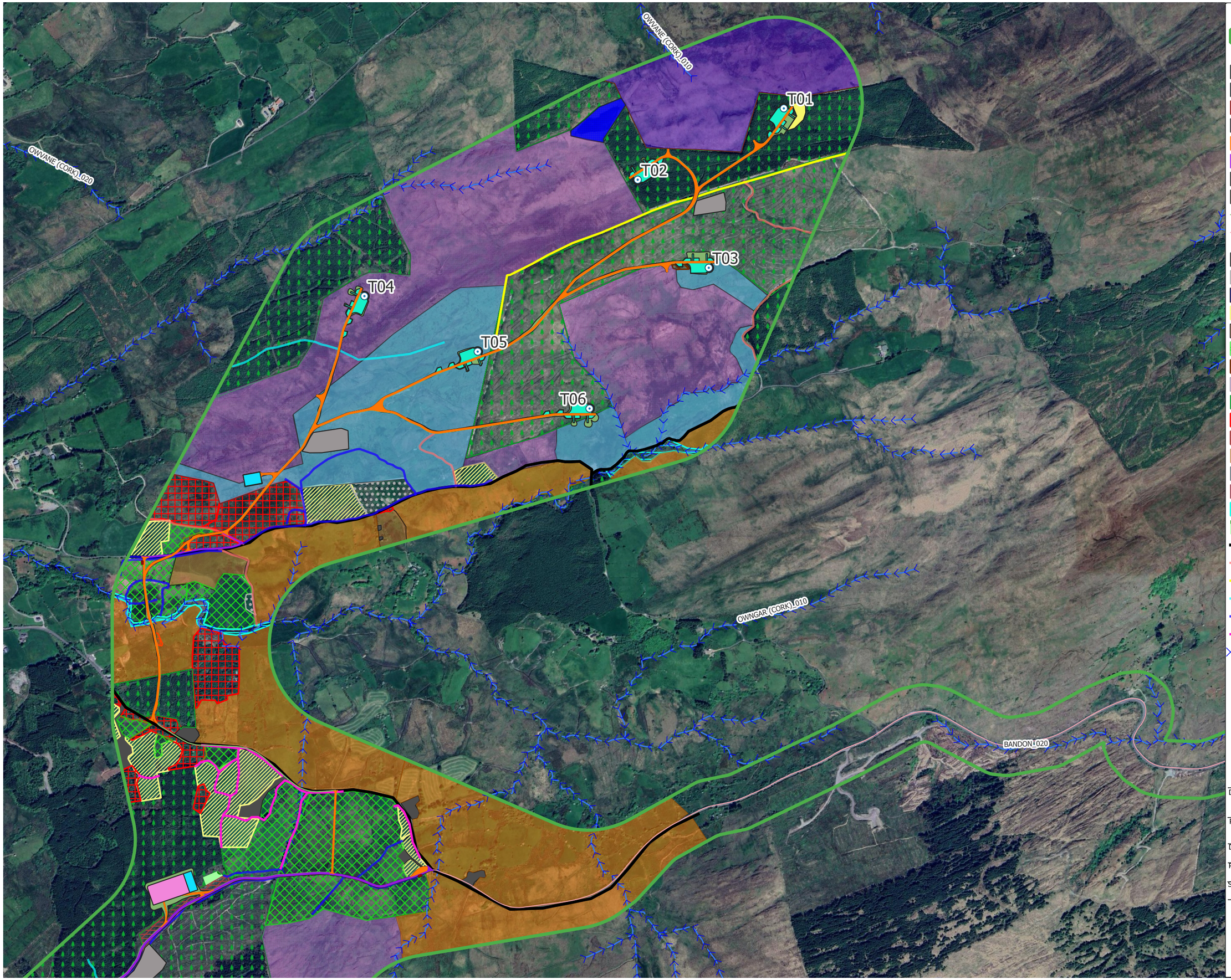

Map Legend

- EIAR Site Boundary
- Proposed Turbine Locations
- Proposed Hardstands
- Temporary Construction Compounds
- Proposed Security Compounds Cabins
- Proposed 110kV Substation
- Proposed New Roads
- Existing Road to be Upgraded
- Proposed Borrow Pits
- Proposed Peat and Spoil Management Areas
- Proposed Internal WF 33kV Cabling
- Proposed Grid Connection 110kV Cabling

Habitats

- Buildings and artificial surfaces (BL3)
- Spoil and bare ground (ED2)
- Dystrophic lakes (FL1)
- Improved agricultural grassland (GA1)
- Dry meadows and grassy verges (GS2)
- Wet grassland (GS4)
- Dense bracken (HD1)
- Wet heath (HH3)
- Conifer plantation (WD4)
- Scrub (WS1)
- Recently-felled woodland (WS5)
- Improved Agricultural Grassland (GA1)/ Wet Grassland (GS4)
- Dry Humic Acid Grassland (GS3)/ Wet Grassland (GS4)
- Upland Blanket Bog (PB2)/ Wet Heath (HH3)
- Riparian Woodland (WN5)/ Scrub (WS1)
- Immature Woodland(WS2)
- Buildings and artificial Surfaces (BL3)
- Spoil and Bare Ground (ED2)
- ED2/ ED3
- Eroding/Upland Rivers (FW1)
- Drainage Ditches (FW4)
- Hedgerows (WL1)/Treelines (WL2)
- Rivers

N

Drawing Title

Habitats Recorded in the North of the Proposed Windfarm overlain with Proposd Project Infrastructure

Project Title

Maughanaclea Renewable Energy Development

Drawn By	Checked By
NL	RW
Project No. 240225	Drawing No. Figure 6-8
Scale 1:12,000- A3	Date 10.03.2026

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6.3.2.1 Habitats Recorded Within the Proposed Wind Farm site

6.3.2.1.1 *Conifer Plantation (WD4)/ Recently Felled Woodland (WS5)*

Conifer Plantations (WD4) were recorded in the north and south of the Proposed Wind Farm site **(Plate 6-3). Turbine 7, Turbine 8, Turbine 9, Turbine 10 and Turbine 11 and** associated infrastructure (hardstands, access roads) are located within the larger conifer plantation in the south of the Proposed Wind Farm site. Further, two Borrow Pits and Temporary Construction Compounds, 110kV Substation, and Met Mast are proposed within the southern Conifer Plantation. **Turbine 1 and Turbine 2** and associated infrastructure (hardstands, access roads) are located within the conifer plantation in the northeast of the Proposed Wind Farm site.

These conifer plantations are dominated by dense, mature Sikta spruce (*Picea sitchensis*). Other species recorded include ling heather (*Calluna vulgaris*), purple moor grass (*Molinia caerulea),* bilberry (*Vaccinium myrtillus*), male fern (*Dryopteris filix-mas*), and hard fern (*Blechnum spicant*). Common bryophyte species recorded within the Conifer Plantations include *Polytrichum commune, Pleurozium schreberi, Hypnum jutlandicum,* and *Thuidium tamariscinum.* Both Conifer Plantations are located on steep, sloping ground on peat soils. Ground conditions varied, with drier grounds covered in needles recorded on higher grounds (upper slopes), and wet ground dominated by carpets of bryophytes and sphagnum recorded on lower grounds (base of slopes).

A large area of recently planted **Conifer Plantation (WD4)** was recorded in the northeast of the Proposed Wind Farm site. Species recorded in this area include Sitka spruce saplings, common bent grass (*Agrostis capillaris*), sweet vernal (*Anthoxanthum odoratum*), ling heather, tormentil, Yorkshire fog (*Holcus lanatus*), purple moor-grass, soft rush, Glaucous sedge (*Carex flacca*), grey willow (*Salix cinerea*), alder (*Alnus glutinosa*), gorse, and *Polytrichum commune*. (**Plate 6-4**). This recently planted **Conifer Plantation (WD4)** is located on steeply sloping ground, on peat soils and were dry underfoot. Turbine 6 and associated infrastructure (hardstand and access road) and the Proposed Access Road linking T1 and T2 to T3 and T5 are located in the north of the Proposed Wind Farm within this area. Smaller areas of recently planted **Conifer Plantation (WD4)** were recorded in the centre, and southwest of the Proposed Wind Farm site.

Large areas of **Recently Felled Conifer Woodland (WS5)** were recorded in the south of the Proposed Wind Farm. Species recorded include Sitka spruce saplings, tormentil (*Potentilla erecta),* soft rush (*Juncus effusus*), jointed rush (*Juncus articulatus)*, purple moor grass, ling heather, fox glove (*Digitalis purpurea*), gorse (*Ulex europaeus*), bramble (*Rubus fruticosus agg.)* and *Polytrichum commune.* (**Plate 6-5).** One of the Proposed Borrow Pits is partially located within an area of recently felled conifer woodland.

*Plate 6-3 Mature **Conifer Plantation (WD4)** recorded in the north of the Proposed Wind Farm, where T1 and T2 are located.*

*Plate 6-4 Recently planted **Conifer Plantation (WD4)** where the access road linking T1 and T2, to T3 and T5 is located in the north of the Proposed Wind Farm site.*

Plate 6-5 ***Recently Felled Conifer plantation (WS5)*** *recorded in the south of the Proposed Wind Farm site.*

6.3.2.1.2 Improved Agricultural Grassland (GA1)

Areas of highly modified/ reclaimed grassland classified as **Improved Agricultural Grassland (GA1)** were recorded throughout the Proposed Wind Farm. These grasslands were intensively managed via grazing by sheep/ cattle or mowing producing a short uniform sward, with little species diversity and limited biodiversity value. These grasslands were dominated by perennial rye grass (*Lolium perenne*). Other species recorded include sweet vernal, common bent, Yorkshire fog, white clover (*Trifolium repens*), creeping buttercup (*Ranunculus repens*), Mouse ear chickweed (*Cerastium fontanum*), cocksfoot (*Dactylis glomerata*), jointed rush, and dandelion (*Taraxacum officinale agg.).*

Turbine 12 and associated infrastructure (hard stands, access roads) are located within areas of Improved Agricultural Grassland, in the southwest of the Proposed Wind Farm site **(Plate 6-6).** This area corresponds to the following IVC habitat- **GL2C**- *Holcus lanatus – Lolium perenne* grassland (Yorkshire-fog – Perennial Rye-grass grassland) (50.1% assigned). **Turbine 13** and hard stand are located to the northwestern parcel of the Proposed Wind Farm, predominantly on an area of reclaimed agricultural grassland, classified as Improved Agricultural Grassland (GA1) (**Plate 6-7**). This area corresponds to the following IVC habitat- **GL4A-** *Agrostis capillaris – Trifolium repens* grassland (Common Bent – White Clover grassland) (92.3% assigned).

Plate 6-6 ***Improved Agricultural Grassland (GA1)*** *where Turbine 12 and associated infrastructure are proposed in the southwest of the Proposed Wind Farm site.*

Plate 6-7 ***Improved Agricultural Grassland (GA1)*** *in the vicinity of T13 and hardstand.*

6.3.2.1.3 Wet Grassland (GS4)

Areas of **Wet Grassland (GS4)** were recorded throughout the Proposed Wind Farm. These grasslands were intensively managed via grazing by sheep/ cattle or mowing, producing a uniform sward, with little species diversity and limited biodiversity value. These areas were dominated by soft rush. Other species recorded include Ragwort (*Jacobaea vulgaris*), Yorkshire fog, white clover, meadow buttercup (*Ranunculus acris),* sweet vernal grass, nettle (*Urtica dioica*), false oat grass (*Arrhenatherum elatius*), jointed rush, tormentil, and gorse.

The **Proposed Access Road linking T11 to T12 and T13** is located on an area of **Wet Grassland (GS4)** (**Plate 6-8**) in the south of the Proposed Wind Farm site. Further, new roads are proposed through **Wet Grassland (GS4)** to the centre of the Proposed Wind Farm. These areas correspond to the following IVC habitat- **GL2D-** *Juncus effusus – Rumex acetosa* grassland (Soft Rush – Common Sorrel grassland) (53.1% assigned to 63.3% assigned).

*Plate 6-8 Access Road linking T11 to T12 and T13 located on an area of **Wet Grassland (GS4)** in the south of the Proposed Wind Farm site.*

6.3.2.1.4 Dry Humid Acid Grassland (GS3)/ Wet Grassland (GS4)

Areas of mosaic degraded **Dry Humid Acid Grassland (GS3)/ Wet Grassland (GS4**) were recorded in the north of the Proposed Wind Farm site. Species recorded in these areas include common bent grass, Yorkshire fog, soft rush, sweet vernal grass, heath bedstraw (*Galium saxatile*), tormentil, *Rhytidiadelphus loreus* and *Pleurozium schreberi.* These areas were intensively managed by on-going sheep grazing, producing a short uniform sward, with little species diversity and limited biodiversity value.

Turbine 5, and **Turbine 3** and associated infrastructure (hardstands, access roads), the proposed access road from T4, and the northern temporary construction compound are located on a mosaic of degraded **Dry Humid Acid Grassland (GS3)/ Wet Grassland (GS4) (Plates 6-9 and 6-10).** Turbine 5 corresponds to the following IVC habitat- **GL2D-** *Juncus effusus – Rumex acetosa* grassland (Soft Rush – Common Sorrel grassland) (84.9% assigned, 19.8% transitional). Turbine 3 corresponds to the following IVC habitats **GL4A-** *Agrostis capillaris – Trifolium repens* grassland (Common Bent – White Clover grassland) (82.2% Assigned)/ **GL2D-** *Juncus effusus – Rumex acetosa* grassland (Soft Rush – Common Sorrel grassland) (69.2% Assigned).

Dry Humid Acid Grassland (GS3) has links the Annex I habitat '*species-rich Nardus grasslands on siliceous substrates in mountain areas'*. However, as stated in Fossitt (2000) '*high species diversity is not characteristic but species-poor stands that appear to be the product of overgrazing are excluded'.* As such, due to the degraded nature of this mosaic habitat Dry Humid Acid Grassland/ Wet Grassland (GS3/GS4) as a result of intensive sheep grazing, these areas do not conform to the Annex I habitat.

*Plate 6-9 Mosaic of degraded **Dry Humid Acid Grassland (GS3)/ Wet Grassland (GS4**) where T5 and associated infrastructure is proposed in the north of the Proposed Wind Farm site.*

*Plate 6-10 Mosaic of degraded **Dry Humid Acid Grassland (GS3)/ Wet Grassland (GS4**) where T53 and associated infrastructure is proposed in the north of the Proposed Wind Farm site.*

6.3.2.1.5 Dry Meadows and Grassy Verges (GS2)

Dry Meadows and Grassy Verges (GS2) were recorded throughout the Proposed Wind Farm, along existing access road/ public roads and forestry tracks (**Plate 6-11).** Species recorded include Bramble, soft rush, Birds foot trefoil (*Lotus corniculatus*), sweet vernal, nettle, perennial rye grass, common bent, ragwort (*Jacobaea vulgaris*), selfheal (*Prunella vulgaris),* white clover, Yorkshire fog, annual meadow grass (*Poa annua*), and gorse.

Plate 6-11 ***Dry Meadows and Grassy Verges (GS2) recorded*** *along an existing farm access road in the south of the Proposed Wind Farm site.*

6.3.2.1.6 Wet Heath (HH3)

Wet Health (HH3) was recorded throughout the Proposed Wind Farm, on gently sloping peat soils. This habitat type has links to the Annex I habitat '*Northern Atlantic Wet Heaths with Erica tetralix* (4010)'.

Turbine 4 and **Turbine 14**, and associated infrastructure (hardstand and access roads) are located on areas of degraded **Wet Heath (HH3)** not mapped under Article 17. **Turbine 4** and associated infrastructure are located on degraded wet heath, in the north of the Proposed Wind Farm site (**Plate 6-12).** This area corresponds to the following IVC habitats- **HE4D**- *Molinia caerulea – Potentilla erecta – Erica tetralix heath* (Purple Moor-grass – Tormentil – Cross-leaved Heath heath) (98.7% assigned)/ **HE4E**-*Molinia caerulea – Calluna vulgaris – Erica tetralix* heath (Purple Moor-grass – Heather – Cross-leaved Heath heath) (94% assigned). Turbine 14 and associated infrastructure are located on degraded wet heath in the southwest of the Proposed Wind Farm site (**Plate 6-13)** This area corresponds to the following IVC habitats- **HE4D**- *Molinia caerulea – Potentilla erecta – Erica tetralix heath* (Purple Moor-grass – Tormentil – Cross-leaved Heath heath) (99.5% assigned)/ **HE4E**-*Molinia caerulea – Calluna vulgaris – Erica tetralix* heath (Purple Moor-grass – Heather – Cross-leaved Heath heath) (86.2% assigned).

Further, the Proposed Temporary Construction Compound in the north of the Proposed Wind Farm site is located partially on an area of degraded **Wet Heath (HH3)** and partially on a mosaic of **Dry Humid Acid Grassland (GS3)/ Wet Grassland (GS4).** This area corresponds to the following IVC

habitat- **HE4E-** *Molinia caerulea – Calluna vulgaris – Erica tetralix* heath (Purple Moor-grass – Heather – Cross-leaved Heath heath) (41.3% transitional)

Extensive on-going sheep grazing was evident in the vicinity of T4 and T14, and northern temporary construction compound, and as a result the wet heath habitat in these areas was degraded, and uniform in appearance, with little species diversity. These areas were dominated by dense purple moor grass, with a low cover of dwarf shrubs and bryophytes**.** Cross leaved heath (*Erica tetralix*) and tormentil (*potentilla erecta*) were recorded. The cover of dwarf shrubs was well below the 25% threshold defined for this habitat by Fossitt (2000). Perrin et al. (2014) states that "*dwarf shrub cover as dwarf shrubs may be scarce or absent in degraded examples of wet heath characterised by Trichophorum germanicum or Molinia caerulea".* Further, the following negative indicator species- Yorkshire fog and common bent grass were recorded in these areas of wet heath (Perrin et al 2014*).* As such, the wet heath habitat in these areas is degraded as a result of the intensive sheep grazing, resulting in a low cover of dwarf shrubs, and poor species diversity, with both areas being dominated by purple moor grass.

*Plate 6-12 Degraded **Wet Heath (HH3)** recorded in the north of the Proposed Wind Farm site where T4 and associated infrastructure is proposed.*

*Plate 6-13 Degraded **Wet Heath (HH3)** recorded in the south of the Proposed Wind Farm site where T14 and associated infrastructure is proposed.*

6.3.2.1.7 Upland Blanket Bog (PB2)

Upland Blanket Bog (PB2) was recorded to the northeast and south of the Proposed Wind Farm, on level or gentle sloping ground. The altitudinal division between upland blanket bog (PB2) and lowland blanket bog (PB3) in Fossitt (2000) is the 150m contour, but this is only an approximate guide. Perrin et al (2014) states ', *areas of bogs should be classified primarily on the basis of the vegetation rather than altitude'.* As such, due to the presence and cover of heathers (*Calluna vulgaris, Erica tetralix*), and the absence of Black bog rush (*Schoenus nigricans*), these areas are classified as **Upland Blanket Bog (PB2)** as per Fossitt 2000. Upland Blanket Bog (PB2) often forms intimate mosaics with Wet Heath (HH3). These areas correspond to the Annex I habitat *'Blanket Bogs (if active bog) (7130)*'. A large mosaic habitat of Upland **Blanket Bog (PB2)/ Wet Heath (HH3)** was recorded in the northeast of the Proposed Wind Farm site, north of T1 and T2. No Wind Farm infrastructure is proposed in this area.

The floating **Turbine 14 Access Road** runs through an area of **Upland Blanket Bog (PB2)** for approximately 0.2ha. This access road also runs through Wet Heath (HH3), and Dense Bracken (HD1) habitats. There is varying topography in this area, with higher grounds comprised of Wet Heath (HH3)/ Dense Bracken (HD1)(**Plate 6-14**), transitioning into **Upland Blanket Bog (PB2)** on flatter grounds (**Plate 6-15).** Evidence of previous turbary activity **(Plate 6-16**), drainage, and grazing was recorded throughout these habitats, which has resulted in the degradation of this habitat in places. Species recorded include Deer grass (*Trichophorum germanicum*), Bog asphodel (*Narthecium ossifragum*), Carnation sedge (*Carex panicea*), Purple moor grass (*Molinia caerulea*), Cross leaved heath (*Erica tetralix*), Tormentil (*Potentilla erecta*), Common cotton grass (*Eriophorum angustifolium*), Ling Heather (*Calluna vulgaris*), Bell heather (*Erica cinerea*), and Billberry (*Vaccinium myrtillus*). Bryophytes recorded include *Drosera rotundifolia, Rhytidiadelphus loreus, Sphagnum cuspidatum, , and Sphagnum papillosum.*

This area corresponds to the following IVC habitats- **BG2F-** *Trichophorum cespitosum/germanicum – Eriophorum angustifolium* peatland (Deergrass – Common Cottongrass peatland) (48.5% transitional)/ **HE4E-** *Molinia caerulea – Calluna vulgaris – Erica tetralix* heath (Purple Moor-grass – Heather – Cross-leaved Heath heath) (74% assigned)**/ HE4F-** *Molinia caerulea – Myrica gale* flush (Purple Moor-grass – Bog-myrtle flush) (96.8% assigned).

*Plate 6-14 Overview of transitional/ mosaic habitats of **Upland Blanket Bog (PB2)/ Wet Heath (HH3) and Dense Bracken (HD1**) along the proposed access road from T14.*

*Plate 6-15 **Upland Blanket Bog (PB2)** on lower grounds along the proposed access road from T14.*

Plate 6-16 Evidence of previous turbary activity to the west of the proposed access road through ***Upland Blanket Bog (PB2).***

6.3.2.1.8 Dry Siliceous Heath (HH1)

Dry Siliceous Heath (HH1) was recorded to the northwestern margin of the southern cluster of the Site, on steeply sloping and undulating land. The area was dominated by western gorse (*Ulex gallii*), ling heather, bell heather (*Erica cinerea*), purple moor grass, bracken, glaucous sedge (*Carex flacca*) tormentil, jointed rush, bent grass, and sweet vernal **(Plate 6-17).** This habitat has links to the Annex I habitat '*European dry heaths (4030)'.* No Wind Farm infrastructure is proposed for this area.

Infrastructure associated with T13, including the southern portion of Turbine 13 hardstand and proposed access road are located partially within areas of **fragmented Dry Siliceous Heath (HH1)** in the south of the Proposed Wind Farm site **(Plate 6-18**), which occur between areas of reclaimed, intensively managed improved agricultural grassland (GA1) (**Plate 6-18).** The fragmented areas of dry siliceous heath are dominated by western gorse, bilberry, bracken, ling heather, bell heather, St Patrick's cabbage (*Saxifraga spathularis*), and *Polytrichum commune*, and a large proportion of exposed rock/ boulders. This area corresponds to the following IVC habitat- **HE3A** *Calluna vulgaris – Hylocomium splendens* heath (Heather – Glittering Wood-moss heath) (44.7% transitional). This area of dry heath has been fragmented due to intensive land reclamation in the surrounding area, and intensive grassland management. As a result, the cover of dry siliceous heath to the south of T13 is non-continuous and degraded as a result.

Plate 6-17 ***Dry Siliceous Heath (HH1)*** *recorded to the northwestern margin of the south of the Proposed Wind Farm, on steeply sloping and undulating land. No Wind Farm Infrastructure is proposed for this area of the Site.*

Plate 6-18 Fragmented ***Dry Siliceous Heath (HH1)*** *recorded to the north of Turbine 13 hardstand and access road, occurring in between areas of reclaimed improved agricultural grassland (GA1).*

6.3.2.1.9 *Spoil and Bare Ground (ED2)*

Areas of exposed gravel and stone classified as **Spoil and Bare Ground (ED2)** were recorded throughout the Proposed Wind Farm, often associated with recently felled woodland, unpaved forestry/ farm access tracks, and areas of recently excavated grasslands (**Plates 6-19 & 6-20**).

*Plate 6-19 Exposed gravel/rubble recorded in the south of the Proposed Wind Farm site classified as **Spoil and Bare Ground (ED2).***

*Plate 6-20 Recently excavated grassland in the south of the Proposed Wind Farm site classified as **Spoil and Bare Ground (ED2).***

6.3.2.1.10 Recolonising Bare Ground (ED3)

Areas of **Recolonising Bare Ground (ED3)** were recorded throughout the Proposed Wind Farm, often associated with forestry access roads, recently felled woodland, and mounds of spoil/ gravel. Areas of spoil/ gravel in the south of the Proposed Wind Farm site have become recolonised with ragwort, foxglove, soft rush, white clover, creeping buttercup, dandelion, sweet vernal, Nettle and Tormentil (*Potentilla erecta*). Former forestry access tracks in the north of the Proposed Wind Farm site have become recolonised with common cotton grass, sweet vernal, purple moor grass, tormentil, ling heather, and cross leaved heath. **(Plate 6-21).**

*Plate 6-21 Forestry access road classified as **Recolonising Bare Ground (ED3)** recorded in the north of the Proposed Wind Farm site.*

6.3.2.1.11 Buildings and Artificial Surfaces (BL3)

Existing forestry/farm access tracks, and the local road network within the Proposed Wind Farm and along the Proposed Grid Connection were categorised as **Buildings and Artificial Surfaces (BL3).** (**Plate 6-22**) Any private dwellings and/or agricultural buildings within the Site were also categorised as Buildings and Artificial Surfaces (BL3).

Plate 6-22 Public Road located to the centre of the Proposed Wind Farm classified as ***Buildings and Artificial Surfaces (BL3).***

6.3.2.1.12 Scrub (WS1)

Large areas of **Scrub (WS1)** were recorded throughout the Proposed Wind Farm. These areas were dominated by gorse, bramble, bracken (*Pteridium aquilinum*), grey willow (*Salix cinerea*), and eared willow (*Salix aurita*) (**Plates 6-23).** The access road linking T12 to T14 in the south of the Proposed Wind Farm site and proposed new roads to the centre of the Proposed Wind Farm runs through areas of **Scrub (WS1).**

Plate 6-23 Large area of ***Scrub (WS1)*** *recorded to the centre of the Proposed Wind Farm.*

6.3.2.1.13 Dense Bracken (HD1)

Areas dominated by dense, continuous bracken classified as **Dense Bracken (HD1)** were recorded throughout the Proposed Wind Farm. Areas of dense bracken were often recorded on mounds/ hills, in association with areas of Wet Heath (HH3)/ Dry Heath (HH1). Dense bracken was recorded along the Proposed Access Road from T3 and T14 (**Plates 6-24).**

Plate 6-24 ***Dense Bracken (HD1)*** *recorded along the access road from T14 in the south of the Proposed Wind Farm site.*

6.3.2.1.14 Hedgerow (WL1)

Linear **Hedgerow (WL1)** features were recorded throughout the Proposed Wind Farm, along road margins and forming agricultural field boundaries. Species recorded within the hedgerows include hawthorn (*Crataegus monogyna),* gorse, fuchsia (*Fuchsia magellanica*), bracken, bramble, ivy (*Hedera hibernica*) (**Plate 6-25**).

*Plate 6-25 Linear **Hedgerows (WL1)** forming agricultural field boundaries/ road margins recorded to the centre of the Proposed Wind Farm.*

6.3.2.1.15 Drainage Ditch (FW4)

Drainage Ditches (FW4) were recorded throughout the Proposed Wind Farm, mainly associated with areas of coniferous forestry, grasslands, and along the margins of forestry/ farm access roads/ public roads. The drainage ditches were predominantly man-made, and as such were linear in nature, generally 1-1.5m wide. Flow types varied, with dry drains with no flow or stagnant water, and drains with fast flowing water recorded throughout the Proposed Wind Farm. Further, some drains were heavily vegetated, while others had little to no vegetation recorded. Common species recorded along the drain margins include soft rush, Yorkshire fog, purple moor grass, sweet vernal, tormentil, ling heather and *Polytrichum commune.* Emerging aquatic vegetation recorded includes lesser spearwort (*Ranunculus flammula*), pondweed (*Potamogeton polygonifolius*) and water forget me not (*Myosotis scorpioides*). (**Plates 6-26 & 6-27**).

*Plate 6-26 Heavily vegetated **Drainage Ditch (FW4)** recorded within an area of Wet Grassland (GS4) in the south of the Proposed Wind Farm site.*

*Plate 6-27 **Drainage Ditch (FW4)** with fast flowing water recorded within the southern Conifer Plantation (WD4).*

6.3.2.1.16 Riparian Treeline/ Woodland (WN5)

Riparian treelines and vegetation classified as **Riparian Woodland (WN5)** were recorded along the banks of the Owengar (Cork) River (and tributaries). The riparian vegetation was dominated by grey willow, goat willow, basket willow (*Salix viminalis*), gorse, bracken, meadowsweet (*Filipendula ulmaria*), hawthorn and nettle (**Plate 6-28).** No Wind Farm infrastructure is Proposed for this area of the Site.

*Plate 6-28 Riparian vegetation classified as **Riparian Woodland (WN5)** recorded along the banks of the Owengar (Cork) River in the north of the Proposed Wind Farm site. No Wind Farm is proposed for this area of the Site.*

6.3.2.1.17 Eroding Upland River (FW1)/ Depositing Lowland River (FW2)

Various EPA mapped river waterbodies flow through the Site, namely the Owngar (Cork) River (**Plate 6-29**), Mealagh River (**Plate 6-30**) and Bandon River and associated tributaries. These EPA mapped watercourses were classified as **Eroding Upland Rivers (FW1)** and **Depositing Lowland Rivers (FW2).**

To facilitate the construction of the Proposed Wind Farm roads, there are 5 no. new watercourse crossings that will be required;

Two new watercourse crossings in the northern cluster, one crossing the Owngar River to facilitate the proposed site entrance and delivery of turbine components to the Proposed Wind Farm's northern cluster, and a second new watercourse crossing along the access road to T4.

Three new watercourse crossings in the southern cluster: 1 no. on the new road southwest of the proposed 110kV onsite substation, 1 no. on the access road to T13, and 1 no. on access road between T11 and T12 all classified as classified as **Eroding Upland River (FW1).**

The above watercourse crossings will all be achieved via new clear span crossings.

There are also 3 no. existing watercourse crossings that require upgrading as part of the Proposed Wind Farm: all 3 no. are located on the existing forestry road southwest of the proposed 110kv onsite substation.

Plate 6-29 Section of the Owengar (Cork) River to the centre of the Wind Farm where a new road is proposed, classified as an ***Eroding upland River (FW1).***

Plate 6-30 Access Road linking T11 to T12 proposed across the Mealagh River in the south of the Proposed Wind Farm site, classified as ***Eroding/ Upland River (FW1).***

6.3.2.1.18 Dystrophic Lakes (FL1)

Two lakes classified as **Dystrophic Lakes (FL1)** were recorded within the Proposed Wind Farm: one in the north of the Proposed Wind Farm site, north of T2 (**Plate 6-31)** and the second in the south of the Proposed Wind Farm site, south of T13 (**Plate 6-32**). These lake habitats have links to the Annex I habitat '*Natural Dystrophic lakes and ponds (3160)*'. The margins of these lakes were characterised by peaty substrate, with the water humid in colour due to high levels of peat. No Wind Farm infrastructure is proposed within 200m of these lake habitats. Yellow water lily (*Nuphar lutea*) was recorded growing on both lakes. The following species were recorded along the margins of the lakes, including cuckoo flower (*Cardamine pratensis*), purple moor grass, common cottongrass, soft rush, bracken, and common sedge (*Carex nigra*).

*Plate 6-31 **Dystrophic Lake (FL1)** recorded to the north of T2, in the north of the Proposed Wind Farm site.*

*Plate 6-32 **Dystrophic Lake (FL1)** recorded to the southwest of T13, in the south of the Proposed Wind Farm site.*

6.3.2.1.19 Immature Woodland (WS2)

An area of **immature woodland (WS2)** was recorded to the east of the **proposed 110kV onsite substation**. A mix of native woodland species was planted in an area of recently felled woodland. Deer proof fencing was erected around this area. The fencing with the replanted area is shown in **Plate 6-33**.

Plate 6-33 Immature Woodland (WS2) recorded to the east of the proposed 110kV onsite substation.

6.3.2.2 Habitats Recorded Along the Proposed Grid Connection

It is proposed to connect the proposed 110 kV onsite substation within the Proposed Wind Farm site to the existing Dunmanway 110kV substation near Dunmanway, Co. Cork via c.20.5km of 110 kV underground electrical cabling (Proposed Grid Connection). The Proposed Grid Connection is located primarily within the public road corridor, with a short section of the route (approximately 940m) located within and existing forestry track.

The Proposed Grid Connection underground electrical cabling route will originate at the proposed 110kV onsite substation, and from there will run southeast for approximately 130m through an existing conifer plantation within the Proposed Wind Farm site. The Proposed Grid Connection will then travel east for approximately 820m through an existing access road within the Proposed Wind Farm site, towards the R585. The Proposed Grid Connection then exists the Proposed Wind Farm's southern turbine cluster site entrance to the east, and travels along the R585 for approximately 7km. The Proposed Grid Connection then turns right and follows the L4909 and L4609 for approximately 3km in a generally southeast direction. The Proposed Grid Connection then turns left and is routed along the L4615 in an easterly direction for approximately 5.7km. The underground cabling route then turns right onto the R587 and runs south towards Dunmanway for approximately 3km, before turning left and travelling east on the R586. After 825m the Proposed Grid Connection exits the R586 to the south and enters the existing Dunmanway 110kV substation in the townland of Ballyhalwick. The Proposed Grid Connection will be installed predominantly within the existing road network, classified as **Buildings and Artificial Surfaces (BL3) (Plate 6-34).** The following marginal habitats were recorded adjacent to the existing road network along the extent of the Proposed Grid Connection, outside of the works footprint.

Hedgerow (WL1) (Plate 6-35) and **Treeline (WL2) (Plate 6-36)** were recorded along the extent of the Proposed Grid Connection. Species recorded in hedgerows include hazel (*Corylus avellana*), hawthorn, blackthorn (*Prunus Spinosa*), rowan (*Sorbus aucuparia*), bramble, ivy, bracken, downy birch (*Betula pubescens*), goat willow, and beech (*Fagus sylvatica*). Species recorded in treelines include sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*), silver birch (*Betula pendula*), sessile oak (*Quercus petraea*), holly, grey willow, and horse chestnut (*Aesculus hippocastanum*).

Dry meadows and grassy verges (GS2) were recorded along the extent of the Proposed Grid Connection, often in association with the understorey of hedgerows (WL1) and treelines (WL2). Species recorded include sweet vernal, Yorkshire fog, daisy, dandelion, ribwort plantain (*Plantago lanceolata*), curly dock (*Rumex crispus ssp. Crispus*), false oat grass (*Arrhenatherum elatius*), cocksfoot (*Dactylis glomerata*), perennial rye grass, and yarrow (*Achillea millefolium*).

Scrub (WS1) was recorded along the extent of the Proposed Grid Connection. Species recorded include gorse, bramble, grey willow, goat willow, bracken, ribwort plantain, and fuchsia.

The Proposed Grid Connection will be located within the footprint of the public road. Water crossings include the Owngar (Cork) River and tributaries and the Bandon River and tributaries classified as Eroding/ Upland Rivers (FW1) and Depositing/ Lowland Rivers (FW2). The Proposed Grid Connection will traverse 11 no. watercourses.

One no. existing watercourse crossing along the R585 will be traversed to cater for the internal 33kV IPP cabling within the Proposed Wind Farm. This crossing comprises an existing stone arch bridge. The approximate coordinates for this crossing are E 510541, N 556626 (ITM), with the location of the watercourse crossing and a drawing of the crossing methodology at this location also shown on the detailed layout drawings in Appendix 4-1.

Instream works are not required at any watercourse crossing along the proposed IPP cabling route or Proposed Grid Connection.

For full details on the aquatic habitats found beneath watercourse crossings refer to **Section 6.2** in the Aquatic Baseline Report available in **Appendix 6-3.**

*Plate 6-34 Existing Road network where the Proposed Grid Connection will be installed classified as **Buildings & Artificial Surfaces (BL3)**.*

*Plate 6-35 Typical **Hedgerow (WL1)** recorded along the Proposed Grid Connection adjacent to the road network.*

*Plate 6-36 Typical **Treeline (WL2)** habitat recorded along the Proposed Grid Connection, adjacent to the road network.*

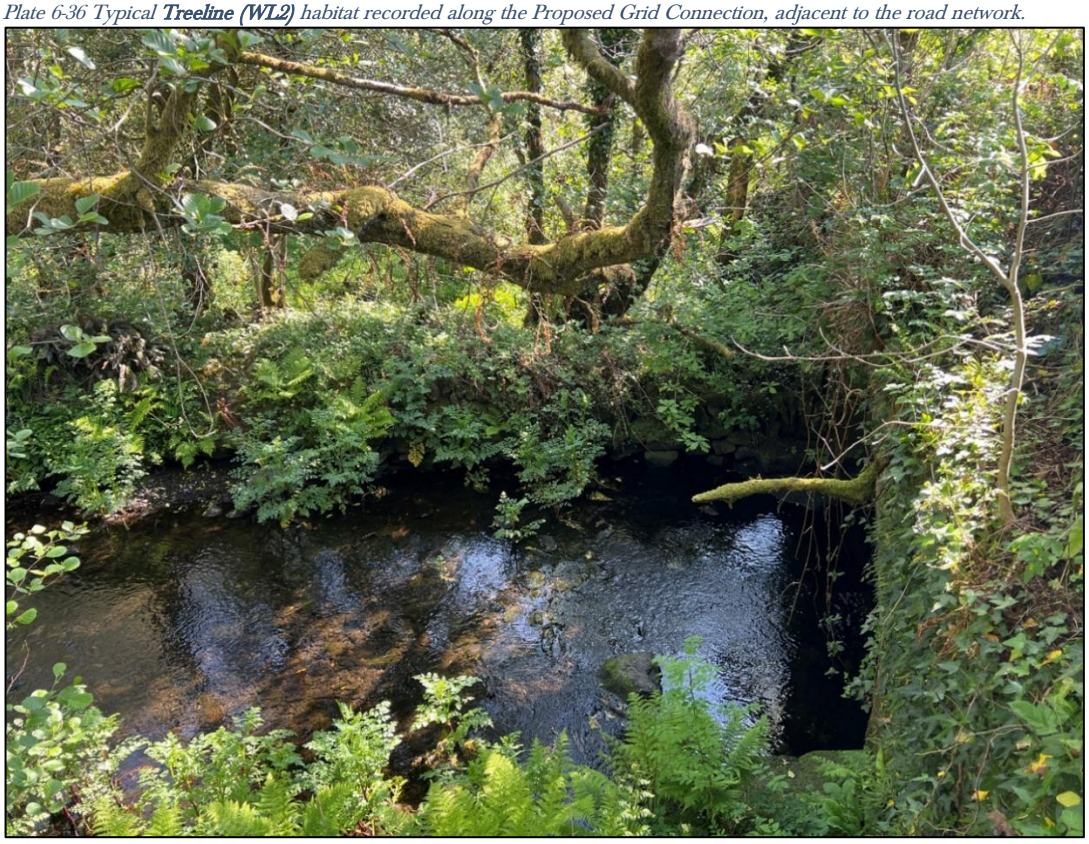

*Plate 6-37 Typical section of an **Eroding/ Upland River (FW1),** the Shanacrane East, along the Proposed Grid Connection.*

Plate 6-38 The southern section of the Proposed Grid Connection crosses a tributary of the Bandon River (Demesne), classified as ***a Depositing/Lowland River (FW2).***

6.3.2.3 Habitats Along the Turbine Delivery Route

It is proposed that large wind turbine components will be delivered to the Proposed Wind Farm site from Ringaskiddy Port. The proposed Turbine Delivery Route (TDR) leaves Ringaskiddy on Ringaskiddy Rd (N28), following the N28 right onto Carr's Hill, merging onto the Cork South Ring Rd (N40), continuing on the N22 until turning southwest onto the R585 Regional Road. The TDR continues on the R585 before reaching the Site in the townland of Maughanaclea where it will turn left up the existing commercial forestry track to reach the southern turbine cluster or turn right up the new proposed site entrance to reach the northern turbine cluster.

Works such as road widening are sometimes required along proposed TDRs to accommodate the large turbine components and associated vehicles seeking to access wind farm sites. The proposed TDR for the Proposed Project has been the subject of a route assessment to determine if any works are required along its length. The proposed TDR will require no accommodation works that will require removal of habitats.

Limited areas of vegetation along the road corridor, along the roadside edges of treelines (WL2) and hedgerows (WL1), may need to be trimmed to accommodate irregular loads, however this comprises temporary reduction in cover and vegetation will not be felled/removed in these habitats.

6.3.2.4 Protected Habitats/Flora

Dry Siliceous Heath (HH1) was recorded to the northwestern margin of the southern turbine cluster of the Site, on steeply sloping and undulating land. This habitat has links to the Annex I habitat '*European dry heaths (4030)'.* No Wind Farm infrastructure is proposed for this area, and as such this Annex 1 habitat will not be impacted by the Proposed Project

Infrastructure associated with **T13,** including the southern portion of Turbine 13 hardstand and proposed access road are located partially within areas of **fragmented Dry Siliceous Heath (HH1)** in the south of the Proposed Wind Farm site, which occur between areas of reclaimed, intensively managed improved agricultural grassland (GA1). This area of dry heath has been fragmented due to intensive land reclamation in the surrounding area, and intensive grassland management. As a result, the cover of dry siliceous heath to the south of T13 is non-continuous and degraded as a result. Overall, there will be a loss of approximately 0.1ha of fragmented, degraded dry heath in the vicinity of T13.

Turbine 4 and Turbine 14, and associated infrastructure (hardstand and access roads) and northern temporary construction compound are located on areas of degraded **Wet Heath (HH3)** not mapped under Article 17. These areas of wet heath have links to the Annex I habitat '*Northern Atlantic Wet Heath with Erica tetralix (4010).* Extensive on-going sheep grazing was evident in these areas and as a result the wet heath habitat in these areas was degraded, and uniform in appearance, with little species diversity. These areas were dominated by dense purple moor grass, with a low cover of dwarf shrubs and bryophytes. The cover of dwarf shrubs was well below the 25% threshold defined for this habitat by Fossitt (2000). Perrin et al. (2014) states that "*dwarf shrub cover as dwarf shrubs may be scarce or absent in degraded examples of wet heath characterised by Trichophorum germanicum or Molinia caerulea*". As such, the wet heath habitat in these areas is degraded as a result of the intensive sheep grazing, resulting in a low cover of dwarf shrubs, and poor species diversity, with both areas being dominated by purple moor grass.

The **Turbine 14 Access Road** runs through an area of **Upland Blanket Bog (PB2)** for approximately 0.2ha. Evidence of previous turbary activity, and grazing was recorded throughout these habitats, which has resulted in the degradation of this habitat in places.

No botanical species listed under the Flora (protection) Order, 2022, or listed in the Irish Red Data Books were recorded on the Site.

In summary, as described in the preceding sections, the following Annex I habitats were recorded within the Proposed Wind Farm in degraded form. All high-quality, intact heath and bog habitats within the Proposed Wind Farm have been deliberately avoided in the design of the Proposed Project:

- Dry Siliceous Heath (HH1)
- Wet Heath (HH3)
- Upland Blanket Bog (PB2)

6.3.2.5 Listed Third-Schedule Invasive species

6.3.2.5.1 *Proposed Wind Farm*

Immature, individual stands of Rhododendron (*Rhododendron ponticum*) a Third Schedule listed species under Regulations 49 & 50 in the European Communities (Birds and Natural Habitats) Regulations 2011 were recorded in the north and south of the Proposed Wind Farm, within Conifer plantation and open peatland habitat **(Plate 6-42),** adjacent to the works footprint as shown on **Figure 6-9 below.**

Plate 6-40 Immature, individual Rhododendron plant recorded to the north of the Wind Farm.

6.3.2.5.2 *Along the Turbine Delivery Route*

During field surveys undertaken, Japanese Knotweed was not recorded within the Site. It was recorded at one location along the bank of an unmapped watercourse (51.79429269270019, -9.054759697626793), shown in Plate 6-43. This area is adjacent to the existing road along the TDR but outside of any proposed works areas.

Plate 6-41 Japanese knotweed recorded adjacent to a watercourse along the TDR

Map Legend

- EIAR Site Boundary
- Proposed Turbine Locations
- Proposed Met Mast Location
- Temporary Construction Compounds
- Proposed Security Compounds Cabins
- Proposed 110kV Substation
- Proposed New Roads
- Proposed Hardstands
- Existing Roads to be Upgraded
- Proposed Borrow Pits
- Proposed Peat and Spoil Storage Areas
- Proposed Internal WF 33kV Cabling
- Proposed Grid Connection 110kV Cabling
- Rhododendron ponticum

Drawing Title
Third Schedule Invasive Species Recorded Within the Site

Project Title
Maughanaclea Renewable Energy Development

Drawn By	Checked By
NL	RW
Project No.	Drawing No.
240225	Figure 6-9
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6.3.3 Faunal Survey Results

Faunal walkover surveys were designed to detect the presence, or likely presence, of a range of protected species. Potential suitable habitats were investigated for signs of animal presence. The following subsections provide a breakdown of the species recorded within the Site during the site visits and assessments.

6.3.3.1 Badger

Areas identified as providing potential habitat for badgers were subject to specialist targeted survey, including **Conifer Plantations (WD4)/ Improved Agricultural Grassland (GA1)** in the north and south turbine clusters of the Proposed Wind Farm on the dates outlined in **Table 6-2** above. No signs of badgers (setts, latrines, prints) were recorded within the Site.

However, the desk study (**Section 6.3.1.5 & 6.3.1.6)** revealed that the Site is located within the known geographical range of badger. As such, taking a precautionary approach, it is assumed that the species may occur, at least on occasion, within the Site.

6.3.3.2 Otter

Watercourses within the Proposed Wind Farm site and along the Proposed Grid Connection survey locations were surveyed for signs of otter. No otter holts or couches were observed in the vicinity of the Proposed Wind Farm site or Proposed Grid Connection survey locations.

Evidence of otter activity in the form of spraint was recorded along the Gortnacowly River (a tributary of the Mealagh River), within the southern section of the Proposed Wind Farm (survey location WF19, as shown in Appendix 6-3). No otter signs were recorded along the Proposed Grid Connection survey locations.

As summarised in the Aquatic Baseline Report:

'No otter holts or couches were identified at the survey sites in the vicinity of the Proposed Wind Farm. Otter signs in the form of spraints were found at survey site WF 19, indicating that otter actively utilise the Gortnacowly (a tributary of the Mealagh River). Given the high fisheries potential and good connectivity of other sites within the vicinity of the Proposed Wind Farm, it is very likely that otter actively utilise these watercourses for commuting and foraging'

'No otter holts or couches were identified at the survey sites along the Proposed Grid Connection. No otter signs such as spraints or prints were identified at the survey sites at the time of survey. Given the high fisheries potential and good connectivity of sites such as GC 4 and GC 10, it is very likely that otter actively utilise these watercourses for commuting and foraging'.

6.3.3.3 Marsh Fritillary

No significant areas of Devil's-Bit Scabious (*Succisa pratensis*), the food plant for this species, were recorded within the Site. The Site did not provide significant supporting habitat for Marsh Fritillary, and no evidence of Marsh Fritillary was recorded within the Site.

6.3.3.4 Kerry Slug

Hand searches confirmed the presence of Kerry slug at one location within the Proposed Wind Farm, within an area of **recently felled woodland (WS5)** within the south of Proposed Wind Farm site. The

species was recorded to the base of a conifer stump. The species has potential to move throughout suitable habitats within the Site.

6.3.3.5 Reptiles and Amphibians

Frog spawn was recorded within drainage ditches and puddles adjacent to the southern conifer plantation, and along access roads (**Plate 6-44**). Live adult common frogs (*Rana temporaria*) were recorded within the Proposed Wind Farm, within wetland areas, wet grassland and drainage ditches. Smooth newts (*Lissotriton vulgaris*) were not recorded within the Site or aquatic survey sites but have potential to occur in the wider area. Although no Common lizard (*Zootoca vivipara*) was found, suitable habitat for this species exists within the Site.

Plate 6-44 Frog Spawn recorded within a drainage ditch in the south of the Proposed Wind Farm site.

6.3.3.6 Bats

Bat surveys undertaken in 2024, in accordance with NatureScot guidance, form the core dataset for the assessment of effects on bats. Bat surveys included roost surveys, manual transect surveys and ground-level static surveys. Full details of results are provided in the Bat Report in **Appendix 6-2** and are summarised in the sections below.

6.3.3.6.1 *Roost Surveys*

Trees

Trees within the Proposed Wind Farm site primarily consist of Sitka spruce within conifer plantations. The majority of trees within the Site will be retained as part of the Proposed Project; however, there will be some requirement to remove trees to facilitate the required bat buffers and infrastructure footprint. The Proposed Project will also require the removal of a small section of hedgerow (23m) and scrub (0.6 ha) for an access road. Conifer plantations, hedgerows and scrub do not provide potential roosting habitat of significance for bats and as such were assessed as having no *(None)* roosting potential (Collins, 2023).

No trees with significant suitable Potential Roost Features (PRFs) were identified within the bat felling buffers (refer to **Section 4.3.2** in **Appendix 6-2**) or within the footprint of the Proposed Wind Farm site.

There is no requirement for removal or trimming of trees identified as having bat roost potential associated with the Turbine Delivery Route or Proposed Grid Connection.

6.3.3.6.2 Manual Transects

Manual transects were undertaken in spring, summer and autumn 2024. Bat activity was recorded in all seasons, and a total of 485 bat passes were recorded. In general, common pipistrelle (n=352) was recorded most frequently. Soprano pipistrelle (n=65) and Leisler's bat (n=55) were recorded less frequently. *Myotis spp.* (n=10) and brown long-eared bat (n=3) were observed rarely.

Species composition and activity levels varied across the survey periods. Bat activity was concentrated along forest edges and linear (road/track) habitats. Common pipistrelle was most frequently recorded in spring and autumn, whereas Soprano pipistrelle was most frequent in summer. Brown long-eared bat was recorded only during the spring transect. Leisler's bat was detected during summer and autumn. *Myotis spp.* species activity was low throughout 2024 surveys.

6.3.3.6.3 Ground-level Static Surveys

A summary of the results of ground level surveys conducted at the Site are provided below. The location of all static detectors is provided in **Appendix 6-2** of this EIAR.

In total, 73,383 bat passes were recorded across all deployments. In general, common pipistrelle (n=44,517) occurred most frequently, followed by Leisler's bat (n=11,024), Soprano pipistrelle (n=8,424) and *Myotis* spp. (n=6,527). Instances of brown long-eared bat (n=2,664) and Nathusius' pipistrelle (n=94) were recorded less frequently during the survey period. Lesser horseshoe bat was also recorded with 93 passes detected.

Bat activity was calculated as total bat passes per hour (bpph) to account for any bias in survey effort, resulting from varying night lengths between seasons. Table 6-8 presents these results for each species per season. Spring, summer and autumn activity was dominated by common pipistrelle with contributions from soprano pipistrelle and Leisler's bat. *Myotis* spp. activity was higher is summer and autumn, with lower activity in spring. Brown long-eared bat activity was highest during the autumn period. Instances of Lesser horseshoe bat and Nathusius' pipistrelle were relatively rare throughout the survey periods.

Table 6-8 Static detector surveys 2024:: Relative bat activity across all deployments (total bat passes per hour (bpph), all nights and total survey hours per season)

	Spring	Summer	Autumn
Total Survey Hours	**111.8**	**256**	**270.8**
Common pipistrelle	165.0	39.2	59.2
Leisler's bat	21.8	15.7	16.8
Soprano pipistrelle	15.6	9.3	15.9
Myotis spp.	5.1	12.4	10.4
Brown long-eared bat	0.9	1.8	7.7
Lesser horseshoe bat	0.3	0.1	0.1
Nathusius' pipistrelle	0.1	-	0.3

Assessment of bat activity levels-Adapted site-specific ranges

Low, *Moderate* and *High* activity levels were assigned to median and maximum bat passes per hour (bpph) recorded during spring, summer and autumn at all detectors deployed across the Site. These categories were adapted from Mathews et al. (2016) and adjusted to reflect site-specific activity thresholds.

Leisler's bat generally exhibited *Low* median activity in spring and autumn and *Low to Moderate* levels in summer. *Moderate* activity was recorded at D02 and D06 in spring, at D06 in summer, and at D09 in autumn. *High* median activity occurred only at D08 during summer, where activity reached 5.3 bpph (maximum 17.1 bpph).

Common pipistrelle demonstrated *Low* median activity in summer and autumn and *Low to Moderate* activity in spring. *Moderate* activity levels were recorded at D01, D07 and D09 during spring, at D02 in summer, and at D02 and D09 in autumn. *High* median activity was recorded in spring at D02 (26.3 bpph) and D03 (32.3 bpph), with corresponding maximum values of 85.6 bpph and 124.9 bpph, respectively.

Soprano pipistrelle exhibited *Low* median activity across all seasons, with the highest median values of 2.2 bpph recorded at D02 and D09 during spring. *High* maximum activity levels were recorded at D09 during spring (54.4 bpph) and at D02 during summer (43.9 bpph).

***Myotis* species** exhibited *Low* median activity overall across all seasons. *Moderate* activity levels were recorded at D02 and D08 in summer and at D01 in autumn. No *High* median activity was observed for this group; however, the highest maximum activity (26.4 bpph) was recorded at D02 in summer.

Brown long-eared bat recorded *Low* median activity in spring and summer and *Low to Moderate* activity in autumn. *Moderate* activity was observed at D01, D02 and D09 in autumn. No *High* median values were recorded, although the highest maximum activity (15 bpph) occurred at D01 in autumn.

Nathusius' pipistrelle exhibited *Low* median activity across all detectors and seasons. The highest maximum activity recorded was 4.2 bpph at D011 during autumn.

Lesser horseshoe bat exhibited *Low* median activity across all detectors and seasons. Maximum activity remained low, with the highest values recorded at D02 during spring (0.9 bpph) and summer (0.5 bpph).

Overall, the adapted site-specific activity assessment indicates that bat activity within the Proposed Wind Farm is generally *Low to Moderate* across species and seasons, with notable localised increases primarily associated with detectors D02, D03, D08 and D09. These elevated activity levels were driven predominantly by Common pipistrelle, Leisler's bat and, to a lesser extent, Soprano pipistrelle and *Myotis* species. *High* median activity was recorded only occasionally and in limited locations, suggesting that while certain areas of the Site support concentrated activity, the wider landscape exhibits relatively low baseline bat use. These patterns inform the spatial distribution of sensitivity across the Site and guide the subsequent assessment of potential impacts from the Proposed Project.

6.3.3.7 Fisheries and Aquatic Fauna

Full details of results of aquatic surveys undertaken in 2024 are provided in the Aquatic Baseline Report (**Appendix 6-3**) and are summarised in this section.

'Watercourses surveyed within the vicinity of the Proposed Wind Farm consisted primarily of ***Eroding/Upland Rivers (FW1),*** *with steep, headwater bedrock-dominant morphology at survey sites WF*

1 – WF 4, WF 8 – WF 10, WF 20 and WF 21, while survey sites WF 7 and WF 13 were upland, narrow, laterally confined peat streams within ***Wet Heath (HH3)*** *and* ***Conifer Plantation (WD4).*** *Habitats surrounding the Proposed Wind Farm aquatic survey sites consisted predominantly of* ***Improved agricultural grassland (GA1)****,* ***Wet grassland (GS4)****,* ***Conifer Plantation (WD4)*** *and* ***Wet Heath (HH3).*** *Survey sites WF 5 and WF 6 comprised sections of* ***Depositing/Lowland River (FW2),*** *with slower flow and fine sediment-dominant channel substrate. Survey sites such as WF 11 and WF 15 exhibited some historic evidence of modification, with the placement of rock ramps laterally across the watercourse creating deep areas of slow, impounded flow, more typical of an FW2 section of river, within an otherwise FW1 watercourse. These survey sites also exhibited evidence of enrichment, with filamentous green algae atop channel substrate. WF 18 was the most highly modified survey site, with extensive bank alterations.*

Survey sites WF 1 – WF 4 and WF 9 exhibited limited fisheries potential as a result of their upland gradient, torrential flows and headwater, often bedrock-dominant, channel morphology, which acted as natural barriers to migratory fish species. Survey sites WF 8, WF 10, WF 20 and WF 21 offered localised moderate-good fisheries habitat for juvenile brown trout. However, overall fisheries potential for a range of fish species and age classes was limited by inaccessibility as a result of the headwater location and bedrock cascade-pool-step features within the wider riverine landscape. The upland, narrow and laterally confined nature of the peat stream at WF 7 again limited fisheries potential for all species other than juvenile brown trout, while high degrees of modification at WF 13 and WF 18 likely precluded migratory fish access to these survey sites. The presence of an instream rock ramp spanning the channel at WF 11, in combination with downstream bedrock steps, cascades and falls, may limit connectivity for fish species. Survey sites WF 5, WF 6 and WF 16 provided the highest quality overall fisheries potential, with a range of instream habitat, diverse flow patterns and marginal refugia and shelter which provided fisheries habitat for several fish species.

Q-value scores calculated for the survey sites in the vicinity of the wind farm ranged from ***Q2-3 – Poor*** *(WF 7 and WF 20) to* ***Q3-4 –Moderate, Q4 –Good*** *and* ***Q4-5 – High*** *(WF 5, WF 8, WF 10).*

There were no positive results for freshwater pearl mussel or white-clawed crayfish eDNA at any of the wind farm survey sites.

No otter holts or couches were identified at the survey sites in the vicinity of the Proposed Wind Farm. Otter signs in the form of spraints were found at survey site WF 18, indicating that otter actively utilise the Gortnacowly (a tributary of the Mealagh River). Given the high fisheries potential and good connectivity of other survey sites within the vicinity of the Proposed Wind Farm, it is very likely that otter actively utilise these watercourses for commuting and foraging. No kingfisher burrows were observed utilising the watercourses in the vicinity of the Proposed Wind Farm survey sites, with no kingfisher burrows identified at the time of survey'

6.3.3.8 Other Species

Irish hare (*Lepus timidus ssp. hibernicus*) was observed on occasion travelling across peatland habitats within the Proposed Wind Farm. No evidence of other species of conservation concern was identified within the Site.

6.3.4 Identification of Key Ecological Receptors

Table 6-9 lists all identified receptors and assigns them an ecological importance in accordance with the TII Ecological Impact Assessment Guidelines[30]. This table also provides the rationale for this determination and identifies the habitats that are KERs. These ecological receptors are considered in **Section 6.5** of this report, and mitigation/ measures will be incorporated into the Proposed Project where required, to avoid potential significant impacts on the features.

Table 6-9 Key Ecological Receptors identified during the assessment

Ecological feature or species	Reason for inclusion as a KER	KER
Designated Sites		
European Designated Sites	The following European Sites are identified in the AA Screening as being within the Likely ZOI and are assessed fully in the NIS that accompanies this application: › Bandon River SAC [002171] › Mullaghanish to Musheramore Mountains SPA [004162] The Proposed Wind Farm is located within a separate hydrological sub catchment than the River Bandon SAC. The southeast end of the Proposed Grid Connection extends into the boundary of the River Bandon SAC. These sites are assigned **International Importance** and included as a KER as there is potential for indirect effects on these sites.	**Yes**
Nationally Designated Sites	The following Nationally Designated Site is located downstream of the Proposed Project. A pathway for impact via water quality deterioration as a result of the Proposed Project was identified: › Bandon Valley South of Dunmanway pNHA [001035] Bandon Valley South of Dunmanway pNHA [001035] has been assessed as of **International Importance** due to also having a European designation.	**Yes**
Habitats (Terrestrial)		
Wet Heath (HH3)	**Wet Health (HH3)** was recorded throughout the Proposed Wind Farm, on gently sloping peat soils. Areas of Article 17 mapped Wet Heath are present within the Site to the north and south turbine clusters. The mapped areas are of **County Importance** given the inclusion in Article 17 Reporting. These areas have been completely avoided by the Proposed Project. However, it has been included as a KER given the sensitivity of the habitat and its proximity to works areas. Turbine 4 and Turbine 14, and associated infrastructure (hardstand and access roads), and the northern section of the northern temporary construction compound are located on areas of degraded **Wet Heath (HH3)** not mapped under Article 17. Extensive on-going sheep	**Yes**

[30] [30] *(TII, 2009a)- Guidelines for Assessment of Ecological Impacts of National Road Schemes Rev 2. Available at https://www.tii.ie/media/kzldoawo/guidelines-for-assessment-of-ecological-impacts-of-national-road-schemes.pdf*

	grazing was evident in the vicinity of T4 and T14, and as a result the wet heath habitat in these areas was degraded, and uniform in appearance, with little species diversity, as described in full in **Section 6.3.3.6** above and in **Appendix 6-1.** As such, to the degraded nature of the Wet Heath habitat in these areas, it has been assigned ***Local Importance (Higher Value).*** Overall, approximately 2.02ha of this degraded wet heath (HH3) habitat will be lost to facilitate the Proposed Wind Farm, and it is therefore included as a KER for further assessment.	
Upland Blanket Bog (PB2)	**Upland Blanket Bog (PB2)** was recorded to the northeast and south of the Proposed Wind Farm, on level or gentle sloping ground. Areas of Article 17 mapped Active Blanket Bog are present within the Site to the south. The mapped areas are of **County Importance** given the inclusion in Article 17 Reporting. These areas have been completely avoided by the Proposed Project. However, it has been included as a KER given the sensitivity of the habitat and its proximity to works areas. A large mosaic habitat of Upland Blanket Bog (PB2)/ Wet Heath (HH3) was recorded to the northeast of the Proposed Wind Farm site, north of T1 and T2. These areas correspond to the Annex I habitat *'Blanket Bogs (if active bog) (7130)*' and have been assigned **County Importance.** These areas have been completely avoided by the Proposed Project. However, it has been included as a KER given the sensitivity of the habitat and its proximity to works areas. The floating **Turbine 14 Access Road** runs through an area of **Upland Blanket Bog (PB2)** for approximately 0.2ha, as described in full in **Section 6.3.3.7** and **Appendix 6-1.** The installation of a floating road will reduce excavation and impacts on the hydrology of the surrounding peatland. Evidence of previous turbary activity, drainage, and grazing was recorded which has resulted in the degradation of this habitat in places, and as a result and has been assigned **County Importance.** Overall, approximately 0.2ha of **Upland Blanket Bog (PB2)** habitat will be lost to facilitate the Proposed Wind Farm, and it is therefore included as a KER for further assessment.	**Yes**
Dry Siliceous Heath (HH1)	**Dry Siliceous Heath (HH1)** was recorded within the northwestern margin of the south of the Site, on steeply sloping and undulating land. This habitat has links to the Annex I habitat '*European dry heaths (4030)'.* No Wind Farm infrastructure is proposed for this area, and as such this Annex 1 habitat will not be impacted by the Proposed Project and is not included as a KER. Infrastructure associated with T13, including the southern portion of Turbine 13 hardstand and proposed access road are located partially within areas of **fragmented Dry Siliceous Heath (HH1)** in the south of the Proposed Wind Farm site, which occur between areas of reclaimed, intensively managed improved agricultural grassland (GA1), as described in full in **Section 6.3.3.8** above and **Appendix 6-1.** This area of dry heath has been fragmented due to intensive land reclamation in the surrounding area, and intensive grassland management. As a result, the cover of dry siliceous heath to the south of T13 is non-continuous and degraded as a result.	**No**

	Overall, there will be a loss of approximately 0.1ha of fragmented, degraded dry heath in the vicinity of T13 and is not included as a KER	
Dense Bracken (HD1)	Dense Bracken (HD1) occurs on the Proposed Wind Farm in association with Wet Heath (HH3), in the vicinity of T14 and T3, and Dry Siliceous Heath (HH1) to the west of the Site. Areas of Dense Bracken (HD1) will be lost in the vicinity of T14 and T3 to facilitate the access roads. This habitat where it occurs within the Site is species poor, dominated by bracken, and is limited in biodiversity value and therefore classified as ***Local Importance (Lower Value)*** and is not included as a KER	**No**
Improved agricultural grassland (GA1)	Areas of Improved Agricultural Grassland (GA1) will be lost in the vicinity of Turbine 12 and Turbine 13 to facilitate the Proposed Project. This habitat is highly modified, and subject to intensive, ongoing sheep/ cattle grazing and mowing, producing a short uniform sward, with little species diversity. As such, this habitat where it occurs within the Site is species poor and is limited in biodiversity value and therefore classified as ***Local Importance (Lower Value)*** and is not included as a KER.	**No**
Wet grassland (GS4)	Areas of Wet Grassland (GS4) will be lost in the vicinity of Turbine 13, and along access roads from T11- T13, and along the proposed new site entrance to facilitate the Proposed Project. This habitat is subject to intensive, ongoing sheep/ cattle grazing, producing a uniform sward, with little species diversity. As such, this habitat where it occurs within the Site is species poor and is limited in biodiversity value and therefore classified as ***Local Importance (Lower Value)*** and is not included as a KER.	**No**
Dry-Humid Acid Grassland (GS3)/ Wet Grassland (GS4)	Areas of degraded Dry-Humid Acid Grassland (GS3)/ Wet Grassland (GS4) will be lost in the vicinity of Turbine 3 and Turbine 5 to facilitate the Proposed Project. This mosaic habitat is subject to intensive, ongoing sheep grazing, producing a short uniform sward, with little species diversity. As such, this habitat where it occurs within the Site is species poor and is limited in biodiversity value and therefore classified as ***Local Importance (Lower Value).*** Further, these habitat types have links to the Annex I habitats '**species-rich Nardus grasslands on siliceous substrates in mountain areas (6230)'* and *'Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) (6410)'.* As stated in Fossitt 2000 for Dry-Humid Acid Grassland (GS3) '*High species diversity is not characteristic but species-poor stands that appear to be the product of overgrazing are excluded'.* Therefore, this mosaic habitat does not conform to these Annex I habitats, and it is not considered as a KER.	**No**
Dry Meadows and Grassy Verges (GS2)	This habitat is classified as ***Local Importance (Lower value***) as where it occurs within and adjacent the Site is it generally of low biodiversity value primarily due to fragmentation, and grazing/ mowing. Further this habitat is common and widespread in the local area. For these reasons, this habitat has not been identified as a KER.	**No**
Conifer plantation (WD4)/ Recently felled woodland (WS5)	There will be loss of commercial conifer forestry to facilitate the Proposed Project. This habitat where it occurs within the Site is very species poor in both canopy and ground layer and is limited in value to local wildlife. It is of ***Local Importance (lower value)*** and it is not considered as a KER.	**No**

Riparian Woodland (WN5)	Riparian Woodland (WN5) dominated by willow species was recorded in the north of the Proposed Wind Farm site, along the banks of the Owngar (Cork) River. This habitat will not be impacted by the Proposed Project, and as such it is not included as a KER.	**No**
Buildings and Artificial Surfaces (BL3)/ Spoil and Bare Ground (ED2)	These habitats are common and widespread in the wider area. The habitats have been assessed as of ***Local Importance (Lower Value)*** as they are largely associated with artificial site access tracks and are of low biodiversity value. Similarly, the existing road in which the Proposed Grid Connection route is located, which is categorised under buildings and artificial surfaces (BL3) is not of ecological significance. For this reason, they have not been identified for further assessment and are not a KER.	**No**
Scrub (WS1)	Some areas of scrub (WS1) of ***Local Importance (Lower Value)*** will be removed to facilitate the Proposed Project. Species composition is generally poor, dominated by gorse and bramble, is and of wide availability in the wider landscape. However, the loss of scrub, including potential loss of its function as wildlife corridors, is included as a KER for further assessment.	**Yes**
Hedgerow (WL1)	Hedgerows have been assessed as being of ***Local importance (higher value)*** as they 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 Wind Farm, there will be some loss of hedgerow habitat within the Proposed Wind Farm. For this reason, this habitat has been identified for further assessment as a KER.	**Yes**
Aquatic Habitats and Species		
Eroding/upland rivers (FW1)/ Depositing Lowland Rivers (FW2) & Associated Aquatic Fauna **Dystrophic Lakes (FL1)**	The Proposed Windfarm and Grid Connection crosses, or is located adjacent to a number of streams and EPA mapped river waterbodies, and associated tributaries classified at these points as **Eroding/upland rivers (FW1)/ Depositing Lowland Rivers (FW2)**, namely: › Mealagh River › Owngar (Cork) River › Bandon River › Owvane (Cork) River To facilitate the construction of the Proposed Wind Farm roads, there are 5 no. new watercourse crossings that will be required; › Two new watercourse crossings in the northern cluster, one crossing the Owngar River to facilitate the proposed site entrance and delivery of turbine components to the Proposed Wind Farm's northern cluster, and a second new watercourse crossing along the access road to T4. › Three new watercourse crossings in the southern cluster: 1 no. on the new road southwest of the proposed 110kV onsite substation, 1 no. on the access road to T13, and 1 no. on access road between T11 and T12 all classified as classified as Eroding Upland River (FW1). The above watercourse crossings will all be achieved via new clear span crossings.	**Yes**

	There are also 3 no. existing watercourse crossings that require upgrading as part of the Proposed Wind Farm: all 3 no. are located on the existing forestry road southwest of the proposed 110kv onsite substation. These watercourses have been assigned ***Local Importance (Higher Value)*** as they were of high biodiversity value and connect to downstream waterbodies in the local area. They also provide a conduit to downstream designated sites of national and international importance. Therefore, this habitat has been identified for further assessment as a KER. Further, two lake habitats classified as **Dystrophic Lakes (FL1)** were recorded to the north and south of the Proposed Wind Farm. The aquatic species that are associated with the watercourses located within and surrounding the Site are assigned ***Local Importance (Higher Value)*** in that they have a high biodiversity value in the local context. The downstream watercourses and fauna within them have been assigned as of ***Local Importance (Higher Value)*** due to the known populations of salmon, trout, European eel, Freshwater Pearl Mussel, lamprey and otter, as detailed in **Section 6.3.1 and Section 6.3.8** above. On a precautionary basis, Freshwater Pearl Mussel potentially present in watercourses downstream of the Site may be associated with QI populations of the River Bandon SAC and would therefore be of ***International Importance.*** In the absence of appropriate mitigation and design, taking a precautionary approach; potential for indirect effect on these watercourses during construction of the Proposed Project has been identified. These species include salmonid, trout, European eel, lamprey and other aquatic species. Fish and other aquatic species are therefore included as a KER for further assessment along with **Eroding/ upland rivers (FW1)/ Depositing/ Lowland Rivers (FW2).**	
Drainage ditches (FW4)	**Drainage ditches (FW4)** were recorded within and adjacent to the Site, along road margins, in adjacent agricultural grasslands, often associated with conifer plantations. These drains were often manmade, highly modified and species poor where they occur, but do provide some connectivity with natural watercourses within the Site. As such they are assessed as being ***Local Importance (lower value)*** but are considered further as a KER due to potential for conductivity with higher value watercourses.	**Yes**
Fauna		
Badger	Badger as an ecological receptor has been assigned ***Local Importance (Higher value)*** on the basis that the habitats within the Proposed Wind Farm site are potentially used by badger populations of Local Importance. Given that the species is known to inhabit the area, potential for direct and indirect impacts on badger therefore considered further in this assessment and the species has been included as a KER for further assessment.	**Yes**
Otter	Otter as an ecological receptor has been assigned ***Local Importance (Higher Value)*** on the basis that the watercourses within and adjacent	**Yes**

	to the Site, and along the Proposed Grid Connection may potentially be utilised by local otter populations. No otter holts, couches or slides were identified during dedicated surveys undertaken for the species within the Site or along the Proposed Grid Connection. However, given that the species is known to inhabit the area, potential for direct and indirect impacts on otter are therefore considered further in this assessment and the species has been included as a KER for further assessment.	
Bats	The habitats within and surrounding the Proposed Project are likely to be utilised by a bat population **of Local Importance (higher value)**. Bats are likely to utilise linear treeline/ hedgerow habitats and woodlands within the vicinity of the Site to commute and forage. All bat species in Ireland are protected under both national legislation – (Wildlife Act, 1976, as amended) and European legislation – (Habitats Directive (92/43/EEC). Taking a precautionary approach, the Proposed Project has the potential to result in direct and indirect effects on the receptor. Therefore, bats are included as a KER for further assessment.	**Yes**
Reptiles and Amphibians	Frog spawn was recorded within drainage ditches and puddles adjacent to the southern conifer plantation, and along access roads. One sighting of common frog was also recorded in this area. No evidence of populations of amphibians/reptiles being significant at more than a local level was recorded, and these species have been assessed as of **Local Importance (Higher Value)** Given the common and widespread availability of suitable habitat for amphibians/ reptiles in the in the local area, the Proposed Project will not result in a significant loss of suitable habitat for reptiles and amphibians. The Proposed Project has no the potential to result in direct effects on the receptor and these species have not been identified as a KER.	**No**
Kerry Slug	Kerry Slug has been assessed as a receptor of **County Importance** as they represent a resident or regularly occurring population of an Annex II species of the Habitats Directive. There is potential for direct and indirect impacts on this species as a result of the construction phase of the Proposed Project due to the observation of this species to the southern turbine cluster of the Site as described in **Section 6.3.8.4,** and the known record of this species in the east of the Proposed Wind Farm site, as described in **Section 6.3.1.8 above.** **Therefore, Kerry Slug is considered a KER.**	**Yes**
Pine marten and Red squirrel	No signs of pine marten or red squirrel were recorded within the Site. However, the Site provides potential supporting habitat for Pine Marten and Red Squirrel in the form of conifer plantation. Further, these species are known to occur within the hectads W05, W15, W25 in which the Proposed Project is located, as described in **Section 6.3.1.5 and 6.3.1.6** above. Although these species are unlikely to be significantly affected by the Proposed Project, given the widespread and common occurrence of conifer plantation in the wider area, they are included as a KER for further assessment.	**Yes**
Additional fauna (e.g. Irish hare, Fox, etc).	The recorded evidence suggests that the Site is not utilised by populations of other protected fauna of higher than ***Local Importance (Higher Value)*** and no potential for significant effects have been identified at the population level. Due to the small footprint and	**No**

	nature of the Proposed Project, they are unlikely to be significantly affected by the Proposed Project.	

6.4 Ecological Impact Assessment

6.4.1 Do- Nothing Effect

If the Proposed Project were not to proceed, the existing use of small-scale agriculture and commercial forestry, as well as turbary activity would continue. The other habitats identified within the Site including hedgerow, watercourses and associated habitats, would likely remain in a similar condition. 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 significantly.

The opportunity to harness the wind energy resource of County Cork 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 (Refer to BMEP **Appendix 6-4**, for details).

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

Within this section, the assessment of effects will consider the Proposed Project i.e. both the Proposed Wind Farm site and the Proposed Grid Connection as a whole, where possible. Where the Proposed Wind Farm site and the Proposed Grid Connection are required to be considered separately, this is identified within the assessment.

6.4.2.1 Effects on Habitats During Construction

Table 6-10 below provides details of the extent of the habitats assessed as Local Importance (*higher value*) that will be lost to facilitate the footprint of the Proposed Project. The Proposed Project will result in the loss of additional habitats which have been assessed as being of L*ocal Importance (lower value).* The loss of these common and widespread habitats is not considered significant at any geographic scale, as discussed in **Table 6-9** above. The effects on habitats that are identified as KERs are described in the below tables.

A map showing the Proposed Wind Farm footprint overlaying the habitat map is provided in **Figure 6-7 & 6-8.**

Table 6-10 Habitats occurring within the Proposed Project Footprint.

Habitat	Area to be lost to Proposed Project footprint (hectares/meters)	KER?	Lost to facilitate
Wet Heath (HH3)	**1.6ha**	**Yes**	**Proposed Wind Farm**
Upland Blanket Bog (PB2)	**0.2ha**		**Proposed Wind Farm**
Scrub (WS1)	**0.4ha**		**Proposed Wind Farm**
Hedgerow (WL1)	**23m**		**Proposed Wind Farm**
Conifer Plantation (WD4)/ Recently Felled Woodland (WS5)	42.8ha	**No**	Proposed Wind Farm
Improved Agricultural Grassland (GA1)	0.2ha		Proposed Wind Farm
Wet Grassland (GS4)	1.5ha		Proposed Wind Farm
Improved Agricultural Grassland (GA1)/ Wet Grassland (GS4)	0.2ha.		Proposed Wind Farm
Dry Humid Acid Grassland (GS3)/ Wet Grassland (GS4)	3.3ha		Proposed Wind Farm
Fragmented Dry Siliceous Heath (HH2)	0.2ha		Proposed Wind Farm
Dense Bracken (HD1)	0.2ha		Proposed Wind Farm

The Proposed Grid Connection route will not result in the significant permanent loss of any habitat. The works will be primarily restricted to the existing road network categorised as **Buildings and Artificial Surfaces (BL3).** This is not significant at any geographic scale.

The effects on habitats that are identified as KERs are described in the below tables. The habitats brought forward for further assessment as described in the table above, include the following:

- Aquatic habitats including Eroding/upland rivers (FW1), Depositing Lowland Rivers (FW2), Dystrophic Lakes (FL1) and Drainage Ditches (FW4)
- Wet Heath (HH3)
- Upland Blanket Bog (PB2)
- Scrub (WS1)
- Hedgerow (WL1)

6.4.2.1.1 *Assessment of Potential Effects on Surface Watercourses and Sensitive Aquatic Faunal Species*

Table 6-11 Potential for impact on Watercourses and Sensitive Aquatic Species

Description of Effect	This section assesses the potential for likely significant effects on surface watercourses and associated aquatic habitats. The potential for impacts on associated aquatic fauna is also assessed including freshwater pearl mussel, salmon, trout, European eel, otter and other aquatic species identified during the desk study and dedicated aquatic surveys and likely to occur downstream of the Site.

	The Proposed Wind Farm is located within the Owvane and Mealagh Margaritifera sensitive areas (respectively), which are both listed as catchments of extant freshwater pearl mussel populations outside of the SAC populations listed in S.I. 296 of 2009. The Proposed Grid Connection is located within the Bandon and Caha *Margaritifera* catchment. Therefore, the Proposed Grid Connection is located within a *Margaritifer*a catchment of SAC populations listed under regulations S.I. No. 296/2009 - The European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009. To facilitate the construction of the Proposed Wind Farm roads, there are 5 no. new watercourse crossings that will be required; › Two new watercourse crossings in the northern cluster, one crossing the Owngar River to facilitate the proposed site entrance and delivery of turbine components to the Proposed Wind Farm's northern cluster, and a second new watercourse crossing along the access road to T4. › Three new watercourse crossings in the southern cluster: 1 no. on the new road southwest of the proposed 110kV onsite substation, 1 no. on the access road to T13, and 1 no. on access road between T11 and T12 all classified as classified as Eroding Upland River (FW1). The above watercourse crossings will all be achieved via new clear span crossings. There are also 3 no. existing watercourse crossings that require upgrading as part of the Proposed Wind Farm: all 3 no. are located on the existing forestry road southwest of the proposed 110kv onsite substation. Construction phase activities will require ground excavations, cement, tree felling, excavation dewatering, use of fuel powered machinery, all of which have potential to result in pollutive materials entering watercourses. Along the Proposed Grid Connection, there are 11 no. surface water crossing points. The Proposed Grid Connection will be emplaced primarily along the road carriageway therefore no instream works will occur, and no bridge/ culvert alterations are proposed. However, there is potential for the activities associated with the installation of the Proposed Grid Connection to result in the runoff of silt and other pollutants such as hydrocarbons and cementitious material in the absence of mitigation. Surface water quality effects on local watercourses may occur during drilling and groundworks associated with standard trefoil arrangement formation (Option A), flatbed formation under culverts/ services (option B), flatbed formation over bridges/ culverts/ services (option C) or horizontal directional drilling (HDD) (option D) watercourse crossings. However, there is a risk of indirect impacts from sediment laden runoff during the launch pit and reception pit excavation works. There is also the unlikely risk of fracture blow out and contamination of the watercourse with drilling fluid. One no. existing watercourse crossing along the R585 will be traversed to cater for the internal 33kV IPP cabling within the Proposed Wind Farm. This crossing comprises an existing stone arch bridge. The approximate coordinates for this crossing are E 510541, N 556626 (ITM). Instream works are not required at any watercourse crossing along the proposed IPP cabling route or Proposed Grid Connection. These 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.
Assessment of Significance prior to mitigation	In the absence of mitigation, there is potential for the Proposed Wind Farm to result in significant indirect effects on the identified aquatic habitats and species at a local geographic scale in the form of pollution during the construction phase. There is

	potential for an indirect, negative, significant, temporary, likely impact to surface waters within the Proposed Wind Farm site. This would result in impacts on a receptor of local importance (higher value). In the absence of mitigation, there is potential for the Proposed Grid Connection to result in significant indirect effects on the identified aquatic habitats and species in the form of pollution arising during the construction phase. This would result in impacts on receptors of local importance (higher value), and potentially of International Importance due to the downstream connectivity with the River Bandon SAC/ Bandon Valley South of Dunmanway pNHA via the Proposed Grid Connection.
Mitigation	A drainage design for the Proposed Project is provided in **Chapter 4, Section 4.7** of this EIAR. This plan provides details of how water quality will be protected during the construction of the Proposed Project. In addition to this, specific mitigation is provided in relation to protection of surface water quality is provided in **Chapter 9: Hydrology and Hydrogeology** of this EIAR, see **Section 9.6**. These mitigations relate to earthworks, tree felling, potential release of hydrocarbons during construction and storage, contamination from wastewater disposal, groundwater impacts, flooding impacts, potential impacts during horizontal directional drilling, and release of cement-based products.
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.

6.4.2.1.2 *Assessment of Potential Effects on Wet Heath (HH3) and Upland Blanket Bog (PB2)*

Table 6-12 Assessment of Potential Effects on Wet Heath (HH3) & Upland Blanket Bog (PB2)

Description of Effect	**Direct habitat loss:** All high-quality, intact heath and bog habitats within the Site have been deliberately avoided in the design of the Proposed Project. As described in **Section 6.3.3.6** and **Section 6.3.9** above, Turbine 4 and Turbine 14, and associated infrastructure (hardstand and access roads), and the northern section of the northern temporary construction compound are located on areas of degraded **Wet Heath (HH3**) not mapped under Article 17. Extensive on-going sheep grazing was evident in the vicinity of T4 and T14, and as a result the wet heath habitat in these areas was degraded, and uniform in appearance, with little species diversity (Refer to **Appendix 6-1** for further detail**).** As such, to the degraded nature of the Wet Heath habitat in these areas, it has been assigned ***Local Importance (Higher Value).*** Overall, approximately 1.6ha of this degraded wet heath (HH3) habitat will be lost to facilitate the Proposed Wind Farm. As described in **Section 6.3.3.6** and **Section 6.3.9** above, the **Turbine 14 Access Road** runs through an area of **Upland Blanket Bog (PB2)** in the south of the Proposed Wind Farm site. A new floating road will be constructed for this access road where the peat depth is in excess of 3m and the slope angle is less than a 5 degree slope. Evidence of previous turbary activity, drainage, and grazing was recorded which has resulted in the degradation of this habitat in places, and as a result, and has been assigned **County Importance.** Overall, approximately 0.2ha of Upland Blanket Bog (PB2) habitat will be lost to facilitate the Proposed Wind Farm, **Indirect effects:** **Indirect effects due to drainage:**

	The potential for indirect effects to wet heath/ upland blanket bog habitats as a result of drainage effects from adjacent construction areas requires further assessment. Small scale temporary dewatering may occur at some excavations associated with Proposed Wind Farm infrastructure (i.e., turbine bases, cable trenches), and these have the potential to temporarily affect local groundwater levels. According to the Peatland Code (IUCN 2023)[31], peatland is considered 'drained' if it is within 30m of an artificial drain or a natural drain formed by the presence of a hagg and gully. Areas of Article 17 Mapped Wet Heath are located approximately 50-160m from the proposed access roads from T11, T12 & T14, and approximately 200-260m from T11/T12/ T14. Further areas of mapped Wet Heath are mapped approximately 35m from T2, and approximately 140m from T4 (**Figure 6-3).** No drainage effects to Annex I heath habitat as a result of the Proposed Wind Farm are likely. **Indirect effects due to dust:** Given that construction works will take place within 50m of the Article 17 mapped habitats, the potential for impact to the habitat and associated plant communities as a result of dust deposition from construction works must be considered. Dust deposition has the potential to smother sensitive plant communities.
Assessment of Significance prior to mitigation	**Direct habitat loss** The loss of these habitats is considered to be a direct, negative, permanent, significant effect at a local to county geographical scale. **Indirect effects:** Given the distance between the majority of proposed infrastructure and Annex I peatland habitats, there is no potential for significant effect to peatland habitats as a result of drainage due to permanent proposed infrastructure. A potential for effect to Article 17 wet heath habitat as a result of dust deposition from construction works has been identified. Given the temporary nature of the effects of dust deposition, this is considered to be an indirect, temporary effect (although not significant) on the habitat. However, mitigation is provided below to prevent any such effects.
Mitigation	**Mitigation by Design** The Proposed Wind Farm has been specifically designed to avoid Article 17 mapped and unmapped areas of blanket bog, wet heath and dry heath in good condition where possible and to minimise impacts thereon. This was achieved through an early-stage ecological constraints study informed by field surveys and habitat mapping. The Proposed Wind Farm layout was thereby altered through the iterative design process to avoid important peatland/ heath habitats. **Specific Mitigation** The loss of degraded wet heath habitat in the vicinity of T4 and T14 will be offset through the BMEP (**Appendix 6-4**). It is proposed to fell an area 5.3ha of young conifer plantation in the northern section of the Proposed Wind Farm site, in areas where Wet Heath (HH3) habitat previously existed. The restoration efforts will restore the formerly occurring wet heath habitat to this area. A Monitoring Plan to ensure success of the proposed measures are also provided in the BMEP.

[31] https://www.iucn-uk-peatlandprogramme.org/sites/default/files/2023-03/Peatland%20Code%20V2%20-%20FINAL%20-%20WEB_2.pdf

	Dust Mitigation A range of construction phase mitigation measures to prevent dust impacts have been described as set out in **Chapter 10: Air Quality**. These include the following: › Groundworks (i.e., works with potential to create dust) associated with proposed turbines T04 and T14 will be fully supervised by an ECoW. The ECoW will regularly monitor adjacent Annex I habitat for signs of dust deposition or any other habitat degradation. › Sporadic wetting of loose stone surface will be carried out during the construction phase to minimise movement of dust particles to the air. In periods of extended dry weather, dust suppression may be necessary along haul roads to ensure dust does not cause a nuisance. Water bowser movements will be carefully monitored to avoid, insofar as reasonably possible, increased runoff. › All plant and materials vehicles shall be stored in dedicated areas within the Site. › Areas of excavation will be kept to a minimum, and stockpiling will be minimised by coordinating excavation, spreading and compaction. Stockpiles will be covered where necessary. › Turbines and construction traffic will be transported to the Site on specified haul routes only. › The agreed haul route road adjacent to the Site will be regularly inspected for cleanliness and cleaned as necessary. › The roads adjacent to the Site entrances will be checked weekly for damage/potholes and repaired as necessary. › The transportation of materials from the borrow pit around the Site will be covered by tarpaulin or similar covered vehicles where necessary. › The transportation of construction materials from locally sourced quarries for the Proposed Grid Connection to the Site will be covered by tarpaulin where necessary. › If necessary, excavated material will be dampened prior to transport to the spoil management areas. › Waste material will be transferred to a licensed/permitted Materials Recovery Facility (MRF) by a fully licensed waste contractor where the waste will be sorted into individual waste streams for recycling, recovery or disposal. The MRF facility will be local to the Proposed Project to reduce the amount of emissions associated with vehicle movement.
Residual Effect	With the above mitigation in place, there is no potential for residual significant effect on Wet Heath (HH3) habitat as a result of the Proposed Project. However, there will be a residual significant effect on blanket bog habitat as a result of the loss of approximately 0.2ha of degraded blanket bog habitat.

6.4.2.1.3 *Assessment of Potential Effects on Linear and Scrub Habitats*

Table 6-13 Assessment of Potential Effects on Linear and Scrub Habitat

Description of Effect	The Biodiversity Management and Enhancement Plan (**Appendix 6-4**) provide for the replanting of 0.6ha of native woodland within the Proposed Wind Farm. This will result in a net gain in native woodland habitat within the Site as a result of the Proposed Project. As described in **Table 6-10** above, there will be a loss of approximately 0.6ha of scrub, 23m of hedgerow as a result of the Proposed Project. Regarding vegetation cutting along the TDR route, this would only comprise temporary cutting back of vegetation to accommodate the wheel arches of the trucks and oversail of the turbine blades. Vegetation will not be felled/removed in these habitats.

Assessment of Significance prior to mitigation	The cumulative loss of 23m of hedgerow and 0.6ha scrub as a result of the Proposed Project comprises various smaller sections associated with infrastructure throughout the Site. This is considered to be a permanent, but not significant, effect.
Mitigation	The loss of hedgerow and scrub for the Proposed Project will be offset through the planting of native woodland as part of the BMEP (**Appendix 6-4**). In total it is proposed to plant 0.6ha of native woodland. A section of immature native woodland is located to the east of the proposed 110kV onsite substation in the southern cluster. This section of immature native woodland is surrounded by conifer plantation. It is proposed to fell an area of the conifer plantation and replace this with native woodland. This native woodland area has been strategically chosen to link up with identified bat commuting corridors within the Proposed Wind Farm site and will provide enhanced foraging area relative to the commercial conifer stands. The proposed planting will comprise native tree species of various age structures and will be of greater biodiversity value than the habitats being lost. The BMEP and associated planting proposals will be implemented within planting season during or in advance of phase 1 of construction works in order to minimise the interim time necessary for growth and establishment of new habitat.
Residual Effect	With the implementation of the BMEP, there is no potential for residual significant effect.

6.4.2.1.4 *Biosecurity*

As described above in **Section 6.3.7** above, Rhododendron, a third schedule invasive species was identified within the Site. Individual stands of Rhododendron were recorded to the north and south of the Proposed Wind Farm, within Conifer plantation and open peatland habitat **(Figure 6-9).**

In the absence of mitigation there is potential for spread of invasive species to other habitats within the Proposed Wind Farm site and outside of the Site. This could occur via dispersal of seeds locally, or inappropriate disposal of the plant material whereby seeds or propagatable material are spread to another area. Vector material may also be spread to other sites as a result of entrainment within machinery or staff clothing. The following measures will be in place to avoid impacts to biosecurity as a result of construction of the Proposed Project:

Rhododendron regrows vigorously when cut. As a result, some method of stump killing or removal is always necessary. Any untreated cut stump will regrow and in most cases flower within 3-4 years. The following measures will be in place:

- A pre-commencement survey for invasive species within the footprint of the Proposed Wind Farm site will be carried out by a suitably qualified ecologist to ensure there is no new growth of Third Schedule invasive species in these areas.
- If additional invasive species are recorded within the construction areas, an Invasive Species Management Plan will be prepared in advance of construction which will incorporate the measures necessary to prevent spread additional to the measures laid out below.
- A Toolbox Talk will be given by the Environmental Clerk of Works (EnCoW) or ECoW in relation to the management of invasive species within construction areas.
- The infested area will be demarcated and works in the vicinity of the infestation will only be carried out under supervision by a suitably qualified ECoW or EnCoW.
- In advance of construction works in the vicinity of the infested area, it will be necessary to completely remove the infestation outside of the flowering period (May to July) and dig the roots completely out. The effectiveness of this technique is increased by removing all viable roots. To avoid regrowth, stumps will be turned upside down and soil will be brushed off roots. The roots are relatively shallow, seldom being deeper than 45cm.

- Any machinery working in close proximity to the infested areas will undergo washing in a designated biosecurity area before existing the Site.
- Once the supervising ecologist confirms that the material is dried out and non-viable, it will be chipped and composted on-site.
- It is envisaged that no contaminated soil is to be removed from the Proposed Project. Should potentially Third Schedule contaminated soil be required to be removed from the Site, it will be transported to a suitably licenced waste facility and will require a licence from the NPWS prior to its transportation.

In order to avoid the potential for spread of invasive species into the Site:

- Any construction material imported into the Site will come from a source confirmed to be free of invasive species.
- All plant and machinery will be thoroughly cleaned before entering and exiting the Site.

A detailed **Invasive Species Management Plan** is provided in **Appendix 6-6**.

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 that were recorded on the Site but were not included as KERs, see **Table 6-9** above. Given the extensive area of habitat that will remain undisturbed throughout the Site and in the wider area and the avoidance of the most significant areas of faunal habitat, no significant effects on non-KER faunal biodiversity are anticipated as a result of the Proposed Project. Therefore, these species were excluded from further assessment.

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 6.4.2.1.1** above and is not repeated below.

The following species have been brought forward for further assessment, as identified in **Table 6-9 above:**

- Bats
- Badger
- Otter
- Kerry Slug
- Pine Marten and Red Squirrel

6.4.2.2.1 *Assessment of Potential Effects on Bats*

As per NatureScot Guidance, wind farms present four potential risks to bats:

- Collision mortality, barotrauma and other injuries; (Operational Phase Impact)
- Loss or damage to commuting and foraging habitat;
- Loss of, or damage to, roosts;
- and Displacement of individuals or populations.

For each of these four 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.

Bat surveys undertaken in 2024, in accordance with NatureScot Guidance, form the core dataset for the assessment of effects on bats.

Table 6-14 Assessment of Potential Impacts on Bats During the Construction Phase

Description of Effect	The Proposed Wind Farm site is predominantly composed of conifer plantation, wet heath and improved agricultural grassland, with smaller areas of blanket bog, dry heath, dry humid acid grassland and a limited number of linear features such as hedgerows and treelines. **Loss or damage to commuting and foraging habitat** In the absence of appropriate design, the loss or degradation of commuting/foraging habitat i.e., hedgerow, treeline etc has potential to reduce feeding opportunities and/or displace bat populations. Approximately 44 ha of conifer plantation will be felled to accommodate the bat buffer (described in Section 6.4.3.2.1) and the development footprint. As this plantation is a commercial crop, felling is expected regardless of the Proposed Wind Farm. The removal of dense, closed-canopy plantation is not considered detrimental to bats, as it will increase the extent of woodland edge habitat which is known to support both foraging and commuting. With these edges retained or expanded, no net loss of suitable habitat is anticipated. A small section of hedgerow (23 m) and approximately 0.6 ha of scrub will be removed to facilitate the construction of an access road. These habitats have potential to provide some foraging and commuting opportunities, however, represent a small loss in the context of the wider area. Accommodation works along the Turbine Delivery Route are limited to vegetation trimming, with no removal of hedgerows or trees. Therefore, no significant effects on commuting or foraging bats are predicted in relation to the TDR works. The Proposed Wind Farm site lies within the current known range of lesser horseshoe bat (Article 17). This species was recorded occasionally (93 bat passes) during the 2024 baseline surveys at conifer-forestry edges at the northern edge of the Proposed Wind Farm site. These records indicate that the Site provides only localised and limited foraging and commuting opportunities for this species. In Ireland, lesser horseshoe bats rely on sheltered, cluttered habitats such as broadleaved woodland, dense scrub, tall hedgerows, treelines and vegetated river corridors for foraging and commuting (NPWS 2018; NPWS & VWT 2022). Such habitats are largely absent across the Proposed Wind Farm site. However, the implementation of the BMEP, including the establishment of native woodland and enhancement of edge habitats, will improve the suitability of the Site for foraging and commuting by bats. **Loss of, or damage to, roosts** The Proposed Wind Farm site is predominantly composed of conifer plantation, wet heath and improved agricultural grassland, with smaller areas of blanket bog, dry heath, dry humid acid grassland, immature woodland and limited linear features. Trees within the commercial conifer plantation are of limited age and structural diversity and, due to species composition and management history, do not provide suitable roosting habitat for bats. Consequently, the removal of conifer trees associated with the bat buffers and infrastructure footprint will not result in the loss or damage of bat roosts. No buildings or other structures suitable for roosting occur within the Proposed Wind Farm site, and no confirmed bat roosts or potential roost features (PRFs) were identified during the 2024 surveys. Accordingly, no loss of, or damage to, roosting habitat is anticipated within the Proposed Wind Farm footprint as a result of the Proposed Project. In Ireland, lesser horseshoe bats (*Rhinolophus hipposideros*) typically roost in warm, undisturbed spaces within old stone buildings during the summer maternity period and in cool, humid underground sites such as caves, mines and cellars during winter hibernation (NPWS, 2018; NPWS & VWT, 2022). No such suitable roosting features were identified within the Proposed Wind Farm site, and no caves, underground structures or SACs designated for lesser horseshoe bat occur within 10 km of the Site.

	The Proposed Grid Connection follows existing road corridors and does not require tree removal. Watercourse crossing structures along the route were assessed as having *None* to *Moderate* roosting potential (Appendix 6-2); however, no bat roosts or evidence of bat use were recorded during inspections. As the proposed works will not modify these structures, no loss of roosting habitat is anticipated along the Proposed Grid Connection. One additional watercourse crossing associated with the internal 33kV cabling within the Proposed Wind Farm site was also assessed and was found to have *Negligible* roosting potential, with no evidence of bat use recorded; no works are proposed at this structure and no impacts on roosting habitat are anticipated. Turbine Delivery Route (TDR) accommodation works will involve vegetation trimming only. No trees or features with PRFs were identified along the TDR. Accordingly, no roost loss or damage is predicted in association with the TDR. **Disturbance or Displacement of Individuals or Populations** The Proposed Project is primarily located within conifer plantation, wet heath and improved agricultural grassland, with smaller areas of blanket bog, dry heath, dry humid acid grassland, immature woodland and limited linear features. No identified roosting habitat will be lost, and key linear and edge features that facilitate commuting and foraging, such as hedgerows, treelines, forestry edges and watercourses, will be retained. A proportion of edge habitat will also be enhanced through the implementation of the Biodiversity Management and Enhancement Plan. No structural works are required at bridge or culvert crossings along the Proposed Grid Connection route, and temporary excavations associated with launch and receiver pits for HDD works will be set back from these structures. As the crossings experience existing traffic-related noise and vibration, any additional potential disturbance arising from HDD drilling is unlikely to exceed baseline conditions to which any roosting bats in the vicinity would already be habituated. The short-term duration of these works, combined with spatial separation from suitable bat habitats, ensures that potential noise and vibration effects will be minimal and are unlikely to result in significant disturbance to bats.
Assessment of Significance prior to mitigation	**Loss or damage to commuting and foraging habitat** Given the extensive area of habitat that will remain undisturbed throughout the Site and the avoidance of the most significant areas of faunal habitat (i.e. mature treelines, linear conifer edge habitats and hedgerows), no significant effects with regard to loss of commuting and foraging habitat for any bat species are anticipated. **Loss of, or damage to, roosts** Given the absence of confirmed roosts within the Proposed Wind Farm site, the Proposed Grid Connection and the TDR, and the very limited roosting potential of features within these areas, no significant effects relating to the loss of, or damage to, roosting habitat for any bat species, including lesser horseshoe bat, are anticipated as a result of the Proposed Project. **Disturbance or Displacement of Individuals or Populations** The Proposed Project is predominantly located within conifer plantation, wet heath and agricultural grassland. There will be no net loss of linear landscape features for commuting and foraging bats and there will be no loss of any roosting site of ecological significance. The habitats on the Site will remain suitable for bats and no significant displacement of individuals or populations is anticipated.
Mitigation	**Loss or damage to commuting and foraging habitat** The BMEP includes the establishment of 0.54 ha of native woodland within the Site, resulting in a net gain in native habitat and an improvement in the quality of edge

	habitat available to bats. As such, no significant effects on the availability of commuting and foraging habitat are expected. **Loss of, or damage to, roosts** No potential for significant effect regarding the loss or disturbance of roosting habitat within the Proposed Wind Farm site or Proposed Grid Connection is anticipated and no mitigation is required. **Lighting** With regard to any lighting required for construction of the Proposed Project, the Applicant commits to using lighting during construction only where necessary, in line with the updated Dark Sky Ireland Lighting Principles: › All lighting will be justified and used only when required. › Warm colour temperatures will be used to minimise impacts on wildlife and the night sky. › Glare and brightness will be minimised to protect visual comfort. › Luminaires will be angled downward with appropriate beam control to avoid over-lighting. › Lower mounting heights will be used where possible to better contain light. › Lighting will incorporate timers, dimmers, or PIR sensors to reduce energy use and emissions. › Natural areas such as trees, waterbodies, and nesting habitats will not be illuminated.
Residual Effect following Mitigation	Following the implementation of mitigation, there is no potential for residual significant effect on bats.

6.4.2.2.2 Assessment of Potential Effects on Badger

Table 6-15 Assessment of Potential Effects on Badger During the Construction Phase

Description of Effect	**Habitat Loss/Fragmentation** No badger setts or signs of badgers were recorded within the Site, as described in **Section 6.4.4.1** above. Therefore, there will be no loss of badger sett habitat. Given the nature of the Proposed Wind Farm, there will be some loss of suitable badger foraging habitat i.e., agricultural grassland (GA1)/ conifer plantation (WD4), associated with the footprint of the Proposed Wind Farm infrastructure as described in **Table 6-10** above. However, this habitat loss will not be significant in the context of the widespread alternative foraging habitat available with the Proposed Wind Farm site and the wider area.
	Disturbance There is a potential for badger setts to be created during the interim between baseline ecological surveying and commencement of construction. Noise and earth movement during construction works have the potential to disturb badgers occupying setts in close proximity to Proposed Wind Farm infrastructure during construction. Badger tunnel systems can extend some distance from sett entrances (over 20m in some cases[32]) and therefore any excavation by heavy machinery in close proximity to sett entrances risks causing damage to setts and/or direct harm to badgers in the absence of mitigation. In the event that a badger sett is established within or near the footprint of the Proposed Wind Farm during the interim between baseline ecological surveys and commencement of construction, there is potential for disturbance to badger using the setts as a result of noise during construction works.
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 Given that no setts have been identified, no potential for physical damage or disturbance of setts has been identified and no potential for significant effect is anticipated. However, precautionary mitigation is provided.
Mitigation	**Habitat Loss/Fragmentation** No specific mitigation is required for the avoidance of habitat loss.
	Disturbance/Displacement Due to time that can elapse between the original surveys, any future planning consent and construction, a pre-construction badger survey will be carried out in order to assess activity levels at setts and to identify any sett entrances that may have been established in the intervening period. All setts within 50m of the Proposed Wind Farm infrastructure will subsequently be monitored for a minimum period of 2 weeks using remote cameras in order to ascertain use by badgers and levels of activity. All badger survey work will be undertaken in line with current best practice guidance. › A confirmatory survey for badger will be carried out by an appropriately qualified ecologist no more than 10 months in advance of commencement of construction. The requirement for a confirmatory survey does not represent a lacuna in the survey assessment but is fully in line with industry best practice. The function of this survey

[32] *Transport Infrastructure Ireland (2006) Guidelines for the treatment of badgers prior to the construction of National Road Schemes.*

	will be to assess any changes in baseline environment since the time of undertaking the baseline surveys. › If a sett is found within 50m of the Proposed Project, further monitoring and mitigation in line with TII guidelines, and in consultation with the NPWS will be prescribed as appropriate.
Residual Effect following Mitigation	With the above mitigation in place, there is no potential for significant residual effect to badger.

6.4.2.2.3 *Assessment of Potential Effects on Otter*

Table 6-16 Assessment of Potential Impacts on otter During the Construction Phase

Description of Effect	Potential for effects on otter has been considered with regard to NPWS '*Threat Response Plan*'[33] (TRP) which identifies four significant threats facing otter in an Irish context: habitat destruction, water pollution, disturbance (recreational sources) and accidental death/persecution. No otter holts were found within 150m of the Proposed Project during the dedicated surveys undertaken, as described in **Section 6.4.4.2** above. However, Otter signs in the form of spraints were found at survey site WF 18, indicating that otter actively utilise the Gortnacowly (a tributary of the Mealagh River). Given the high fisheries potential and good connectivity of other watercourses within the vicinity of the Proposed Wind Farm, it is very likely that otter actively utilise these watercourses for commuting and foraging. Within the Proposed Wind Farm site, there are a total of 5 no. watercourse new crossing locations over natural watercourses (rivers and streams). The crossing locations are outlined below: › A new crossing is proposed over the Owngar River for the 33kV cabling; › A new crossing on the proposed access road to turbine T4; › A new crossing on the proposed access road between turbines T11 and T12; › A new crossing on the proposed access road to turbine T13; and, › A new crossing on the proposed access road between the proposed 110kV onsite substation and turbine T10. Within the Proposed Wind Farm site, there are a total of 3 no. existing watercourse culvert crossing location that will require upgrading. The crossing locations are outlined below: › 3 no. existing culverts along the forestry road between the proposed 110kV onsite substation and proposed turbine location T10. Proposed new watercourse crossing within the Farm Site will comprise clear span watercourse crossings. The installation of the Proposed Grid Connection route within the existing public road network crosses over some existing water crossings. In relation to disturbance, otter are predominantly crepuscular in nature and it is anticipated that construction activity associated with the Proposed Grid Connection route will be confined to daytime hours, thus minimizing potential disturbance related impacts to the species. It is assumed that otter may occur within and near the Proposed Project on occasion, particularly the lower reaches of the main watercourses downstream of the Proposed Grid Connection route. There is potential for the construction activity to result in the run-off of silt and other pollutants such as hydrocarbons and cementitious material into watercourses downstream of the Proposed Grid Connection. This represents a potential indirect effect on otter in the form of habitat degradation through water pollution.

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

Assessment of Significance prior to mitigation	Taking a precautionary approach, the construction of new watercourse crossings has the potential to be a temporary significant effect to otter in the area as a result of disturbance. given the clear span design of the proposed new crossings, there is no potential for introduction of barrier to movement. In the absence of mitigation, the indirect effect of water pollution on otter during construction has the potential be a temporary significant effect.
Mitigation	**Chapter 4** of this EIAR describes the installation options for the Proposed Grid Connection route. A total of 11 existing watercourse crossings will be traversed along the Proposed Grid Connection. Instream works are not required at any watercourse crossing along the Proposed Grid Connection. Watercourses will not be directly impacted upon since no instream works are proposed. The following mitigations will be in place with regard to construction works within the Proposed Wind Farm: › A pre-commencement survey for otter will be undertaken within 150m upstream and downstream of the proposed new 4.no new watercourse crossings, and 3.no existing watercourse crossings that require upgrading within the Proposed Wind Farm site in advance of commencement of works in order to confirm whether the baseline survey conditions remain the same. › If a holt is found within 150m of construction areas, the works will be undertaken in line with TII guidelines 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. › The watercourse crossings within the Proposed Wind Farm site will comprise clear span watercourse crossings and will therefore avoid any loss of riverbed or riverbank habitat. › Specific mitigation is provided in relation to water quality in Chapter 9: Hydrology and Hydrogeology of this EIAR and is summarised in **Sections 6.4.2.1.1** above.
Residual Effect following Mitigation	Following the implementation of mitigation, there is no potential for residual significant effect on otter.

6.4.2.2.4 Assessment of Potential Effects on Kerry Slug

Table 6-17 Assessment of Potential Impacts on Kerry Slug During the Construction Phase

Description of Effect	This species occurs in two main natural habitats in Ireland: woodland, and blanket bog/wet heathland (NPWS 2025). In studies by Reich et al. (2012), it has been shown that Kerry Slug can also be abundant in conifer plantation. The majority of the Proposed Wind Farm is dominated by conifer plantation (WD4), with some recently felled woodland (WS5), and wet heath (HH3) (**Figure 6-4, Figure 6-5** and **Figure 6-6**). As such, there is likely supporting feeding habitat or suitable refugia for this species within the Proposed Wind Farm. Consequently, the potential for habitat loss and mortality related effects relate to areas where new development is proposed within these suitable habitat types. **Habitat Loss/Fragmentation** Hand searches confirmed the presence of Kerry slug at one location within the Proposed Wind Farm, within an area of recently felled woodland (WS5) to the south of Proposed Wind Farm as described in **Section 6.3.8.4.** Further, Kerry Slug is known to occur within the Site as per NBDC records, as described in **Section 6.3.1.8** above. Conifer plantation, recently felled conifer, wet heath provides suitable foraging and breeding habitat for this species. The Proposed Project will result in the loss of 44ha of Conifer Plantation (WD4)/Recently Felled Woodland (WS5) (**Refer to Table 6-10** and approximately 2.02ha of degraded Wet Heath (HH3) (Refer to **Section 6.3.9** and **Section 6.4.2.1.1** above) **Disturbance/Mortality** The Site provides suitable foraging and breeding habitat for Kerry Slug, a species known to be present on site. Tree felling works and habitat removal associated with the Proposed Project have the potential to disturb or result in mortality of Kerry Slug during construction works.
Assessment of Significance prior to mitigation	**Habitat Loss/Fragmentation** The loss of habitats associated with the Proposed Wind Farm (i.e conifer plantation and degraded wet heath), has the potential to displace individual animals to other suitable habitat in close proximity to the works areas. Given the wide availability of suitable habitat for the species throughout the Proposed Wind Farm site and throughout the wider area, this is considered to be a permanent, but not significant, effect. **Disturbance/Mortality** Given the known presence of Kerry Slug within the Site, in the absence of mitigation, there is potential for a temporary significant effect on the local Kerry Slug population as a result of disturbance/ mortality.
Mitigation	**Habitat Loss/Fragmentation** Whilst no significant effects are anticipated on Kerry Slug as a result of habitat loss/fragmentation, the loss of 2.02ha of degraded Wet Heath habitat will be offset through the BMEP (**Appendix 6-4**). It is proposed to fell an area 5.3ha of young conifer plantation in the northern section of the Proposed Wind Farm site, in areas where Wet Heath (HH3) habitat previously existed. The restoration efforts will restore the formerly occurring Annex I habitat to these areas. A Monitoring Plan to ensure success of the proposed measures are also provided in the BMEP. Given the provisions of the BMEP, there will be an increase in supporting habitat for Kerry Slug within the Site. **Disturbance/Mortality**

In order to prevent direct mortality of Kerry Slug during the construction phase of the Proposed Project, localised translocation of individual Kerry Slugs will be undertaken to remove individuals from the working areas. In order to undertake this work, a Kerry slug derogation licence (KSDL) has been granted from the National Parks and Wildlife Service (NPWS) and is available in **Appendix 6-5.**

The following measures will be implemented **prior to the commencement** of construction:

- Known locations of Kerry Slug identified from the pre-commencement survey efforts will be marked off by an appointed qualified/licenced ecologist. This will help avoid inadvertent encroachment of machinery into known Kerry Slug habitat.
- Pre-commencement surveys in advance of any works will be carried out in areas of suitable Kerry Slug habitat under licence within the Proposed Wind Farm footprint by the qualified licenced ecologist. These will be carried out on a section-by-section basis as the construction works progress within the Proposed Wind Farm
- Slugs recorded during surveys will be translocated to similar suitable nearby habitat e.g. if found in conifer plantation then moved to adjacent conifer plantation. These sites will be subject to approval by the NPWS as part of their approval process for the translocation licence. Please note that this licence has already been obtained and is included in Appendix 6-5.

The following mitigation measures will be implemented **during construction**:

- The extent of the Proposed Project footprint will be clearly marked to prevent any inadvertent encroachment on Kerry Slug habitat where it is located adjacent to the works areas.
- Where felling is required, tree stumps will be left in place where possible to provide suitable habitat for Kerry slug. Turves and boulders/ exposed rock will be stored adjacent to the permitted development footprint where practicable before reinstatement o maintain/create suitable habitat for the species in the vicinity of the works during construction.
- Should Kerry slugs be found in the works areas during the construction phase they will be relocated by the appointed qualified/licenced ecologist to suitable habitat as described above.

Habitat management and enhancement

The following enhancements for Kerry Slug specifically will be undertaken, as described in fully in the **BMEP (Appendix 6-4):**

- Tree stumps resulting from the felling of forestry will be left in situ to decay to provide suitable habitat for Kerry Slug.
- Rock outcrops, boulders and stonewalls will be retained where possible or, if removal can't be avoided, they will be replaced to enhance the value of the habitat surrounding the windfarm infrastructure.
-
    - **Monitoring programme**

- The Kerry Slug population on the Site will be monitored to assess the success of the above enhancement measures and provide data on Kerry Slug in the area. Monitoring of Kerry Slug in the areas adjacent to the site works will be undertaken to provide a before and after impact assessment. This will ensure that populations remain stable post-construction. These surveys will be carried out during optimal weather conditions (mild, damp, overcast and not excessively windy) by suitably qualified professionals. They will follow McDonnell & Gormally (2011) and involve both hand searching and metric refuge trapping and will be carried out within the same locations as the search and translocation areas.
- An EU Returns Form and a derogation report will be completed by the Applicant and returned to Wildlife Licencing Unit of the NPWS, detailing the results of the monitoring efforts, and search and translocation works, and address any corrective

	measures that might have been employed in the unlikely event of unforeseen circumstances. The BMEP in **Appendix 6-4** provides details on the locations for Kerry Slug enhancement, which are within the felling buffers of the proposed turbines.
Residual Effect following Mitigation	Following the incorporation of the above avoidance and mitigation measures, no significant negative effects to Kerry Slug are anticipated at any geographic scale.

6.4.2.2.5 *Assessment of Potential Effects on Pine Marten and Red Squirrel*

Table 6-18 Assessment of Potential Impacts on Pine marten and Kerry Slug During the Construction Phase

Description of Effect	During the ecological surveys undertaken of the Proposed Project, no pine marten dens or red squirrel dreys were found. However, the Site provides potential supporting habitat for Pine Marten and Red Squirrel in the form of conifer plantation. Further, these species are known to occur within the hectads W05, W15, W25 in which the Proposed Project is located, as described in **Section 6.3.1.5 and 6.3.1.6** above. No direct impacts to these species via habitat loss or mortality are anticipated. However, taking a precautionary approach, there is potential for red squirrel within the Site to build new dreys in the Site during the interim between the grant of planning and construction phase. There is potential for pine marten to create dens within the Site. Therefore, it is considered there is a potential for disturbance to these species as a result of construction works. There is no potential for significant loss of pine marten or red squirrel foraging habitat or barriers to movement as a result of the Proposed Project, due to the nature of the habitats being lost for the Proposed Project and lack of structures which could cause a barrier to movement.
Assessment of Significance prior to mitigation	No red squirrel dreys or pine marten dens were found within the Site and no significant effects to these species are predicted. However, taking a precautionary approach, the potential for disturbance to these species during construction works is considered and mitigation is provided below.
Mitigation	Prior to the commencement of construction works, the following measures will be undertaken for the avoidance of disturbance and to ensure no dreys or dens have been established since the original surveys undertaken. The following measures are in line with Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (TII 2009). › From a precautionary basis, a pre-commencement survey will be undertaken by a qualified ecologist in accordance with standard best practice guidance prior to the commencement of site works to ensure that no red squirrel dreys or pine marten dens are present within or in close proximity to Proposed Project infrastructure footprint. › In the event that a red squirrel drey or pine marten den is identified within the Proposed Project footprint during pre-commencement surveys, further surveys will be undertaken to ascertain whether the drey/den is in use. A Species Protection Plan as agreed by the project ecologist will be put in place in advance of felling works.
Residual Effect following Mitigation	Following the implementation of the mitigation proposed above, there will be no significant residual effect on pine marten or red squirrel as a result of the Proposed Project at any geographic scale.

6.4.3 Likely Significant Effects During Operational Phase

Within this section, the assessment of effects will consider the Proposed Project i.e. both the Proposed Wind Farm and the Proposed Grid Connection as a whole, where possible. Where the Proposed Wind Farm and the Proposed Grid Connection are required to be considered separately, this is identified within the assessment.

6.4.3.1 Effects on Habitats during Operation

6.4.3.1.1 *Effects on surface watercourses during operation*

Table 6-19 Assessment of potential effects on groundwater dependant habitats and surface watercourses during operation

Description of Effect	This section assesses the potential for likely significant effects on aquatic receptors including aquatic habitats (i.e., watercourses), aquatic fauna is also assessed including freshwater pearl mussel, salmon, trout, European eel, otter and other aquatic species identified during the desk study and dedicated aquatic surveys and likely to occur downstream of the Site. The following impact assessment is based on Section 9.5.3 and Section 9.5.4, Chapter 9: Water and is summarised here in the context of ecology. Hardstand emplacement will only be required at the Proposed Wind Farm site and not the Proposed Grid Connection. Only the Proposed Wind Farm is assessed herein. The water balance does not include the Proposed Grid Connection cable route as it follows public roads and therefore the underground cabling cannot alter the hydrological regime along the route which is already a hardstand surface. <u>Proposed Wind Farm site</u> **Increased hardstanding/run-off impacts:** Progressive replacement of the vegetated surface with impermeable surfaces will decrease the permeability of the ground within the Site footprint (i.e., turbine bases, temporary construction compounds, hardstandings, and to a lesser extent the new access roads) and the proposed 110kV onsite substation. The emplacement of the Proposed Project footprint, as described in Chapter 4 of the EIAR, (assuming emplacement of impermeable materials as a worst-case scenario) could result in an average total site increase in surface water runoff of approximately 5,021m3/month or 162 m3/day. This represents a potential increase of approximately 0.34% in the average daily/monthly volume of runoff from the Proposed Wind Farm site in comparison to the baseline pre-development site runoff conditions. This is a very small increase in average runoff and results from a relatively small area of the overall Proposed Wind Farm site being developed. The additional volume is low due to the fact that the runoff potential from the Proposed Wind Farm site is naturally high (87%). Also, this calculation assumes that all hardstanding areas will be impermeable which considered to be a worst-case scenario. The increase in runoff from most of the development catchment will therefore be imperceptible and this is before mitigation measures will be put in place. This water balance assessment demonstrates that even in the absence of mitigation, the potential to alter the water balance of the Site or downstream hydrology/morphology is imperceptible. **Contamination from run-off:**

	Site runoff will potentially occur at both the Proposed Wind Farm site and Proposed Grid Connection. Both are assessed herein. During the operational phase, the potential for silt-laden runoff is much reduced compared to the construction phase. In addition, all permanent drainage controls will be in place and the disturbance of ground and excavation works will be complete. Some minor maintenance works are likely to be completed, such as maintenance of site entrances, internal roads and hardstand areas. These works will be of a very minor scale and will be very infrequent. Potential sources of sediment laden water will only arise from surface water runoff from small areas where new material is added during maintenance works. These minor activities could, however, result in the release of suspended solids to surface water and could result in an increase in the suspended sediment load, resulting in increased turbidity which in turn could affect the water quality and fish stocks of downstream water bodies. Potential effects could be significant if not mitigated against. During such maintenance works there is a low risk associated with release of hydrocarbons from site vehicles, although it is not envisaged that any significant refuelling works will be undertaken on site during the operational phase.
Assessment of Significance prior to mitigation	Significant effects on water quality are not anticipated at any geographic scale during the operation of the Proposed Project.
Mitigation	Two distinct methods will be employed to manage drainage water within the Proposed Project. The first being 'keeping clean water clean' and the second involving the collection of any drainage waters from work area and to route them towards stilling ponds prior to controlled diffuse release over vegetated surfaces. The second method relates to proposed design measures that will prevent road surface and other hardstand areas acting as preferential flowpaths. All development site runoff will be collected, attenuated, treated and then released in a diffuse and regular manner that does not significantly change the natural drainage regime/hydrology of the Site. The operational phase drainage system of the Proposed Project will be installed and constructed in conjunction with the road and hardstanding construction work as described below and as shown on the drainage drawings (**Appendix 4-4**) submitted with this planning application: › Interceptor drains will be maintained up-gradient of all proposed infrastructure to collect clean surface runoff, in order to minimise the amount of runoff reaching areas where suspended sediment could become entrained. It will then be directed to areas where it will be re-distributed over the ground by means of a level spreader; › Swales/road side drains will be used to collect runoff from access roads and turbine hardstanding areas of the Site, likely to have entrained suspended sediment, and channel it to settlement ponds for sediment settling; › On steep sections of access road transverse drains ('grips') will be constructed in the surface layer of the road to divert any runoff off the road into swales/road side drains; › Check dams will be used along sections of access road drains to intercept silts at source. Check dams will be constructed from a 4/40mm non-friable crushed rock; › Settlement ponds, emplaced downstream of road swale sections and at turbine locations, will buffer volumes of runoff discharging from the drainage system during periods of high rainfall, by retaining water until the storm hydrograph has receded, thus reducing the hydraulic loading to watercourses; and, › Settlement ponds will be designed in consideration of the greenfield runoff rate.

Residual Effect following Mitigation	**Proposed Wind Farm** No potential for residual significant effect on aquatic habitats or species as a result of operation of the Proposed Wind Farm is predicted. **Proposed Grid Connection** No potential for residual significant effect on aquatic habitats or species as a result of operation of the Proposed Grid Connection is predicted.

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 identified as KERs during the operational phase.

6.4.3.2.1 *Assessment of Potential Effects on Bats during Operation*

Table 6-20 Assessment of Potential Effects on Bats

Description of Effect	A full impact assessment for bats is provided in the Bat Report in **Appendix 6-2** and summarised below. As per NatureScot Guidance, wind farms present four potential risks to bats: › Collision mortality, barotrauma and other injuries; › Loss or damage to commuting and foraging habitat; › Loss of, or damage to, roosts; and › Displacement of individuals or populations. No effects in relation to 1) Loss or damage to commuting and foraging habitat; 2) Loss of, or damage to, roosts; and 3) Displacement of individuals or populations is anticipated as a result of the operation of the development. **Collision mortality, barotrauma and other injuries.** 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 › Lesser horseshoe bat Overall activity levels for brown long-eared bat, Lesser horseshoe bat and *Myotis* spp. were Low across all seasons except for Low to Moderate activity for brown long-eared bat in autumn. No High median activity was recorded for any of these species. Although Moderate activity was detected for brown long-eared bat at D01, D02 and D09 in autumn, and for *Myotis* spp. at D02 and D08 in summer and at D01 in autumn, the overall levels of activity recorded throughout the 2024 surveys remained Low. On this basis, significant collision-related effects for these low-risk species are not anticipated. The following high-risk species were recorded during the dedicated surveys (Refer to **Appendix 6-2** for full details): › Leisler's bat, › Common pipistrelle › Soprano pipistrelle › Nathusius' pipistrelle Site-level collision risk for high collision risk bat species was typically Low. Overall bat activity levels were typical of the nature of the Site, which is dominated by conifer plantation, wet heath, and improved agricultural grassland with smaller areas of blanket bog, dry heath, dry humid acid grassland, immature woodland and sparse linear features such as hedgerows and treelines.
Assessment of Significance prior to mitigation	Following the precautionary principle and given that high collision risk species were recorded within the Proposed Wind Farm site, there is potential for the operation of the Proposed Wind Farm to result in long-term significant effects on the local bat population during operation of the Proposed Wind Farm.

Mitigation	Detailed mitigation measures in relation to bats is provided in **Section 6** of the Bat Report in **Appendix 6-2** and summarised below. Mitigation measures are proposed together with post-construction monitoring: › Introduce felling buffers around turbines › Implement blade feathering as a standard › Lighting and noise restrictions › Implement curtailment as required on proposed turbines which recorded high median activity levels › A minimum of three years operational monitoring 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 In addition, as per **Section 6.2** of the Bat Report, an adaptive bat monitoring plan will be implemented for three years post construction, to assess the ongoing health on local population of bats within the Site.
Residual Effect following Mitigation	Following the implementation of the monitoring and mitigation described above, there is no potential for significant residual effects on bat species.

6.4.4 Likely Significant Effects During Decommissioning Phase

Decommissioning is fully described in **Section 4.12** of **Chapter 4** and in **Appendix 4-6** Decommissioning Plan. There will be no additional habitat loss associated with the decommissioning of the Proposed Wind Farm and therefore there will be no significant effects in this regard.

The wind turbines proposed as part of the Proposed Wind Farm 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 Wind Farm site may be decommissioned fully.

Upon decommissioning of the Proposed Wind Farm site, the wind turbines 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. The turbine components will be separated and removed offsite. The turbine materials will be transferred to a suitable recycling or recovery facility. Leaving the turbine foundations in-situ is considered a more environmentally prudent option, as to remove that volume of reinforced concrete from the ground could result in unnecessary environment emissions such as noise, dust and/or vibration.

The underground electrical cabling connecting the turbines to the proposed 110kV onsite 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.

Site roadways could be in use for purposes other than the operation of the Proposed Project by the time the decommissioning of the Proposed Wind Farm site is to be considered, and therefore it may be more appropriate to leave the Site roads in situ for future use. It is envisaged that the roads will serve as agricultural roads for local landowners.

The Proposed Grid Connection and proposed 110kV onsite substation will remain in place as it will be under the ownership and control of the ESB and EirGrid.

A Decommissioning Plan has been prepared (**Appendix 4-6**) the detail of which will be agreed with the local authority prior to any decommissioning. 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. The potential for effects during the decommissioning phase of the Proposed Project has been fully assessed in the EIAR.

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 Project, 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 applicable to 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 Likely Significant Effects on Designated Sites

6.4.5.1 European Designated Sites

The Proposed Wind Farm site is located completely outside of the boundary of any European Site. However, a potential for indirect likely significant effect was identified on the following European Sites:

- River Bandon SAC [002171]
- Mullaghanish to Musheramore Mountains SPA [004162]

In relation to European sites, an AA Screening Report and NIS have been prepared to provide the competent authorities with the information necessary to complete an AA Screening 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 provides a summary of the key assessment findings with regard to SACs and SPAs.

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 would be likely to have a significant effect on the following European Sites:

- *River Bandon SAC [002171]*
- *Mullaghanish to Musheramore Mountains SPA [004162]*

As a result, an Appropriate Assessment is required, and a Natura Impact Statement has been prepared in respect of the Proposed Project.

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 pNHA was identified to be within the Likely Zone of Influence of the Proposed Project as it has downstream surface water connectivity to the Site. A potential for temporary, significant effect via water quality deterioration during construction was identified:

- Bandon Valley South of Dunmanway pNHA [001035]

With the implementation of the mitigations and best practice procedures as described in **Sections 6.4.2 to 6.4.4,** which aim to negate potential impacts from deterioration of surface water quality, as well as

those in Chapter 9 (Hydrology & Hydrogeology) and in the CEMP (**Appendix 4-3**), no potential for residual significant effects on this National Site is anticipated.

6.5 Cumulative Impact Assessment

The Proposed Project was considered in combination with other plans and projects in the area that could result in cumulative impacts on the Key Ecological Receptors (KERs) identified in **Table 6-9** of this report, including European and Nationally Designated Sites. 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 projects considered are listed in Appendix 2-3 of Chapter 2 (Background) of this EIAR. The full list of projects has been considered and relevant ones from this list are discussed in this section.

6.5.1 Assessments 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 ZOI 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. In addition, **Section 6.5.3** concludes on their potential for impact on biodiversity.

Table 6-21 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 6-21 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)	**Proposed Wind Farm** 10km from the Proposed Wind Farm **Proposed Grid Connection** 250m from the Proposed Grid Connection	A 10km buffer of the Site is used as is recommended for the desktop study and cumulative assessment by NatureScot Guidelines 2021 in relation to bats (Section 4). Given the nature and scale of the Proposed Grid Connection, the geographical boundary for terrestrial ecological aspects is 250m from the Proposed Grid Connection. In addition, in relation to aquatic habitats and species, the cumulative assessment boundary for hydrological impacts has also been considered, as described below.
Water	**Proposed Wind Farm:** Catchment 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 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). The Water Study Area for assessing the potential zone of impact and cumulative effects assessment is the Owvane River and Mealagh River catchments, which contains the Proposed Wind Farm site along with a short section of the Proposed

	Proposed Grid Connection Route: Within a 250m buffer zone of the Proposed Grid Connection Route.	Grid Connection route. The Bandon River catchment only contains the Proposed Grid Connection cable route.

6.5.1.1 Other Wind Farm Projects

For the purposes of this cumulative assessment, Wind Farms within a 10-kilometre radius of the Proposed Project area are listed below in Table 6-22 below. In total, 8 no. applications relating to wind energy were identified within 10km of the Proposed Wind Farm site. Each project is considered in further detail in the sections below. Given the small scale and limited impact of single / domestic turbines, no potential for significant cumulative effect is predicted in relation to such developments.

Table 6-22 Wind Farm Projects Within 10km of the Proposed Project

County	Wind Farm	Planning Status	Number of Turbines	Separation Distance (turbine to turbine)
Cork	Gortloughra Wind Farm	Proposed	8	1.9km
Cork	Shehy More Wind Farm	Existing	11	2.6km
Cork	Dereenacreenig West Wind Farm	Proposed	3	3.6km
Cork	Curaglass Wind Farm	Proposed	3	4km
Cork	Milane Hill Wind Farm	Existing	9	8.7km
Cork	Carrigarierk Wind Farm	Existing	5	8.9km
Cork	Carrigarierk Extension Wind Farm	Permitted	3	9.4km
Kerry	Grousemount Wind Farm	Existing	38	10km

Gortloughra Wind Farm

Gortloughra Wind Farm is a wind farm consisting of 8 no. turbines and is approx. 1.9km from the Site. The Gortloughra wind farm has already been refused by Cork County Council and is currently under appeal with ACP. Both the EIAR and the NIS for the Gortloughra Wind Farm project were reviewed as part of this assessment. The EIAR identifies the following as KERs- Montane heath, wet heath, blanket bog, otter, bats, badger, freshwater pearl mussel etc. These reports identified potential for

significant effects on downstream water aquatic receptors (reduction in water quality from release of suspended solids and/or other pollutants into the surface water system).

As such, the potential for in-combination effects with the Proposed Project specifically in relation to aquatic receptors and designated sites were initially identified (construction related impacts on water quality). However, with the implementation of mitigation measures outlined within this EIAR and the mitigation measures outlined within the EIAR for the Gortloughra Wind Farm, no potential for significant cumulative effects were identified.

Shehy More Wind Farm

Shehy More Wind Farm is an existing wind farm consisting of 11 no. turbines and is approx. 2.6 km from the Site. The EIAR for the Shehy More Wind Farm project were reviewed as part of this assessment. The EIAR identified that there will be a loss of 0.84 hectares of annexed habitat (upland blanket bog, wet and dry siliceous heath) as a result of the construction of Shehy More Wind Farm. Five bat species, and Kerry slug were also recorded within the Shehy More Wind Farm site. Further, a potential pathway for significant effects on downstream watercourses during construction was identified.

As such, the potential for in-combination effects with the Proposed Project specifically in relation to peatland habitats, Kerry slug and bat species, and water deterioration on downstream watercourses was considered in this assessment. However, with the implementation of mitigation measures outlined within this EIAR, including the enhancement measures outlined in the **BMEP Appendix 6-4**, and the mitigation measures outlined within the EIAR for the Shehy More Wind Farm, no potential for significant cumulative effects were identified. Additionally, the Shehy More Wind Farm has already been constructed and as such there is no potential for cumulative effects with the Proposed Project. No potential for significant cumulative effects given the projects will not be constructed at the same time.

Dreenacreenig West Wind Farm

Dreenacreenig West Wind Farm is a proposed wind farm seeking 3 no. turbines and is approx. 3.6 km from the Site. The wind farm is partially constructed with the following permission lapsed/expired:

Development to comprise of seven (7) electricity generating wind turbines with a hub height of 55 metres and a rotor diameter of 52 metres, an Electrical Compound, Sub-Station Building, Four Car Parking Spaces, associated site roads and site works; it is proposed to source stone from an on site borrow pit.

The site of this wind farm is subject to a planning application for a 3 no. turbine, 119.3m tip height wind farm development submitted to Cork County Council in September 2025 (Cork CC Ref. 25/6052)

Curraglass Wind Farm

Curraglass Wind Farm is a Proposed Wind Farm consisting of 3 no. turbines and is approx. 3.6km from the Site. Both the EIAR and the NIS for the Curraglass Wind Farm project were reviewed as part of this assessment. The EIAR identifies the following as KERs- wet heath, blanket bog, otter, bats, Kerry slug etc. These reports identified potential for significant effects on downstream water aquatic receptors (reduction in water quality from release of suspended solids and/or other pollutants into the surface water system).

As such, the potential for in-combination effects with the Proposed Project specifically in relation to peatland habitats, Kerry slug and bat species, and water deterioration on downstream watercourses was considered in this assessment. However, with the implementation of mitigation measures outlined within this EIAR and the mitigation measures outlined within the EIAR for the Curraglass Wind Farm, including the avoidance of all blanket bog habitat, Kerry slug enhancement measures, bat monitoring and measures to protect water quality etc, no potential for significant cumulative effects were identified.

Milane Hill Wind Farm

Millane Hill Wind Farm is an existing wind farm consisting of 9 no. turbines and is approx. 8.7 km from the Site. As per the assessment of residual effects from the proposed Millane Hill Wind Farm , there is no potential for significant effects, in the absence of mitigation, on downstream watercourses during construction. Further, Millane Hill Wind Farm is located predominantly on areas of grassland habitat. Additionally, the Millane Hill Wind Farm has already been constructed. As such there is no potential for cumulative effects with the Proposed Project.

Carrigarierk Wind Farm

Carrigarierk Wind Farm is an existing wind farm consisting of 5 no. turbines and is approx. 8.9 km from the Site. The EIAR for Carrigarierk Wind Farm was reviewed as part of this assessment. The majority of the Carrigarierk Wind Farm was constructed on conifer plantation. Other habitats recorded include dry heath, scrub and improved agricultural grassland. Further, bat species, including lesser horseshoe bat were recorded on site.

As such, the potential for in-combination effects with the Proposed Project specifically in relation to peatland habitats and bat species, designated sites and water deterioration on downstream watercourses was considered in this assessment. However, with the implementation of mitigation measures outlined within this EIAR and the mitigation measures outlined within the EIAR for Carrigarierk Wind Farm, including rehabilitation of 0.5ha of heath, bat monitoring and measures to protect water quality etc, no potential for significant cumulative effects were identified. Additionally, the Carrigarierk Wind Farm has already been constructed and as such there is no potential for cumulative effects with the Proposed Project.

Carrigarierk Extension Wind Farm

Carrigarierk Extension Wind Farm is a permitted wind farm consisting of 3 no. turbines and is approx. 9.4 km from the Site. The EIAR for the Carrigarierk Extension Wind Farm was reviewed as part of this assessment. The EIAR identifies the following as KERs- Kerry slug, otter, bats and aquatic habitats. These reports identified potential for significant effects on downstream water aquatic receptors (reduction in water quality from release of suspended solids and/or other pollutants into the surface water system).

As such, the potential for in-combination effects with the Proposed Project specifically in relation to aquatic receptors and designated sites were initially identified (construction related impacts on water quality). However, with the implementation of mitigation measures outlined within this EIAR and the mitigation measures outlined within the EIAR for the Carrigarierk Extension Wind Farm, no potential for significant cumulative effects were identified.

Grousemount Wind Farm

Grousemount Wind Farm is an existing wind farm consisting of 38 no. turbines and is and is approx. 10km from the Site. As per the assessment of residual effects from the proposed Grousemount Wind Farm, there is no potential for significant effects on downstream watercourses during construction (in the absence of mitigation). Additionally, The Grousemount wind farm has already been constructed.

As such there is no potential for cumulative effects with the Proposed Project. No potential for significant cumulative effects given the projects will not be constructed at the same time. Furthermore, the EIAR identified no potential for residual significant effects during operation, and therefore, no potential for significant operational cumulative effects exists either.

6.5.1.2 Other Projects

A number of other large-scale projects (excluding wind farms) were identified within 10km of the Proposed Project. These included the following:

- Remove c.9.5km of overhead line (OHL) relating to the existing windfarm grid connection works. Develop the full length of a new grid connection over c.14.8km, using a combination of OHL (c.9.8km) and underground cables (c.4km) & ancillary works. The Electricity Supply Board (ESB). Various townlands between Dereenacreenig West Windfarm and the existing ESB substation at Ballylicky, County Cork (Planning Ref: 2021216).
- installation of approx 3.2 km of underground cable ducting and associated electrical cabling, approx 1.2km of overhead line supported on wood polesets, and all other ancillary works including joint bays, culverts, marker posts. The Electricity Supply Board (ESB). Various townlands between Dereenacreenig West Windfarm and ESB substation at Ballylicky, County Cork (Planning Ref: 2018088).
- Substitute consent for the as-constructed electricity grid connection elements, consisting of c. 9.7km of 20 kV overhead line (OHL). The Electricity Supply Board (ESB). Various townlands between Dereenacreenig West Windfarm and ESB substation at Ballylicky, County Cork (Planning Ref: 2019165).
- 10 year permission for completed development consisting of: (1) A 110kV electricity substation including 2 no. control buildings associated electrical plant and equipment, underground electricity cabling, fencing, alterations to a previously permitted borrow pit and temporary construction compound at the Carrigarierk Wind Farm (An Comisiún Pleanala Ref. PL04.246353, Cork County Council Ref. 15/730) in the townland of Carrigdangan; (2) 110kV underground electricity cabling connecting the proposed substation to the existing Dunmanway ESB substation in the townlands of Carrigdangan, Inchincurka, Kilnadur, Aultaghreagh, Aultagh, Ardcahan, Knockduff, Gurteennasowna and Ballyhalwick; (3) 33kV underground electricity cabling connecting the proposed substation to the permitted Carrigarierk Wind Farm through the townlands of Carrigdangan and Gortatanavally and the permitted Shehy More Wind Farm (ABP Ref. PL04.243486; Cork County Council Ref. 13/551), through the townlands of Shehy More, Coolcaum, Coolmountain, Tullagh, Lackabaun, Clogher, Farrannahineeny, Crushterra, Gurteen and Carrigdangan. Together with all ancillary works and apparatus. (Planning Ref: 2017038).
- The development consists of a lateral extension and deepening of an existing quarry, permitted under Plan File Ref. no. 02/5740, to give an overall extraction footprint of c.10.9 hectares. (Planning Ref: 2019192).
- Electrical 20kV powerline grid connection c.10.1km in length (9,98km of underground cable and 134m of Over Headline) connecting the approved substation at Knockeenboy Wind Farm to the existing 110kV substation at Dunmanway. Knockeenbui Wind Farm Limited. Townlands of Knockeenboy, Kilronane West, Kilronane East, Moreagh, Nedinagh West, Acres and Ballyhalwick townlands to the east, south and southwest of Dunmanway, Co. Cork. (Planning Ref: 2021279).
- Extension to existing quarry, extending to 1.6ha extraction footprint area, realigned access road and continued use of existing quarry infrastructure. Drimoleague Concrete Works Ltd (Planning Ref: 2020039).
- Two existing Salmon Farm license renewal applications AQ321 REF T5/122 T5/122A. Murphys Irish Seafood Ltd (Planning Ref: 2021193).
- Upgrade of existing forest access roads and works at the entrance to an existing forest road accessed off the N22. It forms part of a renewable energy development comprising a five-turbine wind farm. The site for the proposed wind farm accommodation works is located 5.9 km west of Ballyvourney, Co. Cork within the townland of Derryreag and borders the county boundary between Cork and Kerry. (Planning Ref: 2023100).

Dunmanway Waste Water Network Upgrade

Upgrade works to the existing wastewater network and all associated site development works: 1. Decommissioning of 485 linear meters of sewers along the north bank of the Sally (Dirty) River, in addition to the upstream river crossing, and 648 linear meters of sewer from the Quarry Road Pumping Station to the Clonakilty Road (R-599) via Brookpark including 2 no. existing river crossings of the Sally (Dirty) River and Brewery River. The existing sewers and manholes will be removed where the new pipeline coincides with the existing pipeline (approximately 305m of pipeline in total). All other sections of pipeline will be left in situ when decommissioned. 2. Upgrading and replacement of foul sewer consisting of the laying of c.1,267 linear metres of new underground pipework and associated manholes across public roads (L-4620, L-8691, L-8680, R-599) and private lands, including provision of 3 no. watercourse crossings at the Sally (Dirty) River and Brewery River. 3. Upgrades to Quarry Road Pumping Station consisting of the provision of 2 no. additional storm tanks, inlet screen, 3 no. new storm pumps, rising main diversions, interconnecting pipework and chambers, odour and electrical control infrastructure, overhead cabling, relocation of existing pole-mounted transformer, photovoltaic panels with associated controls / interfaces, provision of new control kiosks and adjustments to perimeter fencing. 4. Upgrades to Longbridge Pumping Station consisting of 1 no. additional storm overflow tank, inlet screen, 3 no. new storm pumps, replacement of existing foul pumps and macerator with 2 no. submersible electric pumps, interconnecting pipework and chambers, replacement outfall pipe, rising main diversions, odour and electrical control infrastructure, overhead cabling, photovoltaic panels with associated controls / interfaces, relocation of existing terminal pole and the existing control kiosk, provision of new control kiosks, and adjustments to perimeter fencing. 5. Tree removal and replacement planting, landscaping, and all associated site development and reinstatement works including ancillaries and excavation works above and below ground for the proposed works. The project will be constructed in the Dunmanway Agglomeration area licenced under the Waste Water Discharge (Authorisation) (WWDA) Regulations 2007 (Licence D0160-01 A).

The planning documents for the Dunmanway Waste Water Network Upgrade was reviewed as part of this assessment. With the mitigation measures outlined within the documents for Dunmanway Wastewater Network Upgrade, no potential for significant cumulative effects on biodiversity was identified.

Bandon - Dunmanway 110kV Line Uprate Project

An upgrade (refurbishment) of the existing Bandon to Dunmanway 110kv OHL, which consists of the : (i) replacement ("restringing") of the existing OHL conductor wires with a new higher capacity conductor including installation of a new fibre optic communication connection; (ii) replacement of 12 no. of the 13 no. existing steel towers including 11 no. angle masts (AM) and 1 no. end mast (EM) and their foundations with similar structures and member replacement and new bolts at 1 no. EM. Any replacement AMs will be constructed at, or immediately adjacent to the existing structures that they will replace, with a height difference of between 0.5-1.5m; (iii) Replacement of 16 no. of the 127 no. existing intermediate pole sets (IMPs); with similar structures. Any replacement IMPs will be constructed in situ, with the exception of IMP128 which will be replaced at an offset of 10m. The height differences of the replacements will be 1m, with the exception of IMP113 and IMP115 which will be a 2m and 3m increase in height respectively, (iv) Carrying out of civil works for tower foundation strengthening at 1 no. location; (v) Replacement of hardware and fittings at all locations, including insulators, clamps, anti-climb guards, vibration dampers, and installation of new jumper arrangements, suspension weights, plump poles, pole bolts and anti-climb guards; (vi) replacement of a crossarm at 1 no. location; (vii) all associated works within the existing Dunmanway Substation to accommodate the uprated 110 kV OHL and all associated site development works including above and below the ground works to gain access to the existing structures including timber cutting and vegetation clearance, painting, renumbering of replacement.

The planning documents for the Bandon - Dunmanway 110kV Line Uprate Project was reviewed as part of this assessment. With the mitigation measures outlined therein for Bandon - Dunmanway 110kV Line Upgrade Project, no potential for significant cumulative effects on biodiversity was identified.

6.5.1.3 Projects Within 250m of Proposed Grid Connection

A desk-based planning search was undertaken to identify projects within 250m vicinity of the Proposed Grid Connection using the Cork County Council planning portal. The projects within this boundary are described in **Chapter 2** and are not repeated in detail here. Thirty-one projects were identified within this area and consisted predominantly of the construction of individual private dwellings, extensions to existing dwellings, agricultural shed and infrastructure projects.

A number of projects pertaining to overhead electrical powerline grid connections were considered, including planning references 21/902 and 23/654.

Planning references 23/74 for permission for facilitating works for the provision of access to existing hill-walking routes at Shehy Mountain, including carparking spaces and ancillary works, was also considered.

Planning reference 24/224 lodged by Uisce Éireann was also reviewed. This application is for proposed upgrade works to the existing wastewater network, including the decommissioning of sewers which will include river crossings, and upgrades to pump station infrastructure.

Given the small scale of the projects identified within 250m of the Proposed Grid Connection, and given the lack of significant residual effects predicted as a result of the Proposed Grid Connection there is no potential for likely significant cumulative effect when considered in-combination with these projects. The works along the Proposed Grid Connection are minor and transient, similar to roadworks being completed across the country and have no potential for significant cumulative effects on ecology.

6.5.1.3.1 *Knockeenboy Wind Farm Grid Connection (planning ref: 21902)*

A development consisting of a 20 kilovolt (kV) electrical powerline grid connection, approximately 10,117 metres in overall length (made up of approximately 9,983 metres of underground cable and approximately 134 metres of Over Head Line with three wooden support single poles), connecting the approved electrical substation at Knockeenboy Wind Farm (Planning Register Reference No. 11/00059 & An Comisiún Pleanala Ref. PL88.240070) to the existing Dunmanway 110kV ESB Networks substation at Ballyhalwick; together with all ancillary works and apparatus.

The planning documents for Knockeenboy Wind Farm Grid Connection[34] was reviewed which has mitigation in place to prevent impacts via deterioration in water quality. No potential for significant cumulative effects on biodiversity were identified during neither the construction phase nor operational maintenance works.

6.5.2 Existing Habitats and Land Uses

The potential for the Proposed Project to result in a significant 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 forestry, heath, peatland and grassland. The Proposed Project will result in the loss of conifer plantation, grassland, degraded heath/ peatland habitats and linear and scrub habitats. However, a potential for residual effect due to the loss of degraded upland banket bog (PB2) has been identified. As such, there is potential for cumulative effect on this habitat in combination with adjacent turbary activities.

[34] *https://planning.corkcoco.ie/ePlan/AppFileRefDetails/21902/0*

Forestry activity was identified as a pathway for effect on aquatic receptors in this application. Whilst forestry is a common practice in the wider area, given the measures to prevent significant impacts on water quality in this application, there is no potential for this application to result in significant cumulative impacts on water quality, in combination with forestry activities in the wider landscape.

6.5.3 Cumulative Impacts and Compliance with Development Plans

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

- Cork County Development Plan 2022-2028
- Regional Spatial and Economic Strategy for the Southern Region 2020-2032
- 4th National Biodiversity Action Plan 2023-2037

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 peatlands and sustainable land use were also reviewed, particularly where the policies relate to the preservation of surface water quality. An overview of the search results with regard to plans is provided in **Table 6-23.**

Table 6-23 Development Plan Review

Plan	Key Policies/Issues/Objectives Directly Related to Biodiversity and Sustainable Development in The Zone of Influence	Assessment of development compliance with policy
Cork County Development Plan 2022-2028	It is the Policy of the Council to: **RP 5-19: Greenbelts around Settlements** (a) Retain the identity of towns, to prevent sprawl, and to ensure a distinction in character between built up areas and the open countryside by maintaining a Greenbelt around all individual towns. (b) Reserve generally for use as agriculture, open space or recreation uses those lands that lie in the immediate surroundings of towns. Where Natura 2000 sites, Natural Heritage Areas, proposed Natural Heritage Areas and other areas of biodiversity value occur within Greenbelts, these shall be reserved for uses compatible with their nature conservation designation and biodiversity value. (c) Prevent linear roadside frontage development on the roads leading out of towns and villages.	The Development Plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to biodiversity, protected species and Designated Sites. Where pathways for effects on Designated Sites have been identified, mitigation shall also be implemented to ensure that there are no significant effects.
	TO 10-2 Wild Atlantic Way and Irelands Ancient East Continue to actively engage, invest, encourage and promote the development of the Wild Atlantic Way and Irelands Ancient East regional brands through sustainable tourism, which will enable visitors to have enjoyable experiences while having regard for the cultural, built and natural heritage, and environmental impacts, including the protection of Natura 2000 sites.	

	WM 11-1: EU Water Framework Directive and the River Basin Management Plan a) Protect and improve the County's water resources and ensure that development permitted meets the requirements of the River Basin Management Plan and does not contravene the objectives of the EU Water Framework Directive. b) Promote compliance with the River Basin Management Plan and associated environmental standards and objectives set out in the European Communities (Environmental Objectives) Surface Water Regulations, 2009 and the European Communities (Environmental Objectives) Groundwater Regulations, 2010, to prevent deterioration; restore good status; reduce chemical pollution, and achieve water related protected areas objectives in rivers, lakes, groundwater, estuaries and coastal waters (as applicable). c) Secure the objectives and facilitate the implementation of the associated Programme of Measures of the River Basin Management Plan 2018-2021 and any successor plan for ground, surface, estuarine, coastal and transitional waters in the Plan area as part of the implementation of the EU Water Framework Directive. d) Support an integrated and collaborative approach to local catchment management in order to assist in the implementation of the River Basin Management Plan. e) In acknowledgement of the sustained pressures on ecological status being experienced in Blue Dot catchment waterbodies, additional measures, as deemed necessary to protect and restore these waterbodies to high status may be required for development permitted in such catchments. Measures may include, but are not limited to, a water management plan (including the construction phase), tertiary treatment and appropriate SUDs measures. f) Support the prioritisation of the provision of water services infrastructure in: • Metropolitan Cork, the Key Towns and Main Towns to complement the overall strategy for economic and population growth while ensuring appropriate protection of the environment. • All settlements where services are not meeting current needs, are failing to meet the requirements of the Urban Wastewater Treatment Directive, and where these deficiencies are − interfering with Councils ability to meet the requirements of the Water Framework Directive; or − having negative impacts on Natura 2000 sites; and g) Development may only proceed where appropriate wastewater treatment is available which meets the requirements of environmental legislation, the Water Framework Directive and the requirements of the Habitats Directive.	No potential for negative cumulative impacts when considered in conjunction with the Proposed Project were identified.
	WM 11-17: Development in Flood Risk Areas When considering proposals for development, which may be vulnerable to flooding, and that would generally be inappropriate as set out in Table 3.2 of the Guidelines, the following criteria must be satisfied: 1. The subject lands have been zoned or otherwise designated for the particular use or form of development in an operative development plan, which has been adopted or varied taking account of these Guidelines. 2. The proposal has been subject to an appropriate flood risk assessment that demonstrates: a. The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk; b. The development proposal includes measures to minimise flood risk to people, property, the economy and the environment as far as reasonably possible; c. The development proposed includes measures to ensure that residual risks to the area and/or development can be managed to an acceptable level as regards the adequacy of existing flood protection measures or the design, implementation and funding of any future flood risk management measures and provisions for emergency services access; and d. The development proposed addresses the above in a manner that is also compatible with the achievement of wider planning objectives in relation to development of good urban design and vibrant and active streetscapes. The acceptability or otherwise of levels of residual risk should be made with consideration of the type and predicted future use of the development and the local development context. The development is	

	assessed not to have the potential to give rise to negative or adverse impacts on the integrity of Natura 2000 sites or Natural Heritage Areas or proposed Natural Heritage Areas.	
	ET 13-2 Renewable Energy a) Support Ireland's renewable energy commitments as outlined in Government Energy and Climate Change policies by facilitating the development of renewable energy sources such as wind, solar, geothermal, hydro and bio-energy and energy storage at suitable locations within the county where such development has satisfactorily demonstrated that it will not have adverse impacts on the surrounding environment (including water quality), landscape, biodiversity or amenities. b) Support and facilitate renewable energy proposals that bring about a direct socio-economic benefit to the local community. The Council will engage with local communities and stakeholders in energy and encourage developers to consult with local communities to identify how they can invest in/gain from significant renewable energy development. c) Support the development of new and emerging renewable energy technologies / fuels for the transport sector. d) To promote the potential of micro renewables where it can be demonstrated that that it will not have adverse impacts on the surrounding environment (including water quality), landscape, biodiversity or amenities.	
	ET 13-4: Wind Energy In order to facilitate increased levels of renewable energy production consistent with national targets on renewable energy and climate change mitigation as set out in the National Energy and Climate Plan 2021-2030, the Climate Action Plan 2021, and any updates to these targets, and in accordance with Ministerial Guidelines on Wind Energy Development, the Council will support further development of on-shore wind energy projects including the upgrading, repowering or expansion of existing infrastructure, at appropriate locations within the county in line with the Wind Energy Strategy and objectives detailed in this chapter and other objectives of this plan in relation to climate change, biodiversity, landscape, heritage, water management and environment etc.	
	ET 13-6: Acceptable in Principle Commercial wind energy development is normally encouraged in these areas subject to protection of residential amenity particularly in respect of noise, shadow flicker, visual impact and the requirements of the Habitats, Birds, Water Framework, Floods and EIA Directives and taking account of protected species of conservation concern.	
	ET 13-7: Open to Consideration Commercial wind energy development is open to consideration in these areas where proposals can avoid adverse impacts on: • Residential amenity particularly in respect of noise, shadow flicker and visual impact; • Urban areas and Metropolitan/Town Green Belts; • Natura 2000 Sites (SPA's and SAC's), Natural Heritage Areas (NHA's), proposed Natural Heritage Areas and other sites and locations of significant ecological value. • Architectural and archaeological heritage; • Visual quality of the landscape and the degree to which impacts are highly visible over wider areas. In planning such development, consideration should also be given to the cumulative impacts of such proposals	

	GI 14-1: Countywide Green and Blue Infrastructure Objectives a) Create an integrated and coherent green infrastructure for the County by encouraging the retention and strengthening of substantial networks of green space in urban, urban fringe and the wider countryside to serve the needs of communities now and in the future and as a key contributor to climate mitigation and climate adaptation. b) Develop the green infrastructure network (including green corridors) to ensure the conservation and enhancement of biodiversity, including the protection of Natura 2000 European Sites, the provision of accessible parks, open spaces and recreational facilities (particularly within settlements), the sustainable management of water, the maintenance of landscape character and the protection and enhancement of architectural and archaeological heritage. c) Capitalise on and highlight the multifunctional benefits/opportunities (ecosystem services) that green and blue infrastructure can present. Seek to advance the use of nature based solutions as an alternative to traditional infrastructure. Seek to advance an ecosystem services approach and ecosystem services valuation as a decision-making tool in plans and projects. d) Recognise rivers and streams (and their wider riparian corridors) as one of the natural foundations for multi-functional green and blue infrastructure corridors. Seek to strengthen ecological linkages which watercourses have with other water dependent habitats as well as with hedges/treelines, woodland and scrub in the wider landscape. e) Ensure that all settlements have an adequate level of quality green and recreational infrastructure (active and passive) taking into account existing deficits, planned population growth as well as the need to serve their surrounding hinterlands. f) Achieve a net gain in green infrastructure through the protection and enhancement of existing assets and through the provision of new green infrastructure as an integral part of the planning process. Encourage the provision of different green infrastructure elements, such as trees in urban areas and green roofs in town centres, so that a net gain in green infrastructure is achieved over the lifetime of this Development Plan. g) Seek to increase investment in green infrastructure provision and maintenance by accessing relevant EU funding mechanisms and national funding opportunities including tourism related funding. h) Integrate the provision of green infrastructure with infrastructure provision and replacement, including walking and cycling routes, as appropriate, while protecting biodiversity and other landscape resources. i) Support initiatives and programmes which seek to strengthen the green and blue infrastructure and work with communities and other stakeholders in furthering the green and blue infrastructure concept.	
	BE 15-1: Support and comply with national biodiversity protection policies a) Support and comply with the objectives of the National Biodiversity Plan 2017-2021 (and any future National Biodiversity Plan which may be adopted during the period of this Plan) as appropriate, b) Implement the current County Biodiversity Action Plan and any future updated Plan; c) Support and comply with biodiversity policy set out in other national and regional policy documents as appropriate.	
	BE 15-2: Protect sites, habitats and species a) Protect all natural heritage sites which are designated or proposed for designation under European legislation, National legislation and International Agreements. Maintain and where possible enhance appropriate ecological linkages between these. This includes Special Areas of Conservation, Special Protection Areas, Marine Protected Areas, Natural Heritage Areas, proposed Natural Heritage Areas, Statutory Nature Reserves, Refuges for Fauna and Ramsar Sites. These sites are listed in Volume 2 of the Plan. b) Provide protection to species listed in the Flora Protection Order 2015, to Annexes of the Habitats and Birds Directives, and to animal species protected under the Wildlife Acts in	

	accordance with relevant legal requirements. These species are listed in Volume 2 of the Plan. c) Protect and where possible enhance areas of local biodiversity value, ecological corridors and habitats that are features of the County's ecological network. This includes rivers, lakes, streams and ponds, peatland and other wetland habitats, woodlands, hedgerows, tree lines, veteran trees, natural and semi-natural grasslands as well as coastal and marine habitats. It particularly includes habitats of special conservation significance in Cork as listed in Volume 2 of the Plan. d) Recognise the value of protecting geological heritage sites of local and national interest, as they become notified to the local authority, and protect them from inappropriate development e) Encourage, pursuant to Article 10 of the Habitats Directive, the protection and enhancement of features of the landscape, such as traditional field boundaries, important for the ecological coherence of the Natura 2000 network and essential for the migration, dispersal and genetic exchange of wild species.	
	BE 15-6: Biodiversity and New Development Provide for the protection and enhancement of biodiversity in the development management process and when licensing or permitting other activities by: a) Providing ongoing support and guidance to developers on incorporating biodiversity considerations into new development through preplanning communications and the Council's guidance document 'Biodiversity and the Planning Process – guidance for developments on the management of biodiversity issues during the planning process' and any updated versions of this advice; b) Encouraging the retention and integration of existing trees, hedgerows and other features of high natural value within new developments; c) Requiring the incorporation of primarily native tree and other plant species, particularly pollinator friendly species in the landscaping of new developments; d) Fulfilling Appropriate Assessment and Environmental Impact Assessment obligations and carrying out Ecological Impact Assessment in relation to development and activities, as appropriate; e) Ensuring that an appropriate level of assessment is completed in relation to wetland habitats subject to proposals which would involve drainage or reclamation. This includes lakes and ponds, watercourses, springs and swamps, marshes, heath, peatlands, some woodlands as well as some coastal and marine habitats; f) Ensuring that the implementation of appropriate mitigation (including habitat enhancement, new planting or other habitat creation initiatives) is incorporated into new development, where the implementation of such development would result in unavoidable impacts on biodiversity - supporting the principle of biodiversity net gain.	
	BE 15-17: Waste Prevention and Management a) Planning applications for infilling of marginal land through soil importation will be supported where it can be demonstrated that the developments accord with proper planning and sustainable development, ensuring that they are compatible with the protection of environmental resources including water quality, Natura 2000 sites, biodiversity, archaeological and landscape resources. b) Support will be provided for locating suitable sites within the county for the safe disposal of construction and demolition waste in conjunction with the Southern Waste Region. c) Construction and Environmental Management Plans (CEMPs)/ Construction and Demolition Management Plans shall be prepared for larger scale projects as set out in paragraph 15.12.24 and this requirement shall be assessed on a case-by-case basis as part of the development management process. d) Support the implementation of the recommendations and policies of the National Hazardous Waste Management Plan 2014-2020.	

	ET 13-22: Transmission Network a) To co-operate and liaise with statutory and other energy providers in relation to power generation in order to ensure adequate power capacity for the existing and future needs of the County including business and residential demands. b) Proposals for new electricity transmission networks will need to consider the feasibility of undergrounding or the use of alternative routes especially in landscape character areas that have been evaluated as being of high landscape sensitivity. This is to ensure that the provision of new transmission networks can be managed in terms of their physical and visual impact on both the natural and built environment and the conservation value of European sites. c) Proposals for development which would be likely to have a significant effect on nature conservation-sites and/or habitats or species of high conservation value will only be approved if it can be ascertained, by means of an Appropriate Assessment or other ecological assessment, that the integrity of these sites will not be adversely affected.	
	ZU 18-13: Green Infrastructure Three subcategories of Green Infrastructure zonings have been identified to a) Retain and provide for open space and recreational amenities within Green Recreational (Open Spaces/ Park) areas; b) Retain and generally protect appropriate areas for their landscape, amenity or nature conservation value or their current or future flood management role, within Green Conservation (Landscape amenity/ nature conservation) area; and c) Retain and provide for active recreational facilities within Green Active (Active Open Space) areas. No development other than development which supports Green Infrastructure will be considered in these areas. Any proposals in Green Infrastructure areas will need to ensure the protection and enhancement of the integrity of biodiversity and to recognise the importance of wildlife corridors and sites of nature conservation and be in accordance with Article 10 of the Habitats Directive.	

Regional Spatial and Economic Strategy for the Southern Region (2020-2032)	**Regional Policy Objective 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. **c** - RSES support for other plans/ programmes (and initiatives arising) is on the basis of appropriate SEA, SFRA, EIA and AA processes being undertaken in order to ensure the avoidance of adverse effects on European Sites and ensure implementation of mitigation measures where required **d** - Development Plans shall include an objective for the protection of European sites and Natural Heritage Areas (designated and notified proposed NHAs). **Regional Policy Objective 38.c** - Support initiatives that retrofit environmental amenities to address adverse effects on biodiversity and the environment. **Regional Policy Objective 117** - 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.	The strategy was comprehensively reviewed, with particular reference to Policies and Objectives that relate to biodiversity, protected species and Designated Sites. The Proposed Project has been designed in order to avoid likely significant effect on biodiversity and Designated Sites. Where pathways for effects on Designated Sites have been identified, mitigation shall be implemented to ensure that there are no significant effects. No potential for negative cumulative impacts when considered in conjunction with the Proposed Project were identified.
Ireland's 4th National Biodiversity Action Plan 2023-2030	› **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.	The National Biodiversity Action Plan 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 impacts when considered in conjunction with the current proposal were identified. There will be no impact on designated sites as a result of the development. Best practice preventative measures will be implemented to avoid effects on European Sites. There will be no adverse effects on receptors listed as QIs/SCIs of European Sites, as a result of the development.

	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.	

6.5.4 Conclusion of Cumulative Effects Assessment

The residual construction, operational and decommissioning impacts of the Proposed Project are considered cumulatively with other plans and projects as described in **Section 6.6.** 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.

Following the detailed surveys undertaken and the impact assessment provided in Section 6.5, it is concluded that there will be no significant residual disturbance, deterioration of water quality or faunal habitat loss associated with the Proposed Project. On consideration of the reported residual effects from other projects in the area, it will not contribute to any significant cumulative effect in this regard. 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 by avoiding Annex I habitats in good condition. However, it has been concluded that there is a potential for a residual negative effect as a result of the loss of degraded blanket bog (PB2). As such, there is a potential for cumulative effect on this habitat when considered in-combination with adjacent land uses.

No significant residual effects as a result of the Proposed Project in relation to disturbance, displacement, mortality of faunal species, loss of faunal habitat or deterioration in water quality has been identified. On review of the reported residual effects from other projects, no potential for the Proposed Project to contribute to significant cumulative effects in this regard has been identified.

6.6 EIA Classification Summary

A summary of all identified impacts for the Proposed Project relating to biodiversity is provided in the table below.

Table 6-24 Impact Assessment Classification Summary

Topic	Pre-Mitigation Effect	Mitigation Section Reference	Residual Effect	Significance
Construction Phase				
European Sites	Effects on European Sites are addressed in the NIS. The NIS finds that 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.			
Nationally Designated Sites	Indirect, negative, temporary, significant effect	Section 6.4.5.2 Section 6.4.2.1.1	No significant residual effect at any geographic scale	Not Significant
Aquatic Habitats and Related Species	Indirect, negative, temporary, significant effect	Section 6.4.2.1.1	No significant residual effect at any geographic scale	Not Significant
Degraded Upland Blanket Bog (PB2)	Direct, negative, permanent, significant effect	Section 6.4.2.1.2	Permanent, significant residual effect	Significant
Wet heath (HH3)	Direct, negative, permanent, significant effect	Section 6.4.2.1.2	No significant residual effect at any geographic scale	Not Significant
Linear and Scrub (WS1) Habitats	Direct, permanent, not significant effect	Section 6.4.2.1.3	No significant residual effect at any geographic scale	Not Significant
Bats	No significant effect	Section 6.4.2.2.1	No significant residual effect at any geographic scale	Not Significant
Badger	No significant effect	Section 6.4.2.2.2	No significant residual effect at any geographic scale	Not Significant
Otter	Habitat Degradation:	Section 6.4.2.2.3	No significant residual effect at	Not Significant

	Temporary, significant effect Disturbance: Temporary, significant effect		any geographic scale	
Kerry Slug	Habitat Loss: Permanent, not significant effect Disturbance/mortality: Temporary, significant effect	Section 6.4.2.2.4	No significant residual effect at any geographic scale	Not Significant
Pine Marten and Red Squirrel	No significant effect	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 finds that 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.			
Nationally Designated Sites	No significant effect	Section 6.4.5.2 Section 6.4.2.1.1	No significant residual effect at any geographic scale	Not Significant
Aquatic Habitats and Related Species	No significant effect	6.4.3.1.1	No significant residual effect at any geographic scale	Not Significant
Bats	Long-term, Negative, Significant at the local scale	6.4.3.2.1	No significant residual effect at any geographic scale	Not Significant
Decommissioning Phase				
Biodiversity	The potential impacts associated with decommissioning of the Proposed Project will be similar to those associated with construction but of a reduced magnitude,	Section 6.4.4	No significant residual effect at any geographic scale	Not Significant

	due to the reduced scale of the proposed decommissioning works in comparison to construction phase works.			

6.7 Conclusion

The avoidance principle has been applied as part of the Proposed Project and as such good quality, intact Annex I habitats have been completely avoided. No significant individual or cumulative residual effects as a result of the Proposed Project in relation to disturbance, displacement, mortality of faunal species, loss of faunal habitat or deterioration in water quality has been identified at any geographic scale. A potential for significant residual effect on degraded upland blanket bog (PB2) has been identified. The proposed Biodiversity Management and Enhancement Plan in place as part of the Proposed Project will result in a net gain in wet heath habitat and suitable breeding and foraging habitat for Kerry slug.

The potential for effects on the European 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 ecology are not anticipated at the national or international scale.