# Chapter 6 Biodiversity

## Slieveacurry Renewable Energy Development, Co. Clare

Environmental Impact Assessment Report (EIAR)

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## APPENDICES

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**Appendix 6-2:** Botanical Report
**Appendix 6-3:** Aquatic Baseline Report
**Appendix 6-4:** Biodiversity Management and Enhancement Plan
**Appendix 6-5:** Invasive Species Management Plan
**Appendix 6-6:** Marsh Fritillary Habitat Assessment Data

# 6. BIODIVERSITY

## 6.1 Introduction

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

### 6.1.1 Purpose and Structure of this Chapter

The chapter is structured as follows:

- The Introduction provides a description of the legislation, guidance and policy context applicable to Biodiversity.
- This is followed by a comprehensive description of the ecological survey and impact assessment 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 Valuation is then provided.
- This is followed by an Assessment of Effects which are described with regard to each phase of the Proposed Project: construction phase, operational phase and decommissioning phase. Potential Cumulative effects 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.

Section 1.1.2 of Chapter 1: Introduction provides definitions for terms which are utilised in this chapter, and are again provided below:

- Where the 'Proposed Project' is referred to, this encompasses the entirety of the project for the purposes of this EIA in accordance with the EIA Directive. The Proposed Project is described in detail in Chapter 4: Description of the Proposed Project of this EIAR.
- Where the 'Site' is referred to, this relates to the primary study area for the EIAR, as delineated by the EIAR Site Boundary in green as shown on Figure 1-1 of the EIAR and encompasses an area of approximately 1,260 hectares.
- Where the 'Proposed Grid Connection Site' is referred to, this refers to the part of the Site containing the extension to the existing 110kV substation at Slieveacallan and the 33kV underground cabling route from the wind farm road to the proposed substation extension.
- Where the 'Proposed Wind Farm Site' is referred to, this refers to the portion of the Site containing the proposed turbines and ancillary infrastructure (excluding the Proposed Grid Connection Site).
    - The 'Proposed Turbines' refers to the 9 no. turbines associated with the Proposed Wind Farm Site as outlined above.

- Where the 'Proposed Enhancement Site' is referred to, this refers to the portion of the Site containing the proposed biodiversity and ornithology enhancement and management areas (excluding the Proposed Wind Farm Site and the Proposed Grid Connection Site).

Both the EIAR and Natura Impact Statement (NIS) accompanying the planning application take into account the combined impacts of these individual elements of the Proposed Project.

For clarity in this EIAR, all elements of the Proposed Project will be assessed cumulatively with other projects to aid the competent authority in carrying out an EIA. The methodology for the identification of projects with the potential for cumulative effects is set out in detail in Chapter 2: Background to the Proposed Project of this EIAR.

In addition:

- For the purposes of this Biodiversity Chapter, 'Construction Phase' refers to site enabling works which include the construction of the site infrastructure. The 'Operational Phase' refers to the proposed operating wind farm post-construction.
- "Key Ecological Receptor" (KER) is defined as a species or habitat occurring within the Zone of Influence of the Proposed Project upon which likely significant effects are anticipated.
- "Zone 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 practice guidance and through adoption of a precautionary approach.
- The permanent built infrastructure of the Proposed Project is referred to as the 'Project Footprint'.

## 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 animals 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. NHAs are legally protected from damage from the date they are formally proposed for designation[1]. A list of pNHAs were published on a non-statutory basis in 1995 but have not since been statutorily proposed or designated. However, these sites are considered to be of significance for wildlife and habitats as they may form statutory designated sites in the future. These Sites are usually afforded protection at a local level through policies and objectives included in county development plans and biodiversity action plans.

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

**National Policy**

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

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

- **Objective 1: Adopt a Whole-of Government, Whole of-Society Approach to Biodiversity.** Proposed actions include capacity and resource reviews across Government; determining responsibilities for the expanding biodiversity agenda providing support for communities, citizen scientists and business; and mechanisms for the governance and review of this National Biodiversity Action Plan.
- **Objective 2: Meet Urgent Conservation and Restoration Needs.** Supporting actions will build on existing conservation measures. Efforts to tackle Invasive Alien Species will be elevated. The protected area network will be expanded to include the Marine Protected Areas. The ambition of the EU Biodiversity Strategy will be considered as part of an evolving work programme across Government.
- **Objective 3: Secure Nature's Contribution to People.** Actions highlight the relationship between nature and people in Ireland. These include recognising the tangible and intangible values of biodiversity, promoting nature's importance to our culture and heritage and recognising how biodiversity supports our society and our economy.

[1] https://www.npws.ie/protected-sites/nha (accessed April 2026).

- **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[2]) 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 (SACs). 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 SACs. Annex IV lists animal and plant species in need of strict protection such as lesser horseshoe bat and otter, and Annex V lists animal and plant species whose taking in the wild and exploitation may be subject to management measures. In Ireland, species listed under Annex V include Irish hare, common frog and pine marten. Species can be listed in more than one Annex, as is the case with otter and lesser horseshoe bat which are listed on both Annex II and Annex IV. The disturbance of species under Article 12 of the Habitats Directive (and in particular avoidance of deliberate disturbance of Annex IV species, particularly during the period of breeding, rearing, hibernation and migration and avoidance of deterioration or destruction of breeding sites or resting places) has been specifically assessed in this EIAR.

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

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

[2] *The term Natura 2000 network was replaced by 'European site' under the EU (Environmental Impact Assessment and Habitats) Regulations 2011 S.I. No. 473 of 2011.*

adverse impact on any relevant European Sites (i.e. SACs, cSACs[3], SPAs or cSPAs) has been carried out in the Appropriate Assessment (AA) Screening Report and NIS. A separate assessment has not been carried out in this chapter, to avoid duplication of assessments. However, the relevant conclusions from the NIS 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) and the European Union (Invasive Alien Species) Regulations 2024.

### 6.1.3 Review of Relevant Guidance and Sources of Consultation

The assessment methodology is based primarily upon the Transport Infrastructure Ireland (TII)'s Guidelines for Assessment of Ecological Impacts of National Road Schemes Rev 2 (TII, 2009) (referred to hereafter as the TII Ecological Impact Assessment Guidelines), and the survey methodology is based on the TII Guidelines on Ecological Surveying Techniques for Protected Flora and Fauna on National Road Schemes (TII, 2008). Although these survey methodologies relate to road schemes, these standard guidelines are recognised survey methodologies that ensure good practice regardless of the development type.

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

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

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

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

- Clare County Development Plan 2023-2029
- Regional Spatial and Economic Strategy 2020 – 2032
- Ireland's 4th National Biodiversity Action Plan 2023-2030
- Clare County Biodiversity Action Plan 2025 - 2031

### 6.1.4 Statement of Authority

This Biodiversity Chapter was prepared by Pádraig Desmond (BSc.), Deepali Mooloo (BSc., MSc.), and Stephanie Corkery (BSc., MSc.) and reviewed by Caroline Kelly (BSc., MSc., MCIEEM).

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

Multidisciplinary ecological walkover surveys of the Site were carried out on various dates in 2017, 2018, 2019, 2020 and 2021 for a previous wind farm application at the Site, referred to here as the '2021 EIAR. Details of the 2021 EIAR are provided in Section 1.1.1 of this EIAR.

Multidisciplinary walkover surveys, including aquatic surveys, were carried out in 2024, 2025, and 2026 by MKO Ecologists Pat Roberts (BSc, MCIEEM), Corey Cannon (BSc., MSc., CEcol, MCIEEM), Pádraig Desmond, Deepali Mooloo (BSc., MSc.) and Tim Murphy (BSc.) to ground-truth the ecological surveys previously undertaken within the Site and to record any changes which may have occurred in the interim.

Bat surveys were conducted by MKO ecologists in 2024, 2025 and 2026, which are fully detailed in Section 3.3 of the Bat Report in **Appendix 6-1**. Aquatic surveys were conducted by MKO ecologists in 2025, which are fully detailed in Section 2 of the Aquatic Baseline Report in **Appendix 6-3**.

All surveyors have relevant academic qualifications and are competent in undertaking habitat and ecological assessments.

**Caroline Kelly**

Caroline is a Senior Ecologist with MKO with over ten years' experience in ecological consultancy and is a Full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Caroline holds a BSc in Environmental Biology from University College Dublin (UCD) and an MSc in Applied Ecological Assessment from University College Cork (UCC). In addition, Caroline has completed an Advanced Diploma in Planning and Environmental Law from Kings Inns Dublin. Prior to taking up her position with MKO in June 2025, Caroline worked as a Principal Ecologist with Scott Cawley Ltd. Caroline has strong generalist field ecology skills and has undertaken a range of ecological surveys including habitat, bird (both breeding and wintering), invasive species and protected fauna surveys. She has strong technical reporting skills and has extensive experience in a range of ecological assessments including Appropriate Assessment and Ecological Impact Assessment. She has undertaken ecological assessments and surveys on a variety of project types (e.g. linear infrastructure projects, industrial, commercial, residential, recreational, tourism and renewable energy developments).

**Pádraig Desmond**

Pádraig is a Project Ecologist with MKO with six years post graduate ecological experience, five years of which have been in ecological consultancy. Pádraig holds a BSc (Hons) in Ecology and Environmental Biology from University College Cork. Pádraig took up his position with MKO in December 2021, prior to which he worked as a Junior Ecologist with Envirico. Through these consultancy roles Pádraig has gained excellent experience in producing ecological reports such as Natura Impact Statements, Ecological Impact Assessments, Biodiversity chapters, Invasive Species Management Plans, and Constraints Reports for a wide range of projects including small private developments to housing developments and renewable energy projects such as solar and wind farms. Prior to the above roles, Pádraig worked as a field ecologist for the Department of Conservation in New Zealand, where he developed a strong field-based skill set. Pádraig's key strengths and areas of expertise are in terrestrial ecology, including vegetation surveys, habitat identification, invasive species surveys, mammal surveys, Appropriate Assessment and Ecological Impact Assessment. Pádraig is also skilled in GIS.

**Stephanie Corkery**

Stephanie is an Ecologist with MKO with three years of experience in professional ecological consultancy. Stephanie holds a BSc. in Ecology and Environmental Biology, an MSc. in Marine Biology, and a HDip in Sustainability in Enterprise, all from University College Cork. Since joining MKO as a graduate in March 2022, Stephanie has worked on a wide variety of projects including wind farms, large scale residential developments, and County Council projects. Stephanie's key strengths include organising and carrying out both terrestrial and marine mammal surveys, as well as general

ecological walkover surveys and bat surveys. She is also experienced in GIS, acoustic data analysis for bat species, and in preparing Appropriate Assessment Screening Reports (AASR), Natura Impact Statements (NIS), Ecological Impact Assessments (EcIA), Biodiversity Chapters, and Bat Reports. Stephanie is also a JNCC Certified Marine Mammal Observer and has completed the ACCOBAMS Course for Highly Qualified Marine Mammal Observers (MMO) and Passive Acoustic Monitoring operators (PAM).

**Deepali Mooloo**

Deepali is an Ecologist at MKO with over two years of experience in ecological consultancy, specialising in terrestrial ecology and conservation. She holds an M.Sc. in Applied Coastal and Marine Management from University College Cork, where she focused on spatial ecology and drone photogrammetry.

Since joining MKO, Deepali has contributed extensively to renewable energy and infrastructure projects, providing comprehensive ecological support from early-stage feasibility through to detailed impact assessment. Her expertise encompasses multidisciplinary ecological walkover surveys, habitat identification and classification in accordance with Fossitt's Guide to Habitats in Ireland, and detailed habitat assessments using the ERICA database. She has undertaken a wide range of specialist field surveys, including marsh fritillary larval web and habitat condition assessments, wintering bird, bat, mammal, and botanical surveys, as well as Annex I habitat condition assessments and surveys for rare and protected plant species. She is experienced in conducting detailed vegetation relevés and ecological constraints mapping.

## 6.2 Methodology

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

### 6.2.1 Desk Study

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

- Review of NPWS Article 17 maps, 2019, 2013 and 2007[4].
- Review of online web-mappers: National Parks and Wildlife Service (NPWS)[5], EPA maps[6], Water Framework Directive (WFD) and Inland Fisheries Ireland (IFI)[7].
- Inland Fisheries Ireland (IFI) Reports[8].
- Data on potential occurrence of rare plant and bryophytes – as per NPWS online map viewers; Flora Protection Order 2022 Map Viewer[9].
- Review of the publicly available National Biodiversity Data Centre (NBDC) web-mapper.
- Review of specially requested records from the NPWS Rare and Protected Species Database for the hectads in which the Proposed Project is located.
- Potential for cumulative effects have been considered in Chapter 2: Background to the Proposed Project of this EIAR and Section 6.6 of this Chapter. This was informed by a

[4] https://storymaps.arcgis.com/collections/1a721520030d404f899d658d5b6e159a?item=1 Accessed: 22/01/2026
[5] https://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=8f7060450de3485fa1c1085536d477ba Accessed: 22/01/2026
[6] https://gis.epa.ie/EPAMaps/ Accessed 22/01/2026
[7] https://ifigis.maps.arcgis.com/apps/webappviewer/index.html?id=9a31fedb077c4fb29911848842b7ef025 Accessed: 22/01/2026
[8] https://wfdfish.ie/index.php/wfd-map-viewer/ Accessed: 22/01/2026
[9] https://heritagedata.maps.arcgis.com/apps/webappviewer/index.html?id=a41ef4e10227499d8de17a8abe42bd1e Accessed: 22/01/2026

review of the EIARs/NISs prepared for other plans and projects occurring in the wider area.
- Review of the 2021 EIAR.

### 6.2.1.1 Designated Sites

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

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

Special Areas of Conservation (SACs) and Special Protection Areas for Birds (SPAs) are designated under the EU Habitats Directive and EU Birds Directive, respectively and are collectively known as 'European Sites'. The potential for significant effects and/or adverse impacts on the integrity of European Sites is fully assessed in the NIS that accompanies this application. As per EPA, 2022, *"a biodiversity section of an EIAR, should not repeat the detailed assessment of potential effects on European sites contained in a Natura Impact Statement"* but should *"incorporate their key findings as available and appropriate"*. Section 6.5.1 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 of 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 but are afforded protection though objectives set out in county development and biodiversity action plans. However, the potential for effects on these designated sites is fully considered in this Biodiversity Chapter.

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:

- All designated sites within the vicinity of the Site 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.
- The designation features of these European Sites, as per their respective Statutory Instrument, 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 Zone of Influence (ZoI) and further assessment is required.

### 6.2.1.2 NPWS Article 17 Reporting

A review of the Irish Reports for Article 17 of the Habitats Directive (92/42/EEC)[10], 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.

## 6.2.2 Scoping and Consultation

MKO undertook a scoping exercise in January 2025 during preparation of this EIAR, as described in Chapter 2: Background to the Proposed Project, Section 2.7 of this EIAR.

[10] https://www.npws.ie/maps-and-data/habitat-and-species-data/article-17 *[accessed 22/01/2026]*

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 2-9 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 provides a list of the organisations consulted that raised points relating to biodiversity during the scoping process, and notes where scoping responses were received.

In addition, MKO requested consultation with the National Parks and Wildlife Services (NPWS) to discuss the Proposed Project and to welcome any feedback they may have. A presentation of the Proposed Project was sent to the NPWS in lieu of a meeting, which detailed the surveys undertaken and a summary of the findings. A response was received from the NPWS on the 27th of January 2026, which highlighted the following:

- The response was predominantly pertaining to hen harrier, which is considered in Chapter 7: Ornithology.
- It also referred to the proposed biodiversity and enhancement measures, particularly around measures which aimed to restore peatlands. The response referred to Forest to bog guidance, mainly NatureScot (2025) Peatland Action and IUCN (2024) Forest to Bog Restoration. These guidance documents, as well as all other comments in the scoping response, are fully considered in **Appendix 6-4**.

*Table 6-1 Organisations consulted regarding biodiversity.*

| Consultee | Response date | Summary of Response | Addressed in |
|---|---|---|---|
| Department of Agriculture, Food and the Marine (DAFM) | 11/03/2025 | The tree felling activities required as part of the Proposed Project will be the subject of a Felling Licence application to the Forest Service, in accordance with the Forestry Act 2014, the Forestry Regulations 2017 (SI 191/2017) and as per the Forest Service's policy on granting felling licenses for wind farm developments. | Will be addressed post consent. |
| Bat Conservation Ireland | No response | No response | N/A |
| Birdwatch Ireland | No response | No response | N/A |
| Clare County Council (Environment Department | No response | No response | N/A |
| Department of Housing, Local Government and Heritage | 27/01/226 | Response pertained to Archaeology only. | N/A |
| Inland Fisheries Ireland | No response | No response | N/A |
| Irish Peatland Conservation Council | No response | No response | N/A |
| Irish Raptor Study Group | No response | No response | N/A |

| | | | |
|---|---|---|---|
| Irish Red Grouse Association | No response | No response | N/A |
| Irish Wildlife Trust | No response | No response | N/A |

### 6.2.3 Field Surveys

A comprehensive survey of the biodiversity within the Site was 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 on various dates in 2017, 2018, 2019, 2020 and 2021 to support the 2021 EIAR. Additional ground truthing surveys undertaken in 2023, 2024, 2025, and 2026 are summarised in Table 6-2 below. This is to ensure that the impact assessment presented in this chapter, and the baseline information upon which it depends, is as up to date as possible, robust and accurate.

Ecological surveys were undertaken in line with TII (2008) guidelines (*Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes*).

*Table 6-2 Surveys carried out in 2023, 2024, 2025 and 2026.*

| Survey Type | Dates | Appendix |
|---|---|---|
| Multi-disciplinary walkover (incl. habitats) – Proposed Wind Farm Site | • 6th of September 2024<br>• 12th of September 2024<br>• 4th of February 2025<br>• 9th of April 2025<br>• 14th of July 2025<br>• 15th of July 2025<br>• 16th of July 2025 | N/A |
| Multi-disciplinary walkover – Biodiversity management and enhancement lands | • 9th of April 2025<br>• 10th of April 2025<br>• 3rd of February 2026<br>• 4th of February 2026 | N/A |
| Detailed Botanical Surveys – Irish Vegetation Classification (IVC) | • 14th of July 2025<br>• 15th of July 2025<br>• 16th of July 2025 | Botanical Report, **Appendix 6-2** |
| Badger/Mammal survey | • 3rd April 2025 | N/A |
| Marsh fritillary habitat appraisal/larval web surveys | • 6th of September 2024<br>• 12th of September 2024<br>• 4th of February 2025<br>• 14th of July 2025<br>• 15th of July 2025<br>• 16th of July 2025 | N/A |
| Bat Surveys | • Spring, Summer and Autumn 2024, 2025 and 2026 (inclusive of transect, static and roost inspection surveys) | Bat Report, **Appendix 6-1** |
| Aquatic surveys (including otter) | • September and October 2025 | Aquatics Report, **Appendix 6-3** |
| Multi-disciplinary walkover - Grid connection and TDR | • 10th of April 2025<br>• 16th July 2025 | N/A |

### 6.2.3.1 Multi-disciplinary Walkover Surveys (as per TII Guidelines, 2008)

Multidisciplinary walkover surveys were undertaken within the Site. The majority of surveys were undertaken within the recognised optimum period for vegetation surveys/habitat mapping, i.e. April to September (Smith *et al.*, 2011). No significant limitations are associated with the surveys which were undertaken outside the optimal survey season (e.g. surveys carried out in February), as these were primarily on mammals. 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. Other 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.), were also recorded. 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. Other targeted surveys undertaken within the Site are described in the following subsections.

### 6.2.3.2 Dedicated Habitat and Vegetation Composition Surveys

All habitats recorded on site and described in this EIAR chapter have been classified in accordance with Fossitt (2000). In addition, peatland habitats outside of the Project Footprint but within the EIAR Site Boundary are described in detail in this chapter. Full details of all the botanical surveys and results are provided in **Appendix 6-2** and an assessment of the potential for the Site to support Annex I habitats is also provided in this Appendix.

Botanical surveys of the Site were undertaken in 2025. These surveys provided an understanding of the baseline and informed further survey work following finalisation of the Proposed Project layout. The habitat assessment surveys described in this report have been undertaken in accordance with the following guidelines and interpretation documents:

- Smith, G.F. & Crowley, W. (2020) The habitats of cutover raised bog. Irish Wildlife Manuals, No. 128. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland. Version 2.0. Irish Wildlife Manuals, No. 79. National Parks and Wildlife Service.
- Commission of the European Communities (2013) *Interpretation manual of European Union habitats*. Eur 27. European Commission DG Environment.
- Foss, P.J. & Crushell, P. 2008, *Guidelines for a National Fen Survey of Ireland, Survey Manual.* Report for the National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Ireland.
- NPWS (2019) The Status of EU Protected Habitats and Species in Ireland. Habitat Assessments Volume 1. Version 1.1. Unpublished Report, National Parks and Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.
- NPWS (2025). The Status of EU Protected Habitats and Species in Ireland. Volume 1: Summary Overview. Unpublished NPWS report. Edited by: Domhnall Finch, Aoife Delaney, Fionnuala O'Neill and Deirdre Lynn
- Martin, J.R., O'Neill, F.H. & Daly, O.H. (2018), The *monitoring and assessment of three EU Habitats Directive Annex I grassland habitats*. Irish Wildlife Manuals, No. 102. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

- O'Neill, F.H., Martin, J.R., Devaney, F.M. & Perrin, P.M. (2013), *The Irish semi-natural grasslands survey 2007-2012*. Irish Wildlife Manuals, No. 78. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland.
- Perrin, P., Martin, J., Barron, S., O'Neill, F., McNutt, K. & Delaney, A. (2008) National Survey of Native Woodlands 2003-2008. Unpublished report submitted to National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin

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).

#### 6.2.3.2.1 Vegetation composition assessment

Detailed habitat classification and assessment was undertaken by MKO at targeted locations within the Project Footprint, with relevés[11] undertaken in 2025 within representative habitats at each turbine base, repository areas, met mast, construction compounds and substation (including battery storage facility). The extent of each habitat on site was mapped using aerial photography, handheld GPS and smartphone technology (Arc GIS Field Maps). A representative photograph was also taken for each of the habitats recorded on site, including all relevés. The location of all relevé locations is shown in **Appendix 6-2**.

The survey results were then analysed in accordance with 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)[12] is a web application for assigning vegetation data to communities defined by the Irish Vegetation Classification (IVC). Data can be uploaded, checked for errors, and analysed and the results can then be downloaded. ERICA works with both quantitative vegetation cover data (such as are recorded in relevés and other types of botanical recording plots) and presence/absence data, such as species lists. ERICA covers grasslands, woodland, duneland, heaths, bogs, fens, mires, freshwater, saline waters, rocky habitats, scrub, strandline, saltmarsh and weed communities (Perrin, 2019).

The data collected from the botanical assessments was uploaded to ERICA, analysed and the resulting 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 utilizing the clustering analysis. This categorizing procedure was utilized to determine if the Relevés within the study area had any affinity to Annex I habitats and whether further assessment was required.

[11] *Relevés, or survey plots, included 2m x 2m (for grassland and peat habitats) or 10m x 10m (for woodland) sample areas within which all species and their percentage cover was recorded. Physical characteristics and Irish Grid reference were also noted for each relevé.*
[12] *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: February 2026*

*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 92/43/EEC, were identified and classified as Key Ecological Receptors (KERs).

### 6.2.3.3 Terrestrial Fauna Surveys

The results of the desk study, scoping replies and incidental records of protected species recorded during multidisciplinary walkover surveys were all used to inform the scope of targeted ecological surveys required. Based on these findings dedicated surveys for bats, otter and badger were undertaken at the times set out below following the methodologies also provided below. During the multidisciplinary walkover surveys, records of invertebrates including butterflies, damselflies, dragonflies, moths, beetles etc. were recorded. As suitable marsh fritillary habitat was identified following initial site visits and based on records in the wider area following the desk study, dedicated marsh fritillary butterfly surveys were carried out.

#### 6.2.3.3.1 *Bat Surveys*

A full detailed description of survey methodologies undertaken at the site in 2024, 2025 and 2026 is provided
in the Bat Report included as **Appendix 6-1** to this report, along with details of the survey times and the surveyors who carried out the bat survey and assessment work. Survey design and impact assessment were guided by current legislation, scientific literature, and best-practice guidance, with full consideration given to spatial, temporal, and behavioural patterns relevant to bat ecology.

Surveys undertaken were undertaken in strict accordance with those prescribed in NatureScot (2021), (Previously SNH, 2019) 'Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation'. This is in line with standard best practice industry guidelines.

Bat habitat appraisals were carried out in 2024, 2025 and 2026. During these surveys, habitats within the Site were assessed for their suitability to support roosting, foraging, and commuting bats. Connectivity with the wider landscape was also considered. Suitability was assessed according to Collins (2023) which provides a grading protocol for roosting habitats and for commuting and foraging areas. Suitability categories are divided into *High*, *Moderate*, *Low*, *Negligible* & *None* as described in **Appendix 6-1**.

Targeted surveys for bats further included the following, which are fully described in Section 3.3 of **Appendix 6-1**:

- Roost daytime inspections and emergence surveys
- Manual transects
- Ground level static surveys

The mitigation outlined in this report has been designed in accordance with NatureScot, 2021. Consideration was also given to the Northern Ireland Environment Agency (NIEA) Natural

Environment Division (NED) Guidance, which was produced in August 2021 (amended May 2022), following the completion of the bat surveys at Site.

Additionally, a full detailed description of the Collision Risk to bat species was undertaken and is described in Section 3.6 of **Appendix 6-1**.

#### 6.2.3.3.2 *Badger Surveys*

Forestry, open grassland and heath habitat, hedgerow, and earth banks within the Site provide potential suitable supporting habitat for badger. Therefore, a dedicated mammal survey was undertaken in April 2025, to determine the presence or absence of badger signs within the Site. Surveys were conducted adhering to best practice guidance *Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Roads Schemes* (TII, 2008) and *Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes* (TII, 2005). Incidental records of badger signs were also considered during the multidisciplinary surveys.

The badger surveys were conducted in order to determine the presence or absence of badger signs within and adjacent to the Project Footprint. The Badger survey involved a search for all potential badger signs as per TII (2008) (latrines, badger paths and setts) and SNH (2003):

- Faeces: Badgers usually deposit faeces in characteristic excavated pits, concentrations of which (latrine sites) are typically found at home range boundaries.
- Setts, comprising either single isolated holes or a series of holes, likely to be interconnected underground.
- Paths between setts or leading to feeding areas.
- Scratching posts at the base of tree trunks.
- Snuffle holes (small scrapes where Badgers have searched for insects, earthworms, and plant tubers).
- Day nests (bundles of grass and other vegetation where Badgers may sleep above ground).
- Hair traces.
- Prints.

If/where encountered, setts are classified using the conventions set out in TII (2005). Classification of setts as per the Best Practice Badger Survey Guidance Note provided by SNH (2003) is provided in Table 6-4 below.

*Table 6-4 Classification of Badger Setts (Definition as per SNH 2003)*

| Sett Type | Description |
|---|---|
| Main | Several holes with large spoil heaps and obvious paths emanating from and between sett entrances. |
| Annexe | Normally less than 150m from main sett, comprising several holes. May not be in use all the time, even if main sett is very active. |
| Subsidiary | Usually at least 50m from main sett with no obvious paths connecting to other setts. May only be used intermittently. |
| Outlier | Little spoil outside holes. No obvious paths connecting to other setts and only used sporadically. May be used by Foxes and rabbits. |

Main setts normally have a large number of entrances (both used and disused), with obvious heaps of spoil. These setts look well used, with obvious tracks between entrances. Annexe setts lie close to the main sett, between 50 and 150m away, and are connected by tracks. They usually have several holes but may not be in use all the time. Subsidiary setts are not connected to another sett by obvious paths and are not continuously active. Outlier setts have usually just one or two holes, without obvious spoil heaps or paths. They are used by badgers sporadically and are often taken over by foxes and rabbits (Smal, 1995).

#### 6.2.3.3.3 Red Squirrel and Pine Marten Surveys

As part of the dedicated mammal surveys, as well as the multidisciplinary surveys, red squirrel and pine marten surveys were undertaken within areas of suitable habitat (coniferous forestry plantation) occurring in close proximity to the Project Footprint. Areas of conifer plantation in particular, occurring within the Site, were searched for signs of activity for both species, including feeding remains/tables, scat, dreys and dreys.

#### 6.2.3.3.4 Marsh Fritillary Surveys

Previous surveys for marsh fritillary were carried out by MKO in September 2017 and 2018 in support of the 2021 EIAR within the site.

##### September 2024

Taking account of the findings of these previous surveys, which were reviewed as part the desk study, as well other available resources outlined in Section 6.2.1, targeted larval web surveys for this species were undertaken on the 6th and 12th of September 2024 within areas of the Site Containing supporting habitat for this species. The surveys were undertaken within the optimal period for undertaking marsh fritillary larval web surveys, i.e. August – September, on dry days, with no rain and no to little wind.

The larval web survey methodology followed that described in the best practice guidance document entitled *Guidelines for Assessment of Ecological Impacts of Transport Infrastructure Ireland (TII, 2009).* This involved walked surveys to identify suitable areas of marsh fritillary habitat within or adjacent to the Project Footprint and to search for larval webs.

Areas of potential supporting habitat were assessed with consideration to sward heights and structure, presence of the larval foot plant of marsh fritillary, Devils bit scabious, and scrub cover. The larval web survey consisted of searching for marsh fritillary webs on the basal leaves of Devils bit scabious, the larval food plant of this species.

Surveys were walked in a zig zag pattern to maximise coverage along each transect. Areas of potential suitable habitat were mapped as part of the survey effort. Survey effort is shown in Figure 6-6.

##### July 2025

Further targeted habitat suitability assessments were undertaken in areas of the Site which fell within and/or adjacent to the Project Footprint in July 2025, and followed the methodology set out by the National Biodiversity Data Centre (NBDC) Marsh Fritillary Monitoring Scheme[13]. The 2025 habitat assessment survey locations are shown in Figure 6-7.

Habitat assessments consisted of walked transects, using a zigzag pattern, stopping at regular intervals every 20m. Transects were undertaken at each element of the Project Footprint (with the exception of those within Conifer planation (WD4) which would not constitute suitable supporting marsh fritillary habitat), and covered representative habitats within the Project Footprint. These surveys were also representative of potential supporting habitat for marsh fritillary across the wider Proposed Wind Farm Site, as shown in Figure 6-6, given the consistency of habitats throughout this area. At each survey location the following parameters were recorded, as per the methodology set out by NBDC:

- Vegetation height
- Devils bit scabious density
- Presence of a structured vegetation

[13] *Marsh Fritillary Monitoring Scheme https://biodiversityireland.ie/app/uploads/2025/11/Marsh-Fritillary-Habitat-Condition-Form_v32025.pdf Accessed 04th of February 2026*

- Presence of low invading scrub
- Evidence of stock grazing

Using the above parameters, and following the methodology set out by NBDC, habitat suitability was categorised as one of the following:

- Unsuitable – UN
- Suitable (under grazed) – SU
- Suitable (over grazed) – SO
- Good condition – GC

Surveys were undertaken within the Proposed Wind Farm Site only, as effects are unlikely to arise for this species on other parts of the Site. Full survey data for these surveys are provided in **Appendix 6-6**.

### 6.2.3.4 Aquatic Surveys

Aquatic Baseline Surveys were undertaken by Mark Whelan (B.Sc., M.Sc.) and Niamh Rowan (B.Sc.) of MKO on the 9th, 10th, 25th and 26th of September 2025. Further Aquatic Surveying was undertaken by Cuan Feeley (B.Sc.) and Aran von der Geest Moroney (B.Sc.) on the 2nd of October 2025.

Full details on methodologies for aquatic surveys are provided in **Appendix 6-3**.

A total of fourteen survey sites across seven separate EPA watercourses were selected for assessment for the Proposed Wind Farm Site, with a further four survey sites along the Proposed Grid Connection Site (See Table 1-1 and Figure 1-1 of **Appendix 6-3**). The eighteen survey sites in the vicinity of the Proposed Wind Farm Site and Proposed Grid Connection Site were located within the Mal Bay Catchment (EPA ID: 28), of which six sites were located within the Inagh[Ennistymon]_SC_010 sub catchment, while twelve sites were located within the Annagh[Clare]_SC_010 sub catchment.

Surveys undertaken at each survey site consisted of:

- River habitat assessments
- Fisheries habitat assessment
- Electrofishing surveys
- Macroinvertebrate surveys
- Otter surveys
- eDNA surveys
- Kingfisher habitat suitability assessments

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

In preparation of the desk study, the following sources were used to gather information:

- Review of online web-mappers: National Parks and Wildlife Service (NPWS), EPA, Water Framework Directive (WFD), Fisheries Ireland.
- Review of OS maps and aerial photographs of the survey area.

### 6.2.3.5 Invasive species survey

During the multidisciplinary walkover surveys, a search for non-native invasive species was undertaken. The survey focused on the identification of invasive species listed under the Third Schedule of the European Communities Regulations 2011 (S.I. 477 of 2015) and the First Schedule of the European Union (Invasive Alien Species) Regulations 2024 (S.I. No 374 of 2024). Where recorded, the extent and location of infestations was recorded, along with photographs.

### 6.2.3.6 Survey Limitations

The field surveys were carried out during suitable weather conditions and the Site was fully accessible.

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.

No limitations in the scope, scale or context of any survey effort has been identified. Overall, a comprehensive assessment has been achieved.

## 6.2.4 Methodology for Assessment of Impacts and Effects

### 6.2.4.1 Identification of Target Receptors and Key Ecological Receptors

The methodology for assessment followed a precautionary screening approach with regard to the identification of Key Ecological Receptors (KERs). Following a comprehensive desk study, site visits and stakeholder consultation; "Target receptors" likely to occur in the zone of influence of the development 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 Special Areas of Conservation (SAC) within the likely Zone of Influence.
- Special Conservation Interests (SCI) of Special Protected Areas (SPA) within the Likely Zone of Influence.
- Species protected under the Wildlife Acts 1976 (as amended)
- Species protected under the Flora Protection Order 2022

### 6.2.4.2 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 'Guidelines for Assessment of Ecological Impacts of National Roads Schemes' (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. The 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 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 TII (2009) are considered to be Key Ecological Receptors (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 Key Ecological Receptors and are therefore not assessed within the impact assessment.

### 6.2.4.3 Characterisation of Impacts and Effects

The ecological effects of potential impacts arising from the Proposed Project are characterised as per the CIEEM 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (2018). These

guidelines are the industry standard for the completion of Ecological Impact Assessment in the UK and Ireland. This chapter has also been prepared in accordance with the corresponding EPA guidance (EPA 2022). The headings under which the impacts are characterised follow those listed in the guidance document and are applied where relevant. A summary of the impact characteristics considered in the assessment is provided below:

- **Positive or Negative.** Assessment of whether the Proposed Project results in a positive or negative effect on the ecological receptor.
- **Extent.** Description of the spatial area over which the effect has the potential to occur.
- **Magnitude** 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.

#### 6.2.4.4 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 CIEEM (2018).

For the purpose of Ecological Impact Assessment (EcIA), 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local (CIEEM, 2018).

When determining significance, consideration is given to whether:

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

The EPA Guidelines on information to be included in Environmental Impact Assessment Reports (EPA, 2022) and the *Guidelines for assessment of Ecological Impacts of National Road Schemes*, (TII, 2009) were also considered when determining significance and the assessment is in accordance with those guidelines.

As per TII (TII, 2009) and CIEEM (CIEEM, 2018) best practice guidelines, the following key elements should also be examined when determining the significance of effects:

- The likely effects on 'integrity' should be used as a measure to determine whether an impact on a site is likely to be significant (TII, 2009).
- A 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives (CIEEM, 2018).

### Integrity

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

#### 6.2.4.5 Incorporation of Mitigation

Section 6.5 of this Biodiversity Chapter assesses the potential effects of the Proposed Project to ensure that all effects on KERs are adequately addressed. Where significant effects on KERs are predicted, mitigation is incorporated into the project design or layout to address such impacts. The implemented mitigation measures aim to avoid, reduce or offset potential significant residual effects, post mitigation.

## 6.3 Establishing the Ecological Baseline

### 6.3.1 Desk Study

The following sections describe the results of a review 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 Zone of Influence, as compiled by the National Parks and Wildlife Service (NPWS) of the Department of Housing, Local Government and Heritage, bird and plant distribution atlases and other research publications.

#### 6.3.1.1 Hydrology

Full details on the hydrology and hydrogeology of the Site are included in Section 9.3 of Chapter 9: Hydrology and Hydrogeology. Information pertinent to this Chapter has been reviewed, which includes the following from Chapter 9:

- Regional and Local Hydrology – Section 9.3.3.
- Surface Water Quality – Section 9.3.7.
- Water Framework Directive Water Body Status – Section 9.3.11.
- Surface Water Body Status – Section 9.3.13.
- Groundwater Body Status – Section 9.3.12.

#### 6.3.1.2 Designated Sites

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

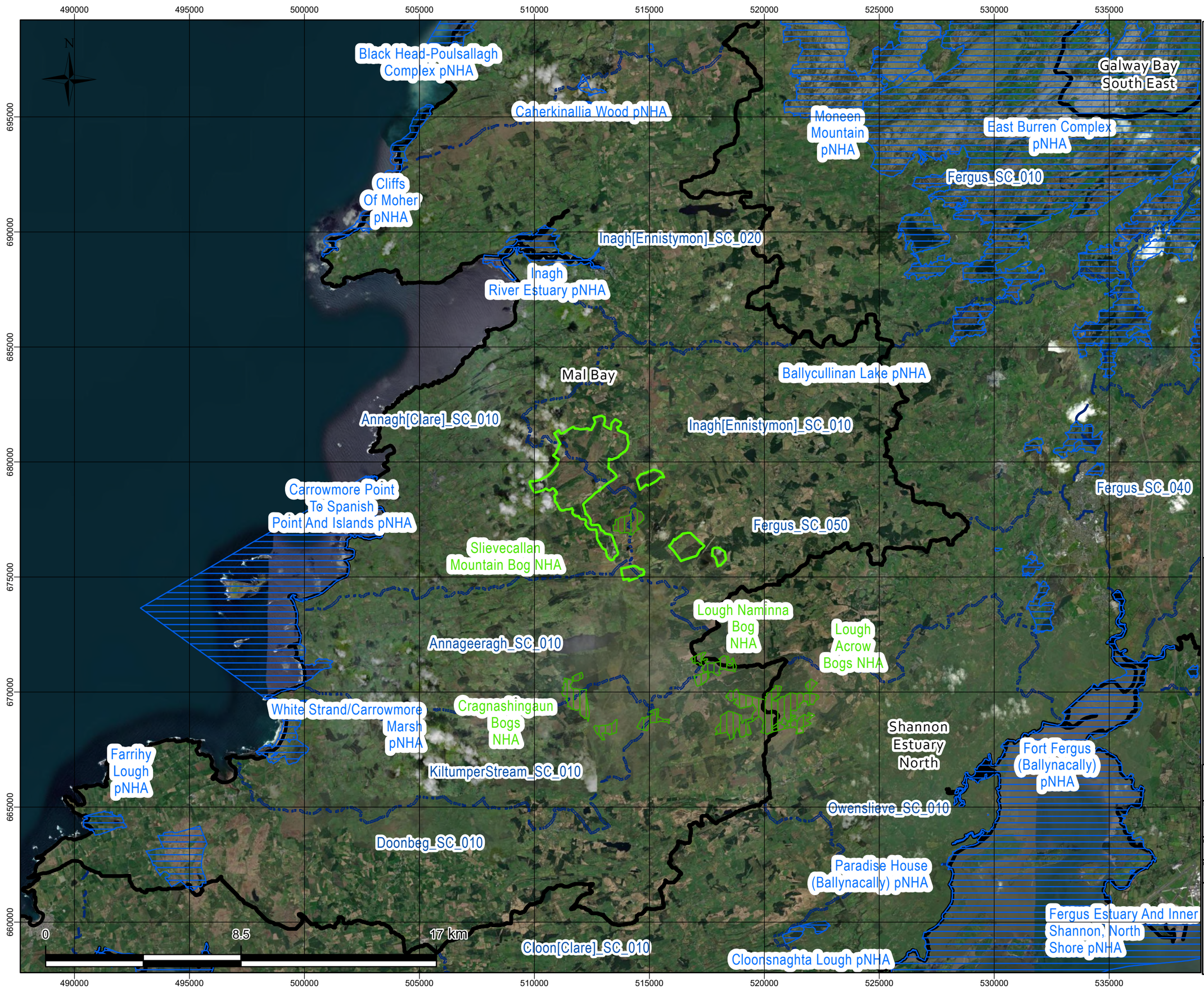
A map of all Nationally Designated Sites within the vicinity of the Proposed Project is provided in Figure 6-3 with all the European Sites shown in Figure 6-4.

Table 6-5 provides details of all relevant Nationally designated sites initially considered to potentially be within the Zone of Influence (ZoI) of the Proposed Project.

All European Designated Sites are fully described and assessed in the NIS which accompanies this planning application. In summary, four European sites were identified to be within the ZoI of the Proposed Project, and consisted of the following:

- Inagh River Estuary SAC (000036)
- Carrowmore Point to Spanish Point and Islands SAC (001021)
- Mid-Clare Coast SPA (004182)
- Cliffs of Moher SPA (004005)

Potential for likely significant effects on these European Sites was identified at the screening stage of the NIS via deterioration of water quality (and associated indirect effects on QI habitats and QI/SCI species), disturbance/displacement and collision risk of Special Conservation Interest (SCI) bird species, and the spread of invasive species during the construction, operation, and/or decommissioning phases of the Proposed Project in the absence of mitigation.



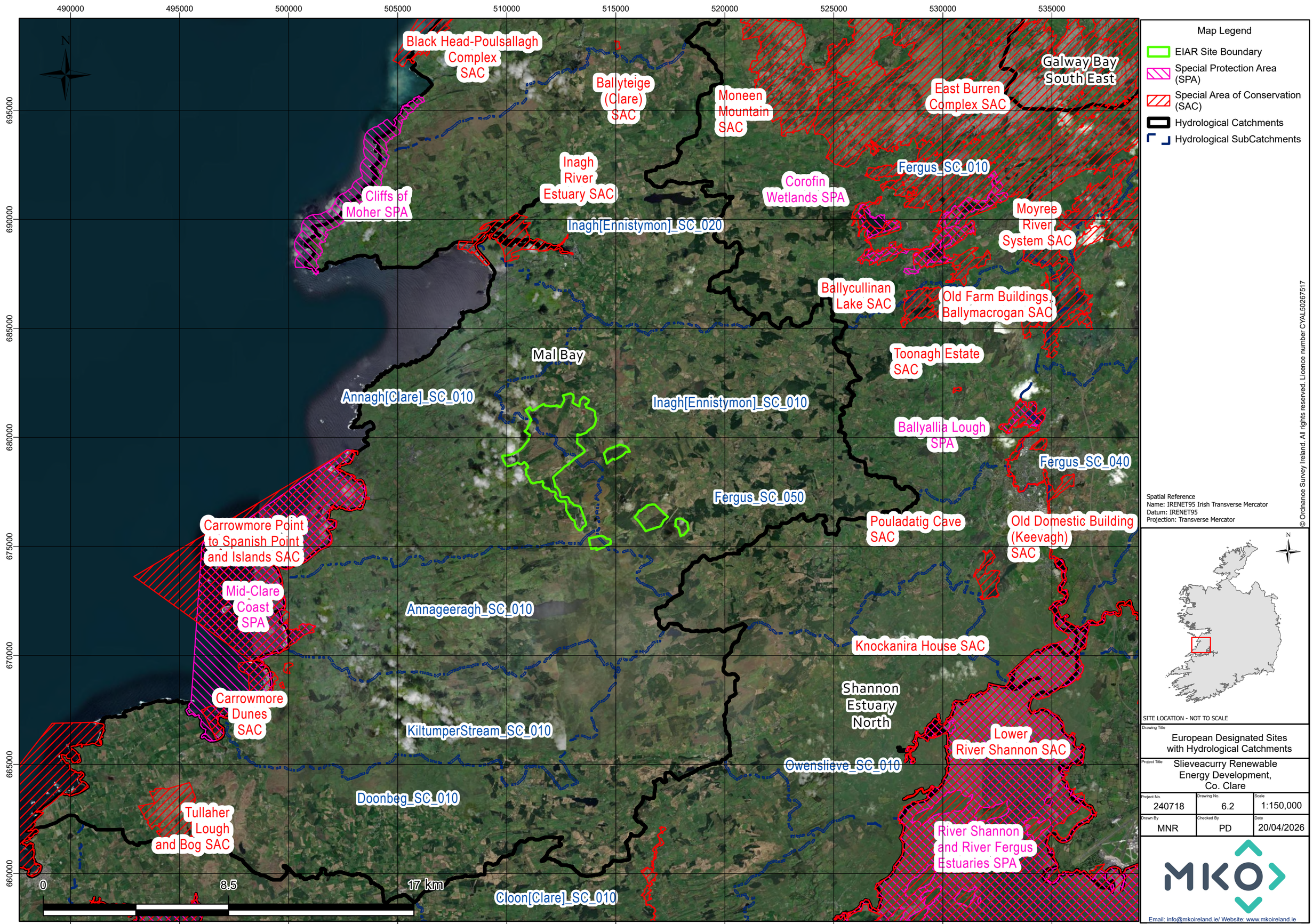

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Drawing Title
Nationally Designated Sites with Hydrological Catchments

Project Title
Slieveacurry Renewable Energy Development, Co. Clare

| Project No. | Drawing No. | Scale |
|---|---|---|
| 240718 | 6.1 | 1:150,000 |
| Drawn By | Checked By | Date |
| MNR | PD | 20/04/2026 |

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




## Map Legend

- EIAR Site Boundary
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- Hydrological Catchments
- Hydrological SubCatchments

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

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SITE LOCATION - NOT TO SCALE

Drawing Title
European Designated Sites with Hydrological Catchments

Project Title
Slieveacurry Renewable Energy Development, Co. Clare

| Project No. | Drawing No. | Scale |
|---|---|---|
| 240718 | 6.2 | 1:150,000 |

| Drawn By | Checked By | Date |
|---|---|---|
| MNR | PD | 20/04/2026 |

MKO
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*Table 6-5 Identification of Nationally designated sites within the Likely Zone of Influence*

| Designated Site | Features of Interest [14] | Likely Zone of Influence Determination |
|---|---|---|
| **Natural Heritage Areas** | | |
| Slievecallan Mountain Bog NHA [002397]<br><br>**Approx. Distance:** 0.21 km | › Peatlands [4] | The Site is located entirely outside of these NHAs and therefore, no pathway for significant direct effect exists.<br><br>Given the intervening distance between these NHAs and the Proposed Project, as well as the terrestrial nature of their features of interest, no pathway for significant indirect effect exists.<br><br>No pathway for effect was identified, and the site is **not** within the Likely Zone of Influence. |
| Cragnashingaun Bogs NHA [002400]<br><br>**Approx. Distance:** 5 km | › Peatlands [4] | |
| Lough Naminna Bog NHA [002367]<br><br>**Approx. Distance:** 5.4 km | › Peatlands [4] | |
| Lough Acrow Bogs NHA [002421]<br><br>**Approx. Distance:** 7.6 km | › Peatlands [4] | |
| **Proposed Natural Heritage Area (pNHA)** | | |
| Inagh River Estuary pNHA [000036] | › No NPWS Site Synopsis available. However, it overlaps with the Inagh River Estuary SAC which is | The Site is located entirely outside the boundary of this pNHA and therefore, no pathway for significant direct effect exists. |

[14] *Available on NPWS website https://www.npws.ie/protected-sites/nha {Accessed 4th of March 2026]*

| | | |
|---|---|---|
| **Approx. Distance:** 6.8 km | designated for coastal sand dune and salt meadow habitats. | The north-eastern portion of the Site drains to the Inagh [Ennistymon] River (EPA Code: 28I01]. This is via the Fahanlunaghtamore Order 1 and Order 2 streams which traverse the site of the Proposed Project, in addition to unnamed Order 1 streams. These mapped watercourses ultimately discharge to the Inagh River Estuary pNHA approximately 20.5 km downstream.<br><br>**Given the hydrological connectivity which exists, this pNHA is therefore within the Likely Zone of Influence of the Proposed Project and further assessment is required.** |
| Carrowmore Point to Spanish Point and Islands pNHA [001021]<br><br>**Approx. Distance:** 7.2 km | › No NPWS Site Synopsis available. However, it overlaps with the Carrowmore Point to Spanish Point and Islands SAC and the Mid Clare Coast Spa, which are designated for coastal habitats and birds. | The Site is located entirely outside of the boundary of this pNHA and therefore no pathway for significant direct effect exists.<br><br>The western portion of the Site drains to the Annagh [Clare] River (EPA Code: 28A03]. This is via several second order mapped watercourses that traverse the site of the Proposed Project. These mapped watercourses ultimately discharge to the Carrowmore Point to Spanish Point and Islands pNHA approximately 9.8 km downstream.<br><br>**Given the hydrological connectivity which exists, this pNHA is therefore within the Likely Zone of Influence of the Proposed Project and further assessment is required.** |
| Cliffs Of Moher pNHA [000026]<br><br>**Approx. Distance:** 12.3 km | › No NPWS Site Synopsis available However, it overlaps with the Cliffs Of Moher SPA which is designated for coastal birds. | The Site is located entirely outside of this pNHA and therefore, no potential for direct effect exists.<br><br>No pathway for significant effect was identified as no hydrological connectivity exists between the site of the Proposed Project and this pNHA. This pNHAs and the site of the Proposed Project are located in separate WFD sub-catchments, in addition to there being significant intervening terrestrial distance between the sites.<br><br>No pathway for effect was identified and the site is **not** within the Likely Zone of Influence. |
| Caherkinallia Wood pNHA [001024]<br><br>**Approx. Distance:** 13.4 km | › Deciduous woodland. | The Site is located entirely outside of this pNHA and therefore, no potential for direct effect exists.<br><br>No pathway for significant effect was identified on this pNHA is anticipated, given the terrestrial nature of this pNHA and significant intervening terrestrial distance between the sites.<br><br>No pathway for effect was identified and the site is **not** within the Likely Zone of Influence. |
| White Strand/Carrowmore Marsh pNHA [001007] | › No NPWS Site Synopsis available However, it overlaps with the Carrowmore Dunes SAC and the Mid Clare Coast Spa, which are | The Site is located entirely outside of this pNHA and therefore, no potential for direct effect exists. |

| | | |
|---|---|---|
| **Approx. Distance:** 13.7 km | designated for coastal habitats and birds. | No pathway for significant effect was identified as no hydrological connectivity exists between the site of the Proposed Project and this pNHA. This pNHAs and the site of the Proposed Project are located in separate WFD sub-catchments, in addition to there being significant intervening terrestrial distance between the sites.<br><br>No pathway for effect was identified and the site is **not** within the Likely Zone of Influence. |

#### 6.3.1.3 NPWS Article 17 Reporting

A review of the Article 17 data 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 (reviewed 16/02/2026). Available NPWS datasets were downloaded and overlain on the Site. None of the NPWS GIS datasets contain polygon or point data within the Site and there are no records for Annex I bog, or heath habitats recorded within these datasets within or immediately adjacent to the Site. The nearest Article 17 mapped habitats recorded comprise of an area of bog containing both Dry Heath [4030] and Alpine and Subalpine Heath [4060]. This is located approximately 300m northeast of the Proposed Grid Connection Site on the summit of Slievecallan.

505000 510000 515000 520000

685000

680000

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## Map Legend

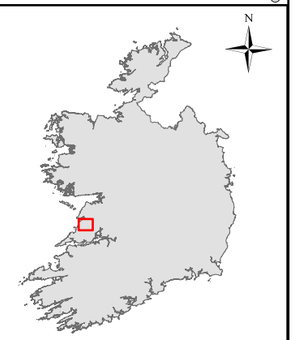
- EIAR Site Boundary
- National Survey of Native Woodlands
- Irish Semi-Natural Grassland Survey

Article 17 Habitats

- Active Blanket Bog Poly
- Alpine and Subalpine Heath Poly
- Dry Heath Poly
- Large Shallow Inlets and Bays
- Old Oak Woodlands
- Wet Heath Poly

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

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SITE LOCATION - NOT TO SCALE

Drawing Title
Article 17 Habitats

Project Title
Slieveacurry Wind Farm, Co. Clare

| Project No. | Drawing No. | Scale |
|---|---|---|
| 240718 | 6.3 | 1:60,000 |
| Drawn By | Checked By | Date |
| MNR | PD | 24/03/2026 |

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

### 6.3.1.4 Vascular plants

A search was made in the New Atlas of the British & Irish Flora (Preston et al., 2002) to investigate whether any rare or unusual plant species listed as Annex II of the Habitats Directive, Ireland Red List no 10 Vascular Plants (Wyse Jackson et al., 2016) or protected under the Flora (Protection) Order, 2022 had been recorded in the relevant 10km squares in which the study site is situated (R17 and R18) during the 1987-1999 atlas survey. Each hectad contains 100 whole one kilometre squares containing terrestrial habitats. Species of conservation concern are given in Table 6-6. No species listed in Annex II of the Habitats Directive, or the Flora (Protection) Order are shown in the atlas for square R17 and R18.

*Table 6-6 Species designated under the Flora Protection Order or the Irish Red Data Book which occur within Hectads R17 and R18.*

| Common Name | Scientific Name | Status | Hectad |
|---|---|---|---|
| Small White Orchid | *Pseudorchis albida* | FPO; VU | R18 |

*Near Threatened (NT), Vulnerable (VU), Critically Endangered (CR), Regionally Extinct (RE)*

#### 6.3.1.4.1 *Bryophytes*

A search of the NPWS online data map[15] for bryophytes (accessed 19/03/2026) was also undertaken, with no protected bryophytes recorded within or adjacent to the Site.

### 6.3.1.5 National Biodiversity Data Centre (NBDC) Records

A search of the National Biodiversity Data Centre (NBDC) website was conducted on the 4th of February 2026 to provide a baseline of likely species composition in the area. Records of protected fauna recorded from hectads R17 and R18 are provided in Table 6-7.

*Table 6-7 NBDC records for species of conservation interest in hectad R17 and R18.*

| Common name | Scientific name | Designation | Hectad |
|---|---|---|---|
| Common Frog | *Rana temporaria* | HD Annex V, WA | R17, R18 |
| Smooth Newt | *Lissotriton vulgaris* | WA | R17 |
| Common Lizard | *Zootoca vivipara* | WA | R17, R18 |
| Marsh Fritillary | *Euphydryas aurinia* | HD Annex II, WA | R17, R18 |
| European Otter | *Lutra lutra* | HD Annex II, IV, WA | R17, R18 |
| Eurasian Badger | *Meles meles* | WA | R17, R18 |
| Eurasian Red Squirrel | *Sciurus vulgaris* | WA | R17, R18 |
| Pine Marten | *Martes martes* | HD Annex V, WA | R17, R18 |
| West European Hedgehog | *Erinaceus europaeus* | WA | R18 |
| Brown Long-eared Bat | *Plecotus auritus* | HD Annex IV, WA | R17, R18 |
| Natterer's Bat | *Myotis nattereri* | HD Annex IV, WA | R17, R18 |
| Daubenton's Bat | *Myotis daubentonii* | HD Annex IV, WA | R18 |
| Eurasian Pygmy Shrew | *Sorex minutus* | WA | R17 |
| Pipistrelle | *Pipistrellus pipistrellus sensu lato* | HD Annex IV, WA | R17, R18 |
| Leisler's Bats | *Nyctalus leisleri* | HD Annex IV, WA | R17, R18 |
| Soprano pipistrelle | *Pipistrellus pygmaeus* | HD Annex IV, WA | R17, R18 |
| Whiskered Bat | *Myotis mystacinus* | HD Annex IV, WA | R18 |

*HD = EU Habitats Directive; WA = Wildlife Acts (Ireland).*

[15] https://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=71f8df33693f48edbb70369d7fb26b7e *[Accessed 19th of March 2026]*

### 6.3.1.6 National Bat Database of Ireland

Full details of the desktop studies in relation to bats are detailed in the Bat Report, **Appendix 6-1**. As per Article 17 reporting, the site is located within range of 7 bat species, including Brown long-eared, Natterer's bat, Common pipistrelle, Soprano pipistrelle, Daubenton's Bat, Whiskered Bat and Lesser horseshoe bat.

### 6.3.1.7 NPWS Protected Species Records

National Parks and Wildlife Service (NPWS) online records were searched to see if any rare or protected species of flora or fauna have been recorded from hectads R17 and R18. An information request was also sent to the NPWS scientific data unit requesting records from the Rare and Protected Species Database on the 4th of April 2025. A response was received on the 9th of July 2025. Table 6-8 lists rare and protected species records obtained from NPWS.

*Table 6-8 NPWS records for rare and protected species.*

| Common name | Scientific name | Designation |
|---|---|---|
| Hen harrier | *Circus cyaneus* | BD Annex I |
| Freshwater Pearl Mussel | *Margaritifera margaritifera* | HD Annex II, V, WA |
| Greenland White Fronted Goose | *Anser albifrons flavirostris* | BD Annex I |

*HD = Habitats Directive, BD = Birds Directive, WA = Wildlife Act*

### 6.3.1.8 Invasive Species

The NBDC database also contains records of invasive species identified within the relevant hectads. Records of Third and First Schedule invasive species for hectads R17 and R18 are provided in Table 6-9.

*Table 6-9 NBDC records for invasive species (hectads R17 and R18)*

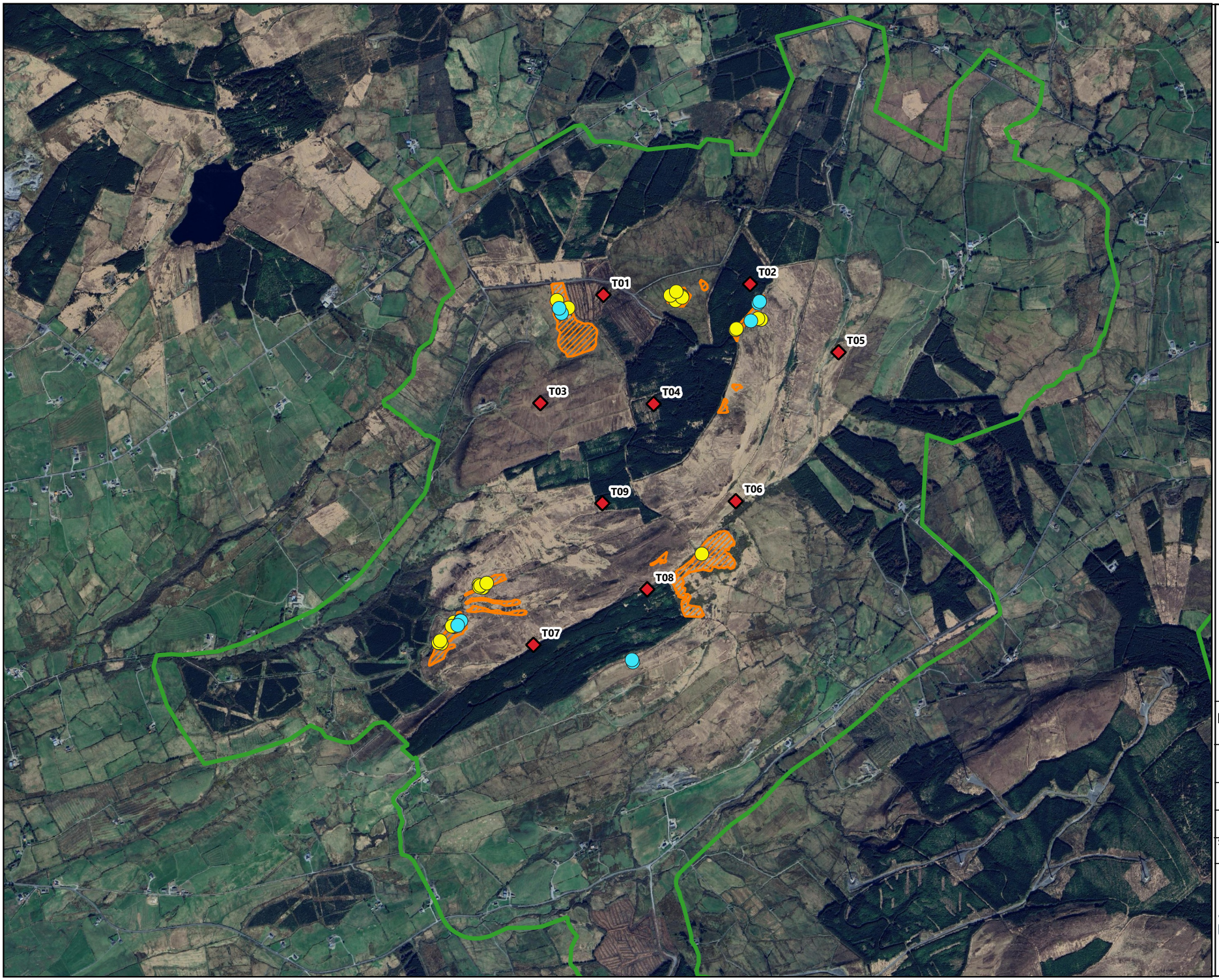
| Common Name | Scientific Name | Hectad |
|---|---|---|
| Japanese Knotweed | *Reynoutria japonica* | R17, R18 |
| Giant knotweed | *Fallopia sachalinensis* | R18 |
| Rhododendron | *Rhododendron ponticum* | R17, R18 |
| Zebra Mussel | *Dreissena (Dreissena) polymorpha* | R17 |
| Fallow Deer | *Dama dama* | R17, R18 |

### 6.3.1.9 Freshwater Pearl Mussel (*Margaritifera margaritifera*)

The NPWS *Margaritifera* Sensitive Area map (Version 10, 2020) was consulted during the desk study. There is no surface water connectivity between the Proposed Wind Farm Site and/or Proposed Grid Connection Site and any *Margaritifera* catchment. However, one section of the Proposed enhancement site, the southernmost section, is partially located within the Annageeragh Margaritifera Sensitive Area.

### 6.3.1.10 Marsh Fritillary (*Euphydryas aurinia*)

The closest NBDC records for marsh fritillary were located in the hectad R17 within which the Proposed Project is located. Additionally, on review of the previous wind farm application (Planning Ref. P20/806, 21/370 and 21/1226) within the Site, it was identified that this species was recorded within the Site. Surveys undertaken in 2017 and 2018 recorded larval webs for these species, as shown in Figure 6-4. This Figure also shows areas identified as suitable marsh fritillary habitat in 2018.




## Map Legend

- EIAR Site Boundary
- Proposed Turbine Layout
- Marsh Fritillary Larval Webs 2017
- Marsh Fritillary Larval Webs 2018
- Identified Suitable Marsh Fritillary habitat in 2018

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| | |
|---|---|
| Drawing Title | Marsh Fritillary Records: 2017 and 2018 |
| Project Title | Proposed Wind Farm Development at Slieveacurry, Co. Clare |
| Drawn By: PD | Checked By: CK |
| Project No.: 240718 | Drawing No.: Figure 6-4 |
| Scale: 1:22,000 | Date: 2026-04-17 |

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### 6.3.1.11 Conclusions of the Desktop Study

The desktop study has provided information about the existing environment in hectads R17 and R18, within which the Site is located. The Proposed Project is located in the Mal Bay surface water catchment. On a more local scale, the site is located in both the Annagh[Clare]_SC_010 and Inagh[Ennistymon]_SC_010 sub-catchments.

The Site is drained via the Ballynew stream (28B27), the Fahanlunaghtamore stream (28F09), the Letterkelly stream (28L07), and the Knockacarn stream (28L07), which have downstream connectivity to the following European and National Sites:

- Inagh River Estuary SAC (000036)
- Carrowmore Point to Spanish Point and Islands SAC (001021)
- Mid-Clare Coast SPA (004182)
- Inagh River Estuary pNHA [000036]
- Carrowmore Point to Spanish Point and Islands pNHA [001021]

The desk study identified that a variety of protected faunal species are known to occur within hectads R17 and R18. The species recorded during the desk study informed the survey methodologies undertaken during the site visits as well as the identification of pathways for potential impacts on sensitive ecological receptors.

# 6.4 Description of the Existing Environment

## 6.4.1 Description of Habitats & Flora within the Ecological Survey Area

Detailed botanical data from relevés recorded at the Proposed Wind Farm Site are provided in **Appendix 6-2** of this EIAR. A habitat map of the Site is provided in Figure 6-5. A map showing the Project Footprint overlaying the habitat map is provided in Figure 6-6.

A total of 22 habitats were recorded within the Site, which are listed in Table 6-10 below.

*Table 6-10 Habitats recorded on the Site*

| Habitat Name | Fossitt Code |
|---|---|
| Conifer plantation | WD4 |
| Recently felled woodland | WS5 |
| Upland blanket bog | PB2 |
| Wet Heath | HH3 |
| Cutover bog | PB4 |
| Transition mire and quaking bog | PF3 |
| Eroding blanket bog | PB5 |
| Exposed siliceous rock | ER1 |
| Wet grassland | GS4 |
| Scrub | WS1 |
| Hedgerow | WL1 |
| Wet willow alder ash woodland | WN6 |
| Spoil and bare ground | ED2 |
| Buildings and artificial surfaces | BL3 |
| Stone walls and other stonework | BL1 |
| Eroding/upland rivers | FW1 |
| Drainage ditches | FW4 |
| Recolonising bare ground | ED3 |
| Lowland blanket bog | PB3 |
| Reed and large sedge swamp | FS1 |
| Wet pedunculate oak–ash woodland | WN4 |
| Tall-herb swamps | FS2 |

### 6.4.1.1 Habitats within the Proposed Wind Farm Site

The Proposed Wind Farm Site comprises of areas of active Conifer plantation (WD4), comprising mainly of Sitka spruce (*Picea sitchenis*) and Lodgepole pine (*Pinus contorta*), areas of degraded peatland assessed as Upland blanket bog (PB2), Cutover bog (PB4), and Wet heath (HH3), and Wet grassland (GS4) and Scrub (WS1). The Proposed Wind Farm Site is accessible via a network of local roads and existing forestry access tracks.

#### 6.4.1.1.1 *Conifer plantation (WD4) & Recently felled woodland (WS5)*

The majority of the Project Footprint is within active forestry of various ages including clear-felled areas, semi-mature and mature stands, and immature pre-thicket areas of both first and second rotation. These habitats comprised Conifer plantation (WD4), but where forestry has been recently felled, these areas were classified as Recently felled woodland (WS5). Sitka spruce (*Picea sitchensis*) was the dominant species, with lodgepole pine (*Pinus contorta*) also present in smaller quantities. As shown in Figure 6-6, Turbines 1, 2, 4, 8 and 9 are located entirely within these habitats, as well as the majority of Turbine 7. Other components of the Proposed Project within these habitats include the northern temporary construction compound and sections of new access roads.

The ground layer of the majority of mature Conifer plantation (WD4) in the Proposed Wind Farm Site was typically species poor, with vegetation comprised predominantly of bryophytes and ferns such as *Thuidium tamariscinum* and hard fern (*Blechnum spicant*). Other occasional species included bramble (*Rubus fruticosus* agg.), ivy (*Hedera helix*) and bracken (*Peridium aquilinum*). Much of the Conifer plantation (WD4) within the Proposed Wind Farm Site has been planted on peatland and therefore the field layer within fire breaks or on the margins of the forestry blocks comprised peatland species including ling heather (*Calluna vulgaris*) and purple moor grass (*Molinia caerulea*) as well as other species including occasional to frequent Yorkshire fog (*Holcus lanatus*), sweet vernal grass (*Anthoxanthum odoratum*), soft rush (*Juncus effusus*) and tormentil (*Potentilla erecta*).

Vegetation of clear-felled areas was again species poor and comprised occasional rosebay willowherb (*Chamaenerion angustifolium*), Yorkshire fog, soft rush (*Juncus effusus*), common sorrel (*Rumex acetosa*) and foxglove (*Digitalis purpurea*), with exposed peat and a leaf litter layer of pine needles dominating.

Representative examples of Conifer plantation (WD4) and Recently felled woodland (WS5) throughout the Proposed Wind Farm Site are provided in Plate 6-1, Plate 6-2, Plate 6-3 and Plate 6-4.

Given the modified nature and associated low biodiversity value of these habitats, they have been assigned Local Importance (lower value) only. The Proposed Wind Farm Site has been designed to utilise this habitat where possible, to reduce loss of higher value habitats within the Site.



*Plate 6-1 Example of mature Conifer plantation (WD4) within the Proposed Wind Farm Site.*



*Plate 6-2 Example of mature Conifer plantation (WD4) within the Proposed Wind Farm Site.*



*Plate 6-3 Example of Recently felled woodland (WS5) within the Proposed Wind Farm Site.*



*Plate 6-4 Example of semi-mature Conifer plantation (WD4) within the Proposed Wind Farm Site.*

### 6.4.1.1.2 Peatland Habitats

The majority of the Proposed Wind Farm Site is dominated by peatland habitat mosaics, consisting of Upland blanket bog (PB2), Wet heath (HH3), and Cutover bog (PB4), with Eroding blanket bog (PB5) occurring to a lesser extent. Small sections of exposed rock, classified as Exposed siliceous rock (ER1), were also occasionally recorded within these mosaic habitats. These habitats have been extensively altered by drainage and/or historical turbary practices, as well as grazing from both livestock and deer.

The majority of these peatland habitats have been avoided in the design of the Proposed Project, but as shown in Figure 6-6, Turbines 3 and 6 are located within this degraded habitat mosaic. Additional elements of the Proposed Project within peatland mosaic habitats include a small portion of Turbine 7, the proposed borrow bit, and the southern temporary construction compound, and sections of new access roads. Each habitat within these peatland habitat mosaics are discussed in more detail below.

#### Upland blanket bog (PB2) & Cutover bog (PB4)

Primarliy recorded as a mosaic with Wet Heath (HH3), these habitats were recorded largely in the flatter areas of the Proposed Wind Farm Site, north of Turbine 7. Recorded in areas of historic turbary, this habitat is degraded due to drainage, but vegetation characteristic of Upland blanket bog (PB2) has re-established. Species recorded included frequent to occasional cottongrass species (*Eriophorum angustifolium and E. vaginatum*) purple moor grass, bog asphodel (*Narthecium ossifragum)* and deergrass (*Trichophorum cespitosum*), as well as locally frequent peat mosses (*Sphagnum capillifolium,*

*S. papillosum*) and lichens such as *Cladonia rangiferina*. Due to historical drainage, this habitat was not particularly wet, to which the lack of widespread peat mosses can be attributed. Other species recorded were typical peatland species, including occasional ling heather (*Calluna vulgaris*), cross leaved heath (*Erica tetralix*), tormentil (*Potentilla erecta*), and Devil's-bit scabious (*Succisa pratensis*), with rare recordings of milkwort (*Polygala vulgaris*), red fescue (*Festuca rubra*), and soft rush (*Juncus effusus*).

While Cutover bog (PB4) habitat is degraded, areas have regenerated from historic turbary practices and are of high biodiversity value. As such, these areas been assessed as County Importance, as sufficient number of positive indicator species, as detailed in **Appendix 6-2**, were recorded for them to conform to the following Annex I habitat:

- Blanket bog [7130]

The Project Footprint is located entirely outside of Upland Blanket Bog (PB2) habitat. An example of this habitat is depicted in Plate 6-5, with Plate 6-6 showing both Cutover bog (PB4) and Upland blanket bog (PB2).



*Plate 6-5 Example of Upland blanket bog (PB2) recorded to north of Turbine 7.*



*Plate 6-6 Example of Cutover bog (PB4) habitat (foreground) within the Proposed Wind Farm Site, dominated by species associated with Upland blanket bog (PB2) (background).*

### Wet heath (HH3)

This habitat was recorded throughout the peatland habitat mosaic, particularly on rough, less flat terrain and on rises in between sections of Cutover bog (PB4) and field boundaries. Recorded characteristic species of this habitat included abundant to frequent ling heather and purple moor grass with occasional recordings of bell heather (*Erica cinerea*), tormentil, cross leaved heath, heath rush (*Juncus squarrosus*), Devil's-bit scabious, red fescue, broom forkmoss (*Dicranum scoparium*), sharp flowered rush (*Juncus acutiflorus*), common sedge (*Carex nigra*) and deergrass.

Turbine 7 has a slight overlap with Wet heath (HH3), while Turbine 6 is located entirely within this habitat. The proposed locations of these turbines are depicted in Plate 6-7 and Plate 6-8. A 2m x 2m relevé was taken at these locations and the results are included in the detailed botanical assessment report in **Appendix 6-2** of this chapter.

Given the high species diversity of this habitat, albeit degraded due to historical turbary and grazing, it conforms to the following Annex I habitat of the EU Habitats Directive, due to ≥50% cover of multiple indicator species (as detailed in **Appendix 6-2**):

- Northern Atlantic wet heaths with *Erica tetralix* [4010]

Whilst this habitat is degraded, it is nonetheless of high biodiversity value and as such, has been assessed as County Importance.



*Plate 6-7 Receiving Wet heath (HH3) within the footprint of Turbine 7.*



*Plate 6-8 Receiving Wet heath (HH3) within the footprint of Turbine 6.*

### Transition mire and quaking bog (PF3)

One area of Transition mire and quaking bog (PF3) was recorded adjacent to the existing access track in the northern section of the Proposed Wind Farm Site, outside of the Project Footprint. This was recorded in an area of deep peat where ground conditions were waterlogged and flat. Species recorded in this habitat included abundant to frequent purple moor-grass, Devil's-bit scabious (*Succisa pratensis*), water horsetail (*Equisetum fluviatile*), Lesser Spearwort (*Ranunculus flammula*), peat mosses (*Sphagnum* spp.) and sharp flowered rush (*Juncus acutiflorus*), with occasional marsh cinquefoil (*Comarum palustre*), sedges (*Carex* spp.), bogbean (*Menyanthes trifoliata*), marsh bedstraw (*Gallium palustre*), and water mint (*Mentha aquatica*).

Given the high species diversity of this habitat, it conforms to the following Annex I habitat of the EU Habitats Directive, due to <3 recordings of indicator species (seven indicator species recorded):

- Transition mire and quaking bog [7140]

As this habitat conforms with an Annex I habitat of the Habitats Directive, it has been assessed as County Importance. Given the relatively small size and that it is not located within a protected site, it does not constitute a receptor of National Importance or higher.

This habitat has been completely avoided in the design of the Proposed Project.



*Plate 6-9 Area of Transition mire and quaking bog (PF3) in the northern section of the Proposed Wind Farm Site.*

#### 6.4.1.1.3 Wet Grassland (GS4)

Large areas of the Site are dominated by Wet grassland (GS4), particularly in the eastern and southern sections (Areas 1 and 2, as indicated in Figure 4-1 of Appendix 6-4), away from the majority of the

Project Footprint. However, within the Proposed Wind Farm Site, as shown in Figure 6-6, Turbine 5 is located within this habitat type.

The location of the Turbine 5 is depicted in Plate 6-10 and was an area of unmanaged Wet Grassland (GS4) dominated by sharp flowered rush, as well as frequent Yorkshire fog and occasional common sorrel (*Rumex acetosa*), soft rush, lesser spearwort (*Ranunculus flammula*), and marsh willowherb (*Epilobium palustre*). A 2m x 2m relevé was taken within this habitat and the results are included in the detailed botanical assessment report in **Appendix 6-2** of this chapter.

In the eastern and southern section of the Proposed Wind Farm Site, additional large areas of this habitat were used for agricultural purposes. These sections of Wet grassland (GS4) were subject to agriculture practices through livestock grazing of differing intensities and management regimes and thus, presented with varying flora diversity. In the eastern section of the Site, Wet grassland (GS4) was actively managed through rush topping and/or grazing and presented with moderate floral diversity but uniform sward heights (Plate 6-11 and 6-12). These areas were dominated by soft rush and Yorkshire fog, with frequent to occasional recordings of meadow buttercup (*Ranunculus acris*), Devil's-bit scabious, lesser spearwort (*Ranunculus flammula*), creeping bent-grass (*Agrostis stolonifera*), creeping buttercup, sedges (*Carex spp.*), rough hawkbit (*Leontodon hispidus*), and compact rush (*Juncus conglomeratus*). In areas where grazing was of a lower intensity, such as that depicted in Plate 6-13, species composition was similar but a varied sward height was present.

While Wet grassland (GS4) habitats within the Site were either managed for agricultural purposes or were of low flora diversity, it nonetheless provides potential supporting habitat for important faunal species such as marsh fritillary through the presence of Devil's-bit scabious, as well as amphibians, and other invertebrates. Therefore, Wet grassland (GS4) has been assessed local important (higher value).



*Plate 6-10 Receiving Wet grassland (GS4) habitat at Turbine 5*



*Plate 6-11 Area of Wet grassland (GS4) managed via rush topping.*



*Plate 6-12 Area of Wet grassland (GS4) managed through low intensity grazing*



*Plate 6-13 Area of Wet grassland (GS4) managed through low intensity grazing, presenting varied sward height*

#### 6.4.1.1.4 Scrub (WS1)

Scrub (WS1) habitat occurs throughout the Site, primarily on the verges of unmanaged areas of upland peat habitats or agricultural lands or adjacent to Conifer plantation (WD4) and often forms land boundaries. Within the Proposed Wind Farm Site, Scrub (WS1) was dominated by dense thickets of gorse (*Ulex europaeas*) with small sections of Dense Bracken (HD1) (Plate 6-14 and Plate 6-15), adjacent to Conifer plantation (WD4) and peatlands, particularly in proximity to Turbine 8. In the eastern section of the Proposed Wind Farm Site, within agricultural lands, this habitat was recorded forming field boundaries (Plate 6-16) and was dominated by gorse and bramble (*Rubus fruticosus* agg.). Other areas of Scrub (WS1) were recorded as small stands of immature grey willow (*Salix cinerea*) occurring in wetter areas of peatland or along the boundaries of the wet grasslands within the Site (Plate 6-17).

Whilst this habitat is of some local importance for wildlife, it presented low species diversity and is common and widespread in the local and wider landscape and has been assessed as Local Importance (*lower value*).



*Plate 6-14 Gorse dominated Scrub (WS1) witin the Proposed Wind Farm Site.*



*Plate 6-15 Gorse dominated Scrub (WS1) in close proximity to Turbine 8.*



*Plate 6-16 Example of willow and bramble Scrub (WS1) in the eastern section of the Proposed Wind Farm Site.*



*Plate 6-17 Example of willow Scrub (WS1) recorded within the Proposed Wind Farm Site.*

#### 6.4.1.1.5 Hedgerows (WL1) and Treelines (WL2)

Linear features such as Hedgerows (WL1) and Treelines (WL2) were absent from the majority of the Proposed Wind Farm Site, but within the eastern section and the the Proposed Enhancement Site, agricultural fields and access roads are delineated by such habitats. Hedgerows (WL1) of willow, blackthorn (*Prunus spinosa*), and bramble were recorded forming field boundaries, as shown in Plate 6-18, while Treelines (WL2) of Sitka spruce were recorded along access roads (Plate 6-19). The majority of Project Footprint has no overlap with these linear features, with a minor exception at one location along the underground cabling route.

These habitats contain high biodiversity value and help maintain links and ecological corridors between features of higher ecological value and are likely to be utilised by protected faunal species. Therefore, this habitat has been assessed as Local Importance (*higher value*).



*Plate 6-18 Example of agricultural field in the eastern section of the Site, delineated by willow Hedgerows (WL1).*



*Plate 6-19 Example of Sitka spruce Treeline (WL2) delineating access track in the eastern section of the Site.*

#### 6.4.1.1.6 Wet willow alder ash (WN6)

In the eastern section of the Site, Wet willow alder ash woodland (WN6) was recorded on the edges of agricultural fields, often forming field boundaries (Plate 6-20). Species composition within the canopy varied, but predominantly consisted of willow (*Salix* spp.), with frequent to occasional recordings of alder (*Alnus glutinosa*), hawthorn (*Crataegus monogyna*), blackthorn, and Birch (*Betula pubescens*), with an understory of encroaching bramble. This habitat is located outside the Project Footprint and is not of sufficient size to warrant mapping as a standalone habitat within the provided habitat map, as per Smith et al. (2011) guidance (requires minimum size of 400m$^2$).

Wet willow alder ash woodland (WN6) presented with relatively high biodiversity value and such woodland typically provides suitable habitat for diverse ground flora. Whilst locally important, the species composition of this habitat does not indicate that this woodland conforms to any Annex I habitat. Therefore, Wet willow alder ash woodland (WN6) has been assessed as Local Importance (higher value) only.



*Plate 6-20 Example of Wet willow alder ash woodland (WN6) recorded within the Site.*

#### 6.4.1.1.7 Spoil and Bare Ground (ED2)

The Proposed Wind Farm Site is accessed by a network of existing forestry and farm tracks categorised as Spoil and bare ground (ED2) (Plate 6-21) and comprised of compacted gravel and bare soil with infrequent vegetation. The verges of these tracks across much of the site comprised of Wet grassland (GS4) dominated by soft rush, as well as species from surrounding peatland habitats, particularly ling heather. This habitat was also delineated by Conifer Plantation (WD4), as shown in Plate 6-22).

Species recorded within the Spoil and bare ground (ED2) habitat included occasional sweet vernal grass (*Anthoxanthum odoratum*), daisy (*Bellis perennis*), dandelion (*Taraxacum officinale* agg.), colt's-

foot (*Tussilago farfara*), soft rush, purple moor-grass, and sedges (*Carex* ssp). Upgrading of existing forestry tracks is proposed across the Site, as shown in Figure 4-1, Chapter 4: Description of the Proposed Project of the EIAR.

This habitat has been assessed as Local Importance (lower value), given the very low floral diversity it supports and its disturbed nature.



*Plate 6-21 Example of farm track within the Site, classified as Spoil and bare ground (ED2).*



*Plate 6-22 Example of forestry track within the Site, classified as Spoil and bare ground (ED2).*

#### 6.4.1.1.8 Stone walls and other stonework (BL1)

Stone walls were recorded forming field boundaries within the Proposed Wind Farm Site, often as a mosaic with wet heath (HH3) (Plate 6-23).

Whilst these habitats provide potential roosting opportunity and/or foraging corridors for protected fauna, they do not support diverse flora communities and as such, have been assessed as Local importance (lower value).



*Plate 6-23 Stone wall forming a field boundary, classified as Stone walls and other stonework (BL1).*

#### 6.4.1.1.9 *Eroding/upland rivers (FW1)*

A number of watercourses drain the Proposed Wind Farm Site. The Ballynew stream (28B27), an Upland eroding stream (FW1), drains the Site to the west, and discharges into the Glendine River downstream. As shown in Plate 6-24, this is a small watercourse with low discharge rates and a gravel or course sediment substrate. Located in an area of upland peatland, this watercourse was delineated by peatland habitats such as Upland blanket bog (PB2) and Wet heath (HH3).

To the north, the Proposed Wind Farm Site is drained via the Fahanlunaghtamore stream (28F09), an Upland eroding stream (FW1), which discharges into the Derrymore River downstream. As shown in Plate 6-25, this is a higher velocity watercourse than the Ballynew stream but is located in a highly modified habitat of Recently felled woodland (WS5).

The Proposed Wind Farm Site is drained to the south via the Letterkelly stream (28L07), an Upland eroding stream (FW1), which discharges into the Kildeema River downstream. As shown in Plate 6-26, this is a small watercourse with highly vegetated banks of Scrub (WS1) species such as bramble and gorse. Given the high density of vegetation on the banks, a clear view of this watercourse was restricted.

To the east, the Proposed Wind Farm Site is drained via the Knockacarn stream (28L07), an Upland eroding stream (FW1), discharging into the Derrymore River further downstream. As shown in Plate 6-27, this is a larger watercourse than those above and presented with typical eroding river riffle-glide-pool sections, with cobble and boulder substrate.

The rivers have been subject to detailed assessment downstream of the Proposed Wind Farm Site and the results are presented in the Aquatic Baseline Report in **Appendix 6-3**.

As watercourses within the Site provide connectivity to areas of higher ecological importance, such as European and National Sites, they are assessed as Local Importance (higher value).



*Plate 6-24 The Ballynew stream, draining the Site to the west.*



*Plate 6-25 The Fahanlunaghtamore stream, draining the Site to the north.*



*Plate 6-26 The Letterkelly stream, draining the Site to the south.*



*Plate 6-27 The Knockacarn stream, draining the Site to the east.*

### 6.4.1.1.10 Drainage ditches (FW4)

A number of Drainage ditches (FW4) are located within the Site. These were predominantly located within Conifer plantation (WD4) and occasionally along field boundaries, as shown in Plate 6-28. All exisitng drainage within the Proposed Wind Farm Site is presented in the drainage map provided as Figure 9-3 of Chapter 9: Hydrology and Hydrogeology.

Forestry drains were typically unvegetated and of low ecological value, while others, such as that shown in Plate 6-29 were very small, and provided little flow. Flow rates varied from stagnant to faster flowing forestry drains. Whilst drains within the Proposed Wind Farm Site will typcially eventaully discharge into mapped watercourses downstream, they are nonetheless assessed as Local Importance (lower value) as they are highly modified habitats with limited potential to support protected fauna such as amphibians.



*Plate 6-28 Drainage ditch (FW4) on a field boundary*



*Plate 6-29 Small farm drain, which conveyed very little water with high bank vegetation.*

### 6.4.1.2 Habitats within the Proposed Grid Connection Site

The cable route exits the Proposed Wind Farm Site through forestry for approximately 0.83km, onto a farm track for 0.55km before entering the public road corridor. It stays within the public road corridor for approximately 1.55km. the cable route then exits onto existing forestry /windfarm roads, following these for approximately 4.17km before reaching the proposed substation extension compound, as detailed in Section 4.9.9 of Chapter 4.

As the proposed 33kV underground cabling exits the Proposed Wind Farm Site, it will first travel through an area of gorse dominated Scrub (WS1) (Plate 6-30), before entering a section of Conifer plantation (WD4) (Plate 6-31). The Conifer plantation is a mature stand of Sitka spruce forestry, with very little vegetation in the understory, as per description in Section 6.4.1.1.1.

The route will then follow an existing unsealed farm road, classified as both Spil and bare ground (ED2) and Recolonising bare ground (ED3). Vegetation cover was sparse to frequent in these habitats, with species such as daisy (*Bellis perennis*), dandelion (*Taraxacum* sp.), colts foot (*Tussilago farfara*), soft rush, Yorkshire fog, and ling heather recorded. Adjacent habitat to this access road comprised rush dominated Wet grassland (GS4) (Plate 6-32).

The existing R460, along which the proposed 33kV underground cabling will then travel, comprised a sealed regional road, classified as Buildings and artificial surfaces (BL3) (Plate 6-33). This road was delineated by Hedgerows (WL1), Dry meadows and grassy verges (GS2), and private walls classified as Buildings and artificial surfaces (BL3) and one area of Tall-herb swamps (FS2). Species recorded within Tall-herb swamps (FS2) habitat inlcuded meadowsweet (*Filipendula ulmaria*), wild angelica (*Angelica sylvestris*), hemlock water-dropwort (*Oenanthe crocata*), marsh bedstraw (*Galium palustre*) yellow iris (*Iris pseudacorus*), and water horsetail (*Equisetum fluviatile*).

Given the species diversity of this habitat, it conforms to the following Annex I habitat of the EU Habitats Directive, due to >3 recordings of indicator species (five indicator species recorded[16]):

- Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels (6430)

As this habitat conforms with an Annex I habitat of the Habitats Directive, it has been assessed as County Importance. Given the relatively small size and that it is not located within a protected site, it does not constitute a receptor of National Importance or higher.

[16] *Filipendula ulmaria, Angelica sylvestris, Galium palustre, Iris pseudacorus, Equisetum fluviatile*

The proposed 33kV underground cabling exits the R460, and enters the existing Slievecallan wind farm, following existing roads of Spoil and bare ground (ED2) (Plate 6-34) until the location of the proposed substation extension compound. This access road is bordered by agricultural fields of Wet grassland (GS4) and Conifer plantation (WD4).

The route will cross 4 EPA no. watercourses and has been subject to detailed assessments, with the results presented in the Aquatic Baseline Report in **Appendix 6-3**. Watercourses included the Kildeema stream (28K01), the Annagh [Clare] (28A03), and the Doonsallagh East stream (28D08). Each were classified as Upland eroding streams (FW1) and provide connectivity to areas of higher ecological importance, such as European and National Sites. Therefore, they are assessed as Local Importance (higher value).



Plate 6-30 Scrub (WS1) along the proposed 33kV underground cabling.



Plate 6-31 Conifer plantation (WD4) along the proposed 33kV underground cabling.



Plate 6-32 Farm track of Spoi and bare ground (ED2) and Recolonising bare ground (ED3) along the proposed 33kV underground cabling.



Plate 6-33 Exisitng public road classified as Buildings and articfial surfaces (BL3) along the proposed 33kV underground cabling.



Plate 6-34 Access track to Slievecallan Wind Farm



Plate 6-35 Area of Tall-herb swamps (FS2) along the proposed 33kV underground cabling.

### 6.4.1.3 Habitats within the Proposed Enhancement Site

#### Conifer plantation (WD4) & Conifer plantation (WD4)

As part of the proposed Biodiversity Management and Enhancement Plan (BMEP) in **Appendix 6-4**, it is proposed to fell areas of existing commercial forestry to restore the underlying upland habitats. The areas to be felled (Areas A, B, C, D, E, F, G, H, I, and J, as indicated in Figure 4-1 of Appendix 6-4) consisted of Conifer plantation (WD4) dominated by Sitka spruce (*Picea sitchensis*) and lodgepole pine (*Pinus contorta*), with smaller areas of Japanese larch (*Larix kaempferi*). Areas of Recently-felled woodland (WS5) were also recorded within the felling areas. As per the description of this habitat in Section 6.4.1.1.1, ground vegetation was sparse within Conifer plantation (WD4) and as such, these habitats have been assigned Local Importance (lower value) only. An example of such habitat is provided in Plate 6-36.

#### Wet grassland (GS4)

Habitats recorded adjacent to these felling areas, but within the Site, included Wet grassland (GS4) (Plate 6-37) characterised by dominant to abundant rushes (*Juncus* spp.), meadow-grasses (*Poa* spp.), and Yorkshire fog (*Holcus lanatus*), with frequent to occasional recordings of creeping buttercup (*Ranunculus repens*), pendulous sedge (*Carex pendula*), common speedwell (*Veronica officinalis*), foxglove (*Digitalis purpurea*), tufted hair-grass (*Deschampsia cespitosa*), and purple loosestrife (*Lythrum salicaria*). Additional species recorded within these grassland areas include creeping thistle (*Cirsium arvense*), spear thistle (*Cirsium vulgare*), bramble (*Rubus fruticosus* agg.), broad-leaved dock (*Rumex obtusifolius*), dandelion (*Taraxacum vulgare*), jointed rush (*Juncus articulatus*), sheep's sorrel (*Rumex acetosella*), red fescue (*Festuca rubra*), and clovers (*Trifolium* spp.).

#### Lowland blanket bog (PB3)

Within the Site, an extensive area of Lowland blanket bog (PB3) (Plate 3-38) (Areas F, as indicated in Figure 4-1 of Appendix 6-4) was recorded adjacent to an area to be felled. This habitat supports a diverse assemblage of characteristic bog species, including frequent purple moor-grass (*Molinia caerulea*), bog myrtle (*Myrica gale*), ling heather (*Calluna vulgaris*) and cross-leaved heath (*Erica tetralix*), with occasional tormentil (*Potentilla erecta*), Devil's-bit scabious (*Succisa pratensis*), deergrass (*Trichophorum germanicum*), jointed rush (*Juncus articulatus*), and various sedge species (*Carex* spp.). Additional species recorded include bog asphodel (*Narthecium ossifragum*), black bog-rush (*Schoenus nigricans*), and bryophytes such as *Dicranum scoparium*, *Polytrichum* spp., *Sphagnum rubellum*, and *Sphagnum papillosum*.

Other habitats recorded adjacent to the proposed felling areas included the following

#### Reed and large sedge swamp (FS1)

Reed and large sedge swamp (FS1) (Plate 6-39) which consisted of bulrush (*Typha latifolia*), common reed (*Phragmites australis*), and purple moor-grass.

#### Wet pedunculate oak–ash woodland (WN4)

Wet pedunculate oak–ash woodland (WN4) was recorded along the Ballynew River in Area C with a canopy of willows (*Salix* spp.), alder (*Alnus glutinosa*), pedunculate oak (*Quercus robur*), ash (*Fraxinus excelsior*), hawthorn (*Crataegus monogyna*), hazel (*Corylus avellana*) and ground flora including ivy (*Hedera helix*) and wild angelica (*Angelica sylvestris*).



*Plate 6-36 Example of conifer plantation (WD4) to be felled as part of the BMEP.*



*Plate 6-37 Example of Wet grassland (GS4) adjacent to felling areas.*



*Plate 6-38 large area of Lowland blanket bog (PB3) in the south-east of the Site.*



*Plate 6-39 Small area of Reed and large sedge swamp (FS1) adjacent to felling areas.*

### Hedgerows (WL1) and Treelines (WL2)

Hedgerows (WL1) and Treelines (WL2) recorded within the Proposed Enhancement Site overlap with the Proposed Wind Farm Site, as discussed in Section 6.4.1.1.5.

### Buildings and Artificial Surfaces (BL3) and Stone walls and other stonework (BL1)

There are some farm buildings within the Proposed Enhancement Site comprised of agricultural sheds comprised of concrete and galvanised sheeting. These were categorised as Buildings and artificial surfaces (BL3), see Plates 6-40. Given the composition of these buildings, they do not support significant floral diversity and as such, this habitat has been assessed as Local Importance (lower value).

A stone building, classified as Stone walls and other stonework (BL1), was recorded within the eastern section of the Site, as sown in Plate 6-41. This was an old derelict stone building and provided potential supporting habitat for fauna such as bats and lizards.

Whilst these habitats provide potential roosting opportunity and/or foraging corridors for protected fauna, they do not support diverse flora communities and as such, have been assessed as Local importance (lower value).



*Plate 6-40 Example of agricultural sheds categorised as Buildings and artificial surfaces (BL3) within the Site.*



*Plate 6-41 Derelict stone building classified as Stone walls and other stonework (BL1).*

### 6.4.1.4 Habitats Along the Turbine Delivery Route

The proposed Turbine Delivery Route (TDR) is predominantly located within existing public road infrastructure, classified as Buildings and artificial surfaces (BL3), as shown in Figure 4-1 in Chapter 4: Description of the Proposed Project. It is proposed that wind turbine components will be delivered to the Proposed Wind Farm Site, from the Foynes Port, via the N85 National Secondary Road. From Ennis the turbines will be transported northwest along the N85 National Secondary Road to Inagh before turning left on to the R460 Regional Road and transported west for 4.2km to the junction with the L1074 Local Road. The turbines will be transported west/northwest for 4.1km before turning left onto the L1076 local road at Fahabeg. At Fahabeg, the turbines will be transported southwest for 2km after which the route will take a sharp left onto the L6230 Local Road approaching the Site from the northwest.

There are no significant turbine delivery route accommodation works required to facilitate the delivery of turbine components to the Site. At the entrance of the Site, where the TDR will turn south from the Fahanlunaghta More, there is some requirement for road widening works, which will encroach in an area of Wet grassland (GS4), which has been assessed as Local Importance (lower value) due to the dominance of rushes. This habitat is depicted in Plate 6-42.



*Plate 6-42 Location of accommodation works to the north of Site, showing rush dominated Wet grassland (GS4).*

#### 6.4.1.4.1 *Protected Flora*

No botanical species listed under the Flora (protection) Order (2022), listed in the EU Habitats Directive (92/43/EEC), or listed in the Irish Red Data Books were recorded on the Site. All species recorded are common in the Irish landscape. No rare and protected plant species recorded in the desk study, including those obtained from the NPWS data request, were recorded within the study area.

#### 6.4.1.4.2 *Invasive species*

During field surveys, a search for Invasive Alien Species (IAS) listed under the 'Third Schedule' of Regulations 49 and 50 of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I.

477 of 2011) and the 'First Schedule' of the European Union (Invasive Alien Species) Regulations 2024 (S.I. 374 of 2024) was conducted. One species - Rhododendron (*Rhododendron ponticum)* - was recorded at multiple locations within the Site. Infestations ranged in size from small saplings within peatland habitat to large dense thickets within all habitat types recorded within the Site. Several infestations have overlap with the design of the Proposed Project.

Full details of all scheduled invasive species recorded during the surveys, with locations, are provided in the Invasive Species Management Plan (ISMP) in **Appendix 6-5**.

510000

515000

680000

N

Silverhill

R460

R460

R460

R460

R460

0 1 2 km

## Map Legend

EIAR Site Boundary

**Fossitt Habitats**

- Buildings and artificial surfaces (BL3)
- Spoil and bare ground (ED2)
- Reservoirs (FL7)
- Improved agricultural grassland (GA1)
- Improved agricultural grassland/Wet grassland (GA1/GS4)
- Amenity grassland (improved) (GA2)
- Dry calcareous and neutral grassland/Scrub (GS1/WS1)
- Wet grassland (GS4)
- Wet grassland/Cutover bog (GS4/PB4)
- Wet grassland/Scrub (GS4/WS1)
- Upland blanket bog (PB2)
- Cutover bog (PB4)
- Cutover bog/Upland blanket bog/Wet heath (PB4/PB2/HH3)
- Conifer plantation (WD4)
- Oak-birch-holly woodland (WN1)
- Scrub (WS1)

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

N

SITE LOCATION - NOT TO SCALE

Drawing Title
**Habitat Map North**

Project Title
Slieveacurry Renewable Energy Development, Co. Clare

| Project No. | Drawing No. | Scale |
|---|---|---|
| 240718 | 6.5a | 1:18,000 |
| Drawn By | Checked By | Date |
| MNR | PD | 20/04/2026 |

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

515000

R460

R460

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R474

Glenletternafinny

Glenletternafinny

Glenletternafinny

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675000

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## Map Legend

EIAR Site Boundary

**Fossitt Habitats**

- Buildings and artificial surfaces (BL3)
- Spoil and bare ground (ED2)
- Reservoirs (FL7)
- Improved agricultural grassland (GA1)
- Improved agricultural grassland/Wet grassland (GA1/GS4)
- Amenity grassland (improved) (GA2)
- Dry calcareous and neutral grassland/Scrub (GS1/WS1)
- Wet grassland (GS4)
- Wet grassland/Cutover bog (GS4/PB4)
- Wet grassland/Scrub (GS4/WS1)
- Upland blanket bog (PB2)
- Cutover bog (PB4)
- Cutover bog/Upland blanket bog/Wet heath (PB4/PB2/HH3)
- Conifer plantation (WD4)
- Oak-birch-holly woodland (WN1)
- Scrub (WS1)

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

N

SITE LOCATION - NOT TO SCALE

Drawing Title
**Habitat Map South**

Project Title
Slieveacurry Renewable Energy Development, Co. Clare

| Project No. | Drawing No. | Scale |
|---|---|---|
| 240718 | 6.5b | 1:18,000 |
| **Drawn By** | **Checked By** | **Date** |
| MNR | PD | 20/04/2026 |

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

510000
512500
515000
680000
677500

T01
T02
T03
T04
T05
T06
T07
T08
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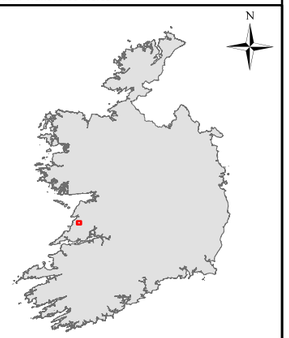
## Map Legend

- Proposed Turbines
- EIAR Site Boundary
- Proposed Project footprint

### Fossit Habitat

- Buildings and artificial surfaces (BL3)
- Spoil and bare ground (ED2)
- Reservoirs (FL7)
- Improved agricultural grassland (GA1)
- Improved agricultural grassland/Wet grassland (GA1/GS4)
- Amenity grassland (improved) (GA2)
- Dry calcareous and neutral grassland/ Scrub (GS1/WS1)
- Wet grassland (GS4)
- Wet grassland/Cutover bog (GS4/PB4)
- Wet grassland/Scrub (GS4/WS1)
- Upland blanket bog (PB2)
- Cutover bog (PB4)
- Cutover bog/Upland blanket bog/Wet heath (PB4/PB2/HH3)
- Conifer plantation (WD4)
- Oak-birch-holly woodland (WN1)
- Scrub (WS1)

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



SITE LOCATION - NOT TO SCALE

Drawing Title

**Habitat Map with Project Infrastructure North**

Project Title

Slieveacurry Renewable Energy Development, Co. Clare

| Project No. | Drawing No. | Scale |
|---|---|---|
| 240718 | 6.6a | 1:18,000 |
| Drawn By | Checked By | Date |
| MNR | PD | 27/04/2026 |

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

512500

515000

517500

677500

675000

N

0 1 2 km

## Map Legend

- Proposed Turbines
- EIAR Site Boundary
- Proposed Project footprint
- Existing Slievecallan 110kV Substation

### Fossit Habitat

- Buildings and artificial surfaces (BL3)
- Spoil and bare ground (ED2)
- Reservoirs (FL7)
- Improved agricultural grassland (GA1)
- Improved agricultural grassland/Wet grassland (GA1/GS4)
- Amenity grassland (improved) (GA2)
- Dry calcareous and neutral grassland/ Scrub (GS1/WS1)
- Wet grassland (GS4)
- Wet grassland/Cutover bog (GS4/PB4)
- Wet grassland/Scrub (GS4/WS1)
- Upland blanket bog (PB2)
- Cutover bog (PB4)
- Cutover bog/Upland blanket bog/Wet heath (PB4/PB2/HH3)
- Conifer plantation (WD4)
- Oak-birch-holly woodland (WN1)
- Scrub (WS1)

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

N

SITE LOCATION - NOT TO SCALE

Drawing Title

# Habitat Map with Project Infrastructure South

Project Title

Slieveacurry Renewable Energy Development, Co. Clare

| Project No. | Drawing No. | Scale |
|---|---|---|
| 240718 | 6.6b | 1:18,000 |
| Drawn By | Checked By | Date |
| MNR | PD | 27/04/2026 |

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## 6.4.2 Fauna in the Existing Environment

### 6.4.2.1 Non-volant mammals

#### Badger (*Meles meles*)

Low levels of badger activity were recorded within the Site, with indications restricted to worn trails and latrines within forestry and some indications of foraging (snuffle holes). No badger setts were recorded within the site. However, given the nature of the habitats in the Site, it is likely that this species occurs, at least on occasion, for foraging and commuting purposes.

#### Otter (*Lutra lutra*)

No otter breeding or resting sites, nor any indications such as spraint, were recorded within the Site during the surveys undertaken, including those undertaken as part of the aquatic surveys (Section 4.3 of **Appendix 6-3**: Aquatic Baseline Report). Whilst no indication of this species was recorded, watercourses within and downstream of the Site may provide potential foraging and commuting habitat for this species, at least on occasion.

#### Pine marten (Martes martes) and Red squirrel (*Sciurus vulgaris*)

Mustelid scats were recorded within forestry close to the location of Turbine 1 and within the Proposed Enhancement Site. These can likely be attributed to pine marten (*Martes martes*), given their size, shape and location on top of fallen tree trunks. Red squirrel (*Sciurus vulgaris*) feeding signs were present in forestry within the Proposed Wind Farm Site, however no dreys were recorded within the Site. No other indications of any protected mammals were recorded during the surveys undertaken.

#### Other mammals

No other indications of protected mammals were recorded within the Site. However, given the size and variety of habitats in the Site, other mammals such as Pygmy Shrew (*Sorex minutus*), Hedgehog (*Erinaceus europaeus*) and Stoat (*Mustela erminea*) are also likely to be present, at least on occasion.

### 6.4.2.2 Bat species

A dedicated bat survey and assessment report is provided in **Appendix 6-1** of this EIAR. The following provides a summary of the key findings. Bat surveys were undertaken in 2024, 2025 and 2026, in accordance with NatureScot Guidance (NatureScot, 2019) and form the core dataset for the assessment of effects on bats at the Site. Bat surveys included roost survey, manual transect surveys and ground-level static surveys.

**Roost Surveys**

Following the search for roosting features, three structures, including associated outbuildings, containing potential suitable bat roost features were identified within the wider Site.

Of the three areas surveyed, two were assessed as having *Low* bat roost potential and one was assessed as having *Negligible* bat roost potential. All surveyed structures will be retained and avoided as part of the Proposed Project. Further details of these structures are provided in Section 4.3.2.1 of **Appendix 6-1**. The tree inspections confirmed that trees within the Project Footprint, including all areas subject to felling, do not provide suitable roosting opportunities for bats.

**Manual Transects**

Manual transects were undertaken in spring, summer and autumn 2024. Bat activity was recorded in all seasons. A total of 149 bat passes were recorded. In general, Common pipistrelle (n=100) was recorded most frequently, followed by Soprano pipistrelle (n=34). *Myotis spp (n=5),* Leisler's bat (n=5) and Brown long-eared (n=5) were less frequent. Further details are provided in **Appendix 6-1**.

**Ground-level Static Surveys**

In total, 37,852 bat passes were recorded across all deployments. In general, Common pipistrelle (n=17,499) occurred most frequently, followed by Soprano pipistrelle (n=10,579) and *Myotis spp.* (n=6,987). Instances of Leisler's bat (n=1,562), Brown long-eared bat (n=1,102) and Nathusius' pipistrelle (n=121) were recorded less frequently while only two Lesser horseshoe bat passes were recorded in autumn. Further details are provided in **Appendix 6-1**.

Please refer to the Bat Report in **Appendix 6-1** for full details on all bat survey results.

### 6.4.2.3 Marsh fritillary (*Euphydryas aurinia*)

#### September 2024

During targeted surveys in 2024, marsh fritillary butterflies were confirmed to be breeding within the Site, primarily within peatland habitat mosaics, as described in Section 6.4.1.1.2. The locations of the larval webs recorded during these surveys, as well as previous records, are shown in Figure 6-7, with an example of a larval web shown in Plate 6-43.

During these surveys, as well as the multi-disciplinary walkovers, it was noted that a large proportion (approx. 186 ha) of the Proposed Wind Farm Site comprised potential supporting habitat for this species, as indicated in Figure 6-7. Devils bit scabious was recorded throughout these areas, which comprised a mosaic of Wet heath (HH3), Upland blanket bog (PB2), Cutover bog (PB4), and Wet grassland (GS4). An example of such habitat is presented in Plate 6-44. The areas indicated in Figure 6-7, identified as providing potential supporting habitat for marsh fritillary, were consistent with habitats within which marsh fritillary larval webs were recorded, in terms of floral diversity, sward height and structure, and extent of invading scrub composition.



*Plate 6-43 Example of marsh fritillary larval web recorded within the Site.*



*Plate 6-44 Example of confirmed breeding habitat for marsh fritillary within the Site, with abundant to frequent Devils bit scabious.*

## July 2025

Marsh Fritillary habitat condition assessments were undertaken in July 2025, which followed the methodology set out by the NBDC Marsh Fritillary Monitoring Scheme.

As shown in Figure 6-8, the condition assessments within the Proposed Wind Farm Site during the July survey were consistently assessed as Suitable - under grazed (SU). Surveyed areas presented only marginal variations in sward height and structure, as well as Devil's bit scabious density and scrub cover (See **Appendix 6-6**).

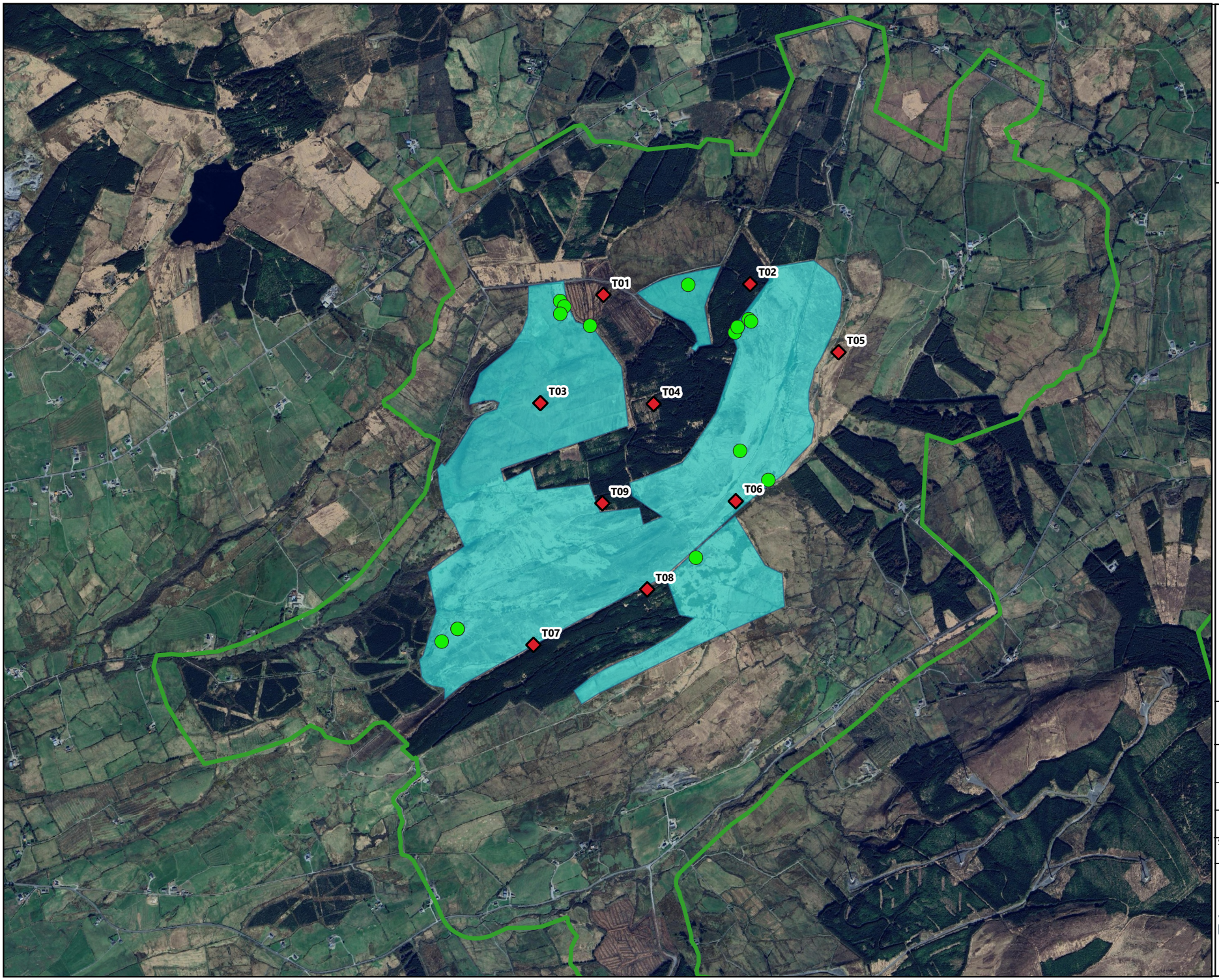
Given the consistency of habitat assessments for marsh fritillary across the survey locations, and the uniformity of habitats within the Proposed Wind Farm Site, with the exception of Conifer Plantation (WD4), it can be reasonably inferred that the full extent of the area indicated in Figure 6-7 provides potential supporting habitat for marsh fritillary (Suitable - under grazed).

## Summary of surveys

Whilst peatland habitats across the Proposed Wind Farm Site have been identified as providing potential supporting habitat for marsh fritillary, records of larval webs were infrequent and localised. Given the general consistency of habitat suitability across the Proposed Wind Farm Site, inconsistent marsh fritillary distribution across the Site can be attributed to the recognised ephemeral and stochastic nature of this species' population dynamics. This is due to metapopulations observed in this species i.e. one main population with subsidiary smaller subpopulations (Phelan *et a*l., 2021). Subpopulations experience local extinction events (as a result of weather, Devil's bit scabious abundance, and/or

parasitism from wasps) causing contraction of the main population, followed by colonisation of new areas.

Therefore, given the abundance of potential supporting habitat for marsh fritillary across the Proposed Wind Farm Site, and the unpredictable and ephemeral nature of their population dynamics, it can be reasonably inferred that the full extent of the area indicated in Figure 6-7 provides suitable breeding habitat for this species.




## Map Legend

- EIAR Site Boundary
- Proposed Turbine Layout
- MF Larval Webs 2024
- Identifed Potential Marsh Fritillary habitat

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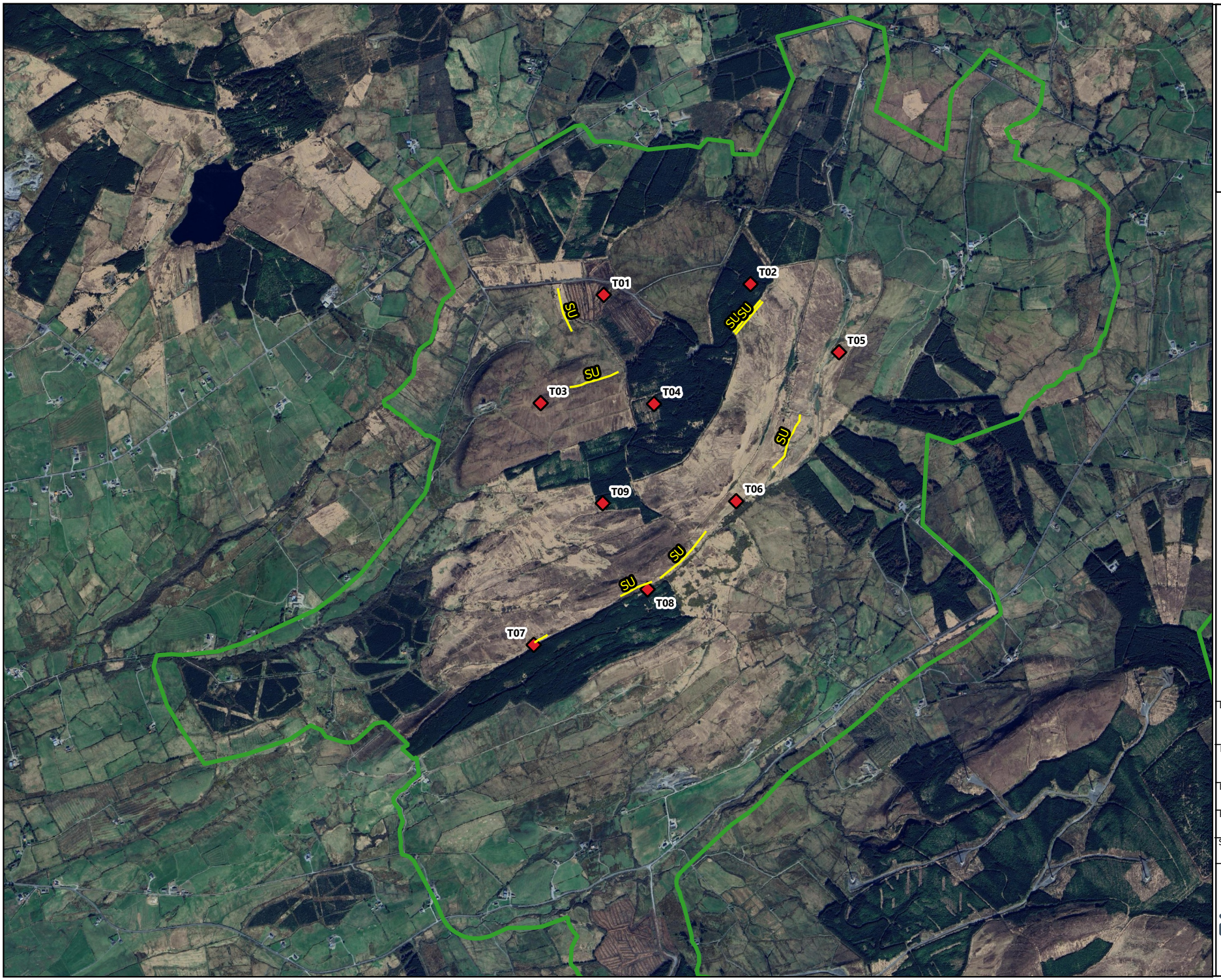
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Drawing Title
Marsh Fritillary 2024 Survey results

Project Title
Slieveacurry Renewable Energy Development, Co. Clare

| Drawn By | Checked By |
|---|---|
| PD | CK |
| Project No. | Drawing No. |
| 240718 | Figure 6-7 |
| Scale | Date |
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## Map Legend

- EIAR Site Boundary
- Proposed Turbine Layout
- Condition Assessment - July 2025

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|---|---|
| Drawing Title | Marsh Fritillary 2025 Survey results |
| Project Title | Slieveacurry Renewable Energy Development, Co. Clare |
| Drawn By: PD | Checked By: CK |
| Project No.: 240718 | Drawing No.: Figure 6-8 |
| Scale: 1:22,000 | Date: 2026-04-17 |

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#### 6.4.2.4 Amphibians and reptiles

Common frog (*Rana temporaria*) and frog spawn were recorded at a number of locations throughout the Site in Wet grassland (GS4), peatland habitats, and areas of standing water such as drainage ditches. Additionally, one occurrence of lizard (*Zootoca vivipara*) was recorded on a stone wall (Stonewalls and other stonework (BL1)) in close proximity to Turbine 8. Whilst no smooth newts (*Lissotriton vulgaris*) were recorded, given the suitability of habitats (Drainage ditches (FW4)) recorded during the surveys undertaken, this species is also likely to occur within the Site.

### 6.4.3 Aquatic Surveys

Watercourses surveyed within the vicinity of the Site consisted of Eroding/upland rivers (FW1), surrounded predominantly by agricultural and pastural land use, which was largely concurrent with habitat classifications of either Wet grassland (GS4) or Improved agricultural grassland (GA1), with some sites comprising of a mosaic of the two habitat types.

Water quality of the Annagh catchment was generally of Moderate to Good (Q3-4, Q4) status, with one exception, WF8, which presented Poor (Q3) status. Water quality throughout the survey sites within the Inagh catchment was of Poor to Moderate (Q3, Q3-4) status. Watercourses within the Proposed Grid Connection Site were of Poor to Moderate (Q3, Q3-4) status.

No otter signs (including holts) were observed at any of the surveyed locations, with the upland nature of many of the watercourses surveyed limiting foraging and commuting suitability for otter. However, watercourses furthest downstream of the Site, which presented higher fisheries potential, may provide suitable foraging and commuting habitat for otter.

The eDNA assessments at all locations were negative for Freshwater Pearl Mussel, White-clawed crayfish and Crayfish plague.

No kingfisher signs were observed at any of the surveyed locations, and habitat suitability was generally assessed as being *Negligible- Moderate* throughout the surveyed locations.

Full detailed results of the aquatic surveys are provided in the Aquatic Baseline Report in **Appendix 6-3**.

## 6.4.4 Importance of Ecological Receptors

Table 6-11 lists all identified receptors and assigns them an ecological importance in accordance with the Guidelines for Assessment of Ecological Impacts of National Road Schemes (TII, 2009). This table also provides the rationale for this determination and identifies the habitats and species that are Key Ecological Receptors.

*Table 6-11 Importance of Ecological Receptors.*

| Ecological Receptors and Geographic Importance | KER | Rationale |
|---|---|---|
| **Designated Sites** | | |
| Nationally Designated Sites<br>› Inagh River Estuary pNHA<br>› Carrowmore Point to Spanish Point and Islands pNHA. | *Yes* | These pNHAs have been assigned National Importance as they are sites proposed to be designated as Natural Heritage Areas (NHAs).<br><br>The Proposed Project has hydrological connectivity to these National sites.<br><br>Therefore, following the precautionary principle, a potential pathway for indirect effects on these Nationally Important Sites was identified via the deterioration of water quality, arising from the construction, operational and decommissioning phases of the Proposed Project.<br><br>**Therefore, these Nationally important sites are considered KERs.** |
| International Designated Sites<br>› Inagh River Estuary SAC [000036]<br>› Carrowmore Point to Spanish Point and Islands SAC [001021]<br>› Mid-Clare Coast SPA [004182]<br>› Cliffs of Moher SPA (004005) | *Yes* | These designated sites have been assigned International Importance as they are sites designated as part of the Natura 2000 Network under the EU Habitats Directive.<br><br>A potential pathway for likely significant effect on these European Sites, via disturbance, the deterioration of water quality, and impacts from the spread of invasive species during the construction, operational and decommissioning phases of the Proposed Project, was identified.<br><br>These European Sites have been included as a KER as there is potential for indirect effects via a deterioration in water quality during the construction and operational phases of the Proposed Project.<br><br>**Therefore, these European Sites are included as KERs.**<br><br>Note: European Sites within the ZoI are considered in the AASR and NIS that accompanies this planning application. |
| **Habitats** | | |
| Local Importance (*lower value*) habitats | *No* | These habitats are classified as of Local Importance (lower value). Despite some containing small areas of |

| Ecological Receptors and Geographic Importance | KER | Rationale |
|---|---|---|
| › Conifer plantation (WD4)<br>› Recently felled woodland (WS5)<br>› Buildings and artificial surfaces (BL3)<br>› Recolonising bare ground (ED3)<br>› Spoil and bare ground (ED2)<br>› Scrub (WS1)<br>› Stonewalls and other stonework (BL1)<br>› Drainage ditches (FW4) | | semi-natural habitat that are of some local importance for wildlife, these are common and widespread in the local and wider landscape.<br><br>Whilst there will be some loss of some of these habitats to facilitate the Proposed Project, these habitats are **not** included as KERs, given their limited ecological value. |
| Local Importance (*higher value*) habitats<br><br>› Hedgerow (WL1)<br>› Treelines (WL2)<br>› Wet grassland (GS4)<br>› Wet willow alder ash woodland (WN6)<br>› Reed and large sedge swamp (FS1)<br>› Wet pedunculate oak–ash woodland (WN4) | *No* | These habitats have been assessed as Local importance *(higher value)* as they are of high biodiversity value, provide supporting habitat for protected flora and fauna, or are rare in the context of the wider environment. However, there will be no or very minor loss of these habitats to facilitate the Proposed Project and therefore, there is no potential for significant impacts.<br><br>Therefore, these habitats are **not** considered as KERs. |
| County Importance habitats<br><br>› Transition mire and quaking bog (PF3)<br>› Lowland Blanket bog (PB3) | *No* | Peatlands are recognised as important habitats in the Clare County Biodiversity Action Plan (BAP) (draft, 2025). Given the high ecological value of peatland, the fact that they conform to Annex I habitats and their recognition in the draft Clare County BAP they have been assessed as being of County Importance.<br><br>However, the Proposed Project has been designed to avoid these habitats and therefore, there will be no loss of such habitats.<br><br>Therefore, these habitats are **not** considered as KERs. |
| County Importance habitats<br><br>Peatland habitats typically recorded as mosaics:<br><br>› Wet heath (HH3)<br>› Upland Blanket bog (PB2)<br>› Cutover bog (PB4)<br>› Eroding blanket bog (PB5)<br>› Exposed siliceous rock (ER1)<br><br>Other Habitats<br><br>› Tall-herb swamps (FS2) | *Yes* | Peatlands are recognised as important habitats in the Clare County Biodiversity Action Plan (draft, 2025). Given the high ecological value of peatland habitats, and the fact that they conform to Annex I habitats, despite their degraded nature, they have been assessed as County Importance.<br><br>The majority of the Project Footprint will be constructed within low ecological value habitat such as Conifer plantation (WD4) and Recently felled woodland (WS5).<br><br>As such, the majority of peatland habitat will be retained within the Site, but there will be a requirement for some loss of a mosaic of peatland habitats to facilitate the construction of Turbines 3, 6, and 7.<br><br>An area of Tall-herb swamps (FS2) was recorded directly adjacent to the Proposed Grid Connection site. This habitat conforms to the Annex I habitat Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels (6430). Whilst this habitat is not within the Project Footprint, given its proximity to the Proposed Grid Connection site, there |

| Ecological Receptors and Geographic Importance | KER | Rationale |
|---|---|---|
| | | is potential for indirect effects as a result of run off of pollutants during construction.<br><br>**Therefore, these habitats have been included as a KER.** |
| Local Importance (*higher value*) to International Importance<br><br>› Aquatic receptors (surface/ groundwater and associated aquatic faunal species, including, lamprey, aquatic invertebrates, European eel, salmonids, coarse fish, and other aquatic species) | *Yes* | The Proposed Project has downstream connectivity to National Sites and European Sites via several mapped watercourses and therefore, aquatic receptors have been assessed as Local Importance (*higher value*) to International Importance.<br><br>No instream works are proposed and therefore, there is no potential for direct effects on any aquatic receptor. There is potential for impacts on surface and groundwater systems via the deterioration of water quality arising from runoff during the construction, operation and decommissioning phases of the Proposed Project.<br><br>The potential for significant effects on aquatic species is restricted to indirect effects on their habitat resulting from a degradation of water quality.<br><br>**Therefore, Aquatic receptors have been considered as KERs.** |
| **Faunal Species** | | |
| Local Importance (*higher value*)<br><br>› Bats | *Yes* | All bat species in Ireland are protected under the Bonn Convention (1992), Bern Convention (1982) and the EU Habitats Directive (92/43/EEC). Additionally, in Ireland, bat species are afforded further protection under the Birds and Natural Habitats Regulations (2011) and the Wildlife Act 1976 (as amended).<br><br>The following bat species were recorded within the Proposed Wind Farm Site:<br><br>› Common pipistrelle<br>› Soprano pipistrelle<br>› Leisler's bat<br>› *Myotis* spp.<br>› Brown long-eared bat<br>› Nathusius' pipistrelle<br>› Lesser horseshoe bat<br><br>Bats have been assessed as Ecological Receptors of Local Importance (Higher Value) based on the presence of a regularly occurring bat population recorded within the Proposed Wind Farm Site and use of the site for foraging and commuting. No bat roosts were identified within the Proposed Wind Farm Site during the 2022 or 2024 survey period. An individual |

| Ecological Receptors and Geographic Importance | KER | Rationale |
|---|---|---|
| | | bat was observed night roosting within a stone shed structure located over 500m from the nearest proposed turbine in 2019. Overall, no large or significant maternity roosts (i.e. those supporting >100 individuals or considered of National Importance) were recorded within the Site.<br><br>Given the nature of the Proposed Project, the potential for significant effects on bats, as a result of both the construction and operational phases of the development, requires consideration.<br><br>**Therefore, bats are considered a KER for further assessment.** |
| Local Importance (*higher value*)<br><br>› Badger (*Meles meles*) | *Yes* | No evidence of breeding badger was recorded within the Site. However, the habitats within the Site have the potential to support badger populations of Local Importance, and as badger are a mobile species, setts could establish within the site before construction commencing. Therefore, taking a precautionary approach, the Proposed Project has the potential to result in effects on this receptor.<br><br>**Therefore, badger is considered a KER for further assessment.** |
| Local Importance (*higher value*)<br><br>› Otter (*Lutra lutra*) | *Yes* | Otter have been assessed as Local Importance (higher value) only, as there is no connectivity to any SAC for which this species is a qualifying interest.<br><br>No evidence of breeding otter, nor any other indications, was recorded within or downstream of the Site. However, the watercourses within and downstream of the Site have the potential to support otter populations of Local Importance, and as otter are a mobile species, holts could establish within the Site before construction commencing. Therefore, taking a precautionary approach, the Proposed Project has the potential to result in effects on this receptor during the construction, operational, and decommissioning phases of the Proposed Project.<br><br>The Proposed Project has the potential to result in indirect effects on this receptor (as a result of deterioration in water quality (supporting habitat) or disturbance/displacement during construction/ decommissioning) and it is therefore, **included as a KER for further assessment.** |
| Local Importance (*higher value*)<br><br>› Pine marten (*Martes martes*)<br>› Red Squirrel (*Sciurus vulgaris*) | *Yes* | The Proposed Wind Farm Site provides suitable foraging and breeding habitat for pine marten and red squirrel. These species, as ecological receptors, have been assigned Local Importance (higher value) on the basis that locally occurring populations of Local Importance are likely utilising the site. Given that the |

| Ecological Receptors and Geographic Importance | KER | Rationale |
|---|---|---|
| | | species are known to inhabit the area, potential for direct and indirect impacts on these species are considered further in this assessment and **they have been included as KERs for further assessment**. |
| County Importance<br><br>› Marsh fritillary (*Euphydryas Aurinia)* | *Yes* | Marsh fritillary have been assessed as County Importance, as they are listed on Annex II of the Habitats Directive, and significant numbers have been recorded within the Site.<br><br>To facilitate the Proposed Project, there is requirement for removal of minor areas of potential supporting habitat for this species. Additionally, areas of potential supporting habitat for this species are located directly adjacent to the Project Footprint.<br><br>**Therefore, marsh fritillary are considered a KER and further assessment is required.** |
| Reptiles and amphibians | *Yes* | It is considered that the Proposed Project will not result in a significant loss of suitable habitat for reptiles and amphibians. No evidence of populations of amphibians or lizards being significant at more than a local scale was recorded. However, as both reptiles and amphibians are known to be within the Site, and taking a precautionary approach, there is potential for direct effects on these receptors as a result of disturbance or direct mortality, as a result of the construction phase of the Proposed Project, and **they have been included as KERs for further assessment**. |
| Other fauna - Local Importance (*higher value*) | *No* | No additional species of conservation concern or protected under any Annexes of the EU Habitats Directive were recorded. Although other common species may occur within the Site, at least on occasion, no potential for significant effect has been identified on any other faunal species associated with the Site and other species are thus **not** included as KERs. |

# 6.5 Ecological Impact Assessment

## 6.5.1 'Do-Nothing' Scenario

If the Proposed Project were not to proceed, no changes would be made to the current land-use practice of active conifer forestry and agriculture practices, and the Site would continue to be managed under the existing arrangements. The biodiversity on the Site would likely remain similar to its current state as activity levels and land use would not change significantly.

However, if the Proposed Project doesn't proceed, the opportunity to capture the available renewable energy resource within a highly suitable location 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.

Furthermore, as this application includes a Biodiversity Management Enhancement Plan (BMEP) to be implemented during the development's operation, the opportunity to enhance the Site for biodiversity, via a structured implementation and monitoring plan, at a local scale, would also be lost.

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 on fossil fuels, should it not proceed, this would contribute to the inhibition of the national targets in reducing greenhouse gas emissions in Ireland.

## 6.5.2 Impacts during Construction Phase

### 6.5.2.1 Effects on Habitats

The Project Footprint is dominated by habitats considered to be of low ecological value. Such habitats include Conifer plantation (WD4), Spoil and bare ground (ED2) and rush dominated or grazed Wet grassland (GS4). These habitats have not been identified as KERs and although there will be loss of these habitats as a result of the Proposed Project, the loss is not considered to represent a significant effect at any geographic scale.

The loss, degradation or fragmentation of habitats that have been identified as Key Ecological Receptors to facilitate construction of the Proposed Project is described in the following sections.

#### 6.5.2.1.1 *Assessment of Potential Effects on Rivers, Streams, wetlands and Sensitive Aquatic Faunal Species during construction*

*Table 6-12 Potential for Impact on Rivers, Streams, wetlands and Sensitive Aquatic Faunal Species during construction.*

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|---|---|
| **Description of Effect** | Chapter 9: Hydrology and hydrogeology of the EIAR assesses the potential for significant effects on water quality as a result of the following pathways during construction:<br>› Potential Effects from Clear Felling<br>› Potential Effects from Earthworks (Removal of Vegetation Cover, Excavations and Stock Piling) Resulting in Suspended Solids Entrainment in Surface Waters<br>› Potential Impacts on Groundwater Levels During Excavations<br>› Excavation Dewatering and Potential Impacts on Surface Water Quality<br>› Potential Release of Hydrocarbons During Construction and Storage<br>› Groundwater and Surface Water Contamination from Wastewater Disposal<br>› Release of Cement-Based Products<br>› Morphological Changes to Surface Water Courses & Drainage Patterns<br>› Potential Hydrological Impacts on Designated Sites<br>› Potential Effects on Local Groundwater Well Supplies |

- Potential Effects on WFD status (Proposed Project)
- Potential Effects from the Use of Siltbuster (Proposed Project)
- Potential Effects from Earthworks and Watercourse Crossings (Proposed Grid Connection Site)
- Potential Effects on Wetland Hydrology (Proposed Wind Farm Site)
- Potential Effects from the Proposed Biodiversity Management and Enhancement Plan
- Effects on Doo Lough Public Water Supply (PWS)

The effects on water quality are fully described in Chapter 9: Hydrology and Hydrogeology and are described here in relation specifically to ecology. This section assesses the potential for significant effects on surface water/ groundwater and associated aquatic faunal species during construction, including, otter, lamprey, aquatic invertebrates, European eel, salmonids, coarse fish, otter, and other aquatic species identified during the desk study and dedicated aquatic surveys and likely to occur within or downstream of the site.

**Proposed Wind Farm Site and Proposed Enhancement Site - Direct impacts**

Direct impacts on watercourses and associated aquatic receptors within the Proposed Wind Farm Site and the Proposed Enhancement Site can occur during construction if works result in the disturbance of stream banks or substratum. This can arise via instream works, use of machinery within or in close proximity to stream or creating barriers to water flows and connectivity. Direct effects can also arise due to direct disturbance or mortality to species within watercourses, as a result of construction activity.

Within the Proposed Wind Farm Site, there is the requirement for the creation of 5 no. watercourse crossings along proposed access roads, and 1 no. upgrade of an existing crossing. However, there will be no instream works as part of the Proposed Project as clear span methods will be utilized at each crossing point and a self-imposed 50m buffer to all watercourses has been applied to the design of the Proposed Project, with the exception of existing road upgrades and proposed watercourse crossings. No sensitive aquatic receptors were recorded within any of the watercourses within the Proposed Wind Farm Site during the surveys. Watercourses within the Proposed Wind Farm Site were deemed to have low fisheries value. Therefore, there is no potential for significant direct impacts on any sensitive aquatic receptors associated with the Proposed Project.

Regarding the Proposed Enhancement Lands, there is no requirement for any watercourses crossings and therefore, there is no potential for direct effects on water quality as result of the enhancement measures.

**Proposed Wind Farm Site and Proposed Enhancement Site - Indirect impacts (water quality)**

A direct surface water pathway exists between the Proposed Wind Farm Site and Proposed Enhancement Lands to downgradient watercourses and wet wetlands. Within the Proposed Wind Farm Site and Proposed Enhancement Lands, there are 4 no. and 7 no. mapped watercourses, respectively, and a number of forestry Drainage ditches (FW4) which flow into these watercourses. There is a risk that pollutants and sediment laden surface water run-off could discharge to surrounding ditches and watercourses impacting on sensitive watercourses and aquatic receptors downstream, including, otter, lamprey, aquatic invertebrates, European eel, salmonids, coarse fish, and other aquatic species.

Potential sources of pollution to surface and ground waters within the Proposed Wind Farm Site and Proposed Enhancement Site include:

- Slit laden surface water run-off;
- Release of chemicals, including hydrocarbons, from onsite machinery, concrete and other cement-based products.
- Drainage and seepage of water resulting from infrastructure excavations;
- Stockpiled excavated material providing a point source of exposed sediment;
- Erosion of sediment from emplaced site drainage channels.

| | |
|---|---|
| | **Proposed Grid Connection Site - Direct impacts**<br><br>Direct impacts on watercourses and associated aquatic receptors within the Proposed Grid Connection Site can occur during construction if works result in the disturbance of stream banks or substratum. This can arise via instream works, use of machinery within or in close proximity to stream or creating barriers to water flows and connectivity. Direct effects can also arise due to direct disturbance or mortality to species within watercourses, as a result of construction activity.<br><br>The proposed 33kV underground cabling crosses 4 no. mapped watercourses, as well as 11 no. unmapped watercourses, as detailed in Chapter 9. These watercourses are hydrologically connected to downstream European and National Sites.<br><br>There are no in-stream works proposed to facilitate the proposed 33kV underground cabling, with appropriate methods to be used to cross these watercourses, as detailed in Section 4.9.8.1.4 of Chapter 4. Therefore, there is no potential for direct impacts on any sensitive aquatic receptor associated with the Proposed Grid Connection Site.<br><br>**Proposed Grid Connection Site - Indirect impacts (water quality)**<br><br>The watercourses surveyed along the Proposed Grid Connection Site were comprised of moderate gradient Eroding/upland rivers (FW1) and presented low fisheries potential and water quality was poor. Full assessments are provided in **Appendix 6-3**.<br><br>There is a risk that pollutants and sediment laden surface water run-off could discharge into the 15 no. watercourses which the grid route will cross, or adjacent wetland habitats (e.g. Tall herb swamp (FS2)) impacting on sensitive watercourses and aquatic species. |
| Assessment of Significance prior to mitigation | In the absence of mitigation, and following the precautionary principle, there is potential for the Proposed Project to result in significant indirect effects on the identified aquatic habitats and species assessed as Local importance (higher value) to International Importance, in the form of pollution to surface and groundwater during the construction phase of the Proposed Project. |
| Mitigation | **Proposed Wind Farm Site and Proposed Enhancement Site**<br><br>Detailed mitigation measures in relation to the protection of surface and ground water during construction are provided in Section 9.5.2 of Chapter 9: Hydrology and Hydrogeology. In summary the key mitigation measure during the construction phase is the avoidance of sensitive hydrological features, by application of suitable buffer zones. A self-imposed buffer zone of 50m has been put in place for streams and rivers within the Proposed Wind Farm Site where possible. Manmade forestry drains at the Site are not considered a hydrological constraint and therefore no buffering of forestry drains has been undertaken. All of the key infrastructure areas are located significantly away from watercourses with the exception of the upgrades to access track and water crossings. Detailed control measures in relation to the protection of surface and ground waters during construction are detailed in Section 9.5.2. of Chapter 9. In addition, the Construction Environmental Management Plan (CEMP) that is provided as Appendix 4-5 of the EIAR provides the details of exactly how the measures will be implemented during construction.<br><br>A drainage management plan for the Proposed Project is provided in Section 9.4.2 of Chapter 9: Hydrology and Hydrogeology, as well as in Section 3.2.4 of the CEMP. This plan provides details of how water quality will be protected during the construction of the Proposed Project. The maintenance plan for the on-site construction drainage system will be prepared in advance of commencement of any works with regular inspections of all installed drainage systems undertaken throughout the Site.<br><br>**Proposed Grid Connection Site** |

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| | Mitigations around the protection of watercourses from the construction of the proposed 33kV underground cabling are provided in Section 9.5.2.13 of Chapter 9. The mitigations include for:<br>› Pre-commencement of works<br>› Underground cabling watercourse crossing works<br>› Fracture Blow-out (Frac-out) Prevention and Contingency Plan for HDD |
| **Residual Effect following Mitigation** | Following the implementation of mitigation, there will be no residual effects on aquatic habitats or species, at any geographic scale, as a result of the Proposed Project. |

### 6.5.2.1.2 Assessment of Potential Effects on Peatlands and Associated Habitats during construction

*Table 6-13 Loss of peatlands and associated habitats*

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| Description of Effect | **Proposed Wind Farm Site**<br><br>The Proposed Project has been designed to minimise impacts on the receiving environment and maximises the use of existing access roads at the site. Consequently, the Proposed Project is predominantly located in areas of modified habitats, associated with the existing access road and Conifer plantation (WD4).<br><br>The Proposed Project has been designed to avoid the majority of the peatland habitats within the site. However, the Project Footprint will result in the loss of approx. 10.10 ha of degraded Wet heath (HH3), Upland blanket bog (PB2) and Cutover bog (PB4) habitat mosaics at the location of Turbines 3, 6, 7, and 8, as well as the proposed borrow pit, and sections of new access roads. These losses will be permanent.<br><br>As per the Botanical report in **Appendix 6-2**, peatland habitat mosaics conform with the following Annex I habitats of the Habitats Directive:<br><br>› Blanket bog [7130]<br>› Northern Atlantic wet heaths with *Erica tetralix* [4010]<br><br>Whilst the Annex I habitats to be lost are degraded, due to existing drainage, grazing, and/or and historical turbary practices, they are nonetheless of high ecological value and have been assessed as County Importance.<br><br>The overall loss of peatland habitat (10.10 ha) associated with the development amounts to less than 4.1% of the overall amount of this habitat recorded within the site (approx. 247 ha).<br><br>Multiple stands of Rhododendron have been recorded within the Proposed Wind Farm Site, including within peatland habitats. In the absence of mitigation, construction of the Proposed Project has the potential to spread this invasive species, increasing its extend and impacting on the quality of peatland habitats.<br><br>**TDR**<br><br>There will be no loss of peatland habitats as a result of accommodation works associated with the proposed TDR.<br><br>**Biodiversity Management and Enhancement Plan**<br><br>There will be no loss of peatland habitats as a result of the proposed Biodiversity Enhancement and Management Plan. The BMEP includes for the removal of c. 123 hectares of forestry within previous habitats, allowing the recolonisation of underlying habitats. Additionally, areas of level ground (c. 34.6 ha) with deep peat have been identified to restore high quality blanket bog habitat, following guidance set out by NatureScot (2025), Forest to Bog Restoration.<br><br>**Proposed Grid Connection Site**<br><br>The proposed 33kV underground cabling route will be laid primarily within existing road and track infrastructure, with sections of the route within Scrub (WS1) and Conifer plantation (WD4) habitats. Therefore, there will be no loss of peatland habitats as a result of the proposed 33kV underground cabling. |

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| **Assessment of Significance prior to mitigation** | The loss of Upland blanket bog (PB2), Cutover bog (PB4) and Wet heath (HH3) habitat mosaics has been assessed as a permanent significant negative effect on a small area (approx. 3% of total peatland habitat within the Site) of a receptor of County importance, in the absence of mitigation. The impact is restricted to a small percentage of the overall habitat within the site. Therefore, there is potential for significant effects on peatland habitats, at a local scale only. No significant effects are anticipated at any greater scale. |
| **Mitigation** | In accordance with the mitigation hierarchy, the Proposed Project has been deliberately designed to avoid peatland habitats by siting turbines, access roads and associated infrastructure within Coniferous forestry (WD4) and existing access tracks. The areas of deep peat within the study area have been avoided in the design of the development and all areas that are within the Project Footprint are of a degraded state, through extensive grazing of sheep or cattle, drainage, peat cutting, and/or forestry or scrub encroachment.<br><br>However, as there will be some unavoidable loss of peatland habitats to facilitate the Proposed Project, a Biodiversity Management and Enhancement Plan (BMEP) has been included as part of this application. The BMEP includes for the felling of c. 123 ha of forestry and the management of the underlying upland habitats to re-establish more diverse peatlands.<br><br>In addition, the BMEP has provided detailed methodology on Forest to Bog measures to restore 34.6 ha of blanket bog within the felling areas. These areas have been selected given their suitability for restoration, based on the level terrain and deep peat depths, and will be managed as per NatureScot (2025) Forest to bog guidelines.<br><br>These measures will first, offset the loss of approx. (10.10 ha) of peatland habitat within the Site, but will also, overtime, ensure a net gain in the extent of such habitat in the local environment.<br><br>Furthermore, as stands of Rhododendron have been recorded throughout the Proposed Wind Farm Site, an Invasive Species Management Plan (ISMP) has been prepared and is included in **Appendix 6-5**. With the successful implementation of the ISMP, no significant effects on peatland habitats, as a result of the spread of rhododendron from the construction phase of the Proposed Project, are anticipated. |
| **Residual Effect following Mitigation** | Following the specific design of the Proposed Project and its restriction to habitats predominantly outside peatland areas, as well as the measures within the BMEP, there will be no significant effect on peatland habitat in the vicinity of the Proposed Project.<br><br>Within the Proposed Wind Farm Site, the minor loss of degraded peatland habitat (4.1% of the overall area of this habitat recorded), which has been assessed as County Importance, will result, at least initially, in a significant effect, at a local scale only given the extent of this loss (10.10 ha) relative to the overall amount of peatland habitats on Site (approx. 247 ha).<br><br>However, with the successful implementation of both the BMEP and the proposed ISMP, there will, overtime, be a significant positive effect on peatland habitat in the vicinity of the Proposed Wind Farm Site, as a result of the Proposed Project, through the restoration of up to 123 ha of peatland habitat (34.6 ha of which will be targeted forest to bog restoration) in the locality. The BMEP first intends to offset any losses of peatland habitat but further ensures the enhancement of additional lands to result in an overall net gain in these habitats. Therefore, it can be concluded that the Proposed Project will result in overall positive effect on peatland habitats over time. |

### 6.5.2.2 Effects on Fauna

The Proposed Project has the potential to result in habitat loss and disturbance impacts on faunal species included as KERs, see Table 6-10. Therefore, these species were taken forward for further assessment. The following species have been brought forward for further assessment:

- Bats
- Marsh fritillary
- Otter
- Badger
- Pine marten
- Red Squirrel
- Reptiles and Amphibians

As no instream works are proposed as part of the Proposed Project, the potential for significant effects on sensitive aquatic species, with the of exception of otter, is restricted to indirect effects on their habitat resulting from water pollution. This has been assessed in Table 6-12 in Section 6.5.2 above and is not repeated below.

#### 6.5.2.2.1 *Assessment of Potential Effects on Bats during Construction*

The impact assessment in relation to bats has been undertaken in accordance with NatureScot Guidance[17]. As per the 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
- Disturbance/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. Potential risk of collision, barotrauma and other injuries relate to the operational phase and are presented in Section 6.5.3.2.1. Further details are available in the Bat Report in **Appendix 6-1**.

*Table 6-14 Impacts of construction phase on bats*

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| **Description of Effect** | **Loss or Damage to Commuting and Foraging Habitat**<br><br>In the absence of appropriate design and mitigation, the loss or degradation of commuting/foraging habitat has potential to reduce feeding opportunities and/or displace local bat populations. The Site is predominantly composed of conifer plantation, peatland and grassland habitats.<br><br>Baseline habitat appraisal and activity surveys demonstrated that the commercial conifer plantation, peatland and grassland habitats generally provide Low suitability for bat commuting and foraging, reflecting their limited structural complexity and insect productivity. Moderate suitability is largely confined to plantation edges and corridors, which provide shelter and navigational structure within the wider forestry landscape. Overall bat activity levels recorded across the site were low and considered representative of a commercial forestry landscape.<br><br>The Proposed Project will result in the permanent removal of approximately 20.7 hectares of commercial forestry within the Project Footprint. A further 123.3 hectares of forestry will be permanently felled as part of the BMEP in **Appendix 6-4**. As the forestry is managed as |

[17] *NatureScot published Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation. Version: August 2021 (NatureScot, 2021).*

| | |
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| | a commercial crop, this felling would be expected to occur over the plantation lifecycle irrespective of the Proposed Project.<br><br>Turbine Delivery Route accommodation works are minor and confined to areas of Negligible bat habitat suitability, with no high-value commuting or foraging habitats affected. |
| | **Loss of, or Damage to, Roosts**<br><br>The Proposed Wind Farm Site is located within a landscape that provides limited opportunities for bat roosting, with potential roost features largely confined to a small number of built structures in the wider environment. Commercial conifer trees within the site do not provide suitable roosting habitat due to their species composition, structure and management regime.<br><br>Two structures within the Proposed Wind Farm Site were assessed for bat roosting suitability. They were assessed as offering Low roosting potential. No roosts were identified within any of the structures during the surveys undertaken in 2024, 2025 and 2026. An individual bat was observed night roosting within a stone shed during transect surveys in 2019. All structures surveyed are located over 400m away from the Proposed Turbines and will not be affected by the Proposed Project. No loss or disturbance of potential roosts is anticipated.<br><br>Trees within the Project Footprint that are required to be removed to facilitate turbine bases, crane hardstands, access tracks and associated infrastructure, comprise exclusively commercial conifer plantation forestry. These trees do not provide suitable roosting features for bats due to their species composition, uniform structure and management regime, which limits the development of cavities, cracks, loose bark or other potential roost features. They were assessed as having no (None) roosting potential. No loss of tree roosting habitat will occur.<br><br>Along the proposed 33kV underground cabling, a small number of bridges and culverts were assessed as offering no (None) roosting potential, and no evidence of bat roosting was recorded. Works at 2 no. of these structures may be undertaken using horizontal directional drilling (HDD) with appropriate setbacks and no alteration to these structures. Temporary turbine delivery accommodation works will not affect any roosting features, as no bat roosts or potential roosting features were identified within the works areas. |
| | **Disturbance/Displacement of Individuals or Populations**<br><br>The Proposed Project is located within a landscape dominated by commercial conifer plantation, grassland and peatland habitats. These habitats generally provide low suitability for bat roosting, commuting and foraging, and baseline surveys recorded relatively low bat activity levels overall, consistent with a commercial forestry/open habitat landscape.<br><br>A search for roosts was undertaken within 200 m plus the maximum rotor radius (i.e. 75 m) of each proposed turbine location (NatureScot, 2021). No structures, building or trees were identified within the 275 m roost search buffer and no bat roosts were identified.<br><br>Construction activities associated with the Proposed Project are localised and temporary in nature and will not result in the fragmentation of bat habitat or a reduction in habitat availability. No bat roosts were identified at or in the immediate vicinity of HDD locations along the Proposed Grid Connection Site. Bat habitat will also be enhanced through the implementation of the Biodiversity Management and Enhancement Plan.<br><br>Given the baseline activity levels, limited extent of habitat removal, the absence of roost loss, and the retention of functional ecological corridors throughout the Site, the habitats will continue to support bat activity. Therefore, no significant displacement of individual bats or local populations is anticipated as a result of the Proposed Project. |
| | **Loss or Damage to Commuting and Foraging Habitat** |

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| **Assessment of Significance prior to mitigation** | Given that the majority of the Project Footprint is located within habitats of Low suitability for bat commuting and foraging, that no high-value bat habitats will be lost, and that large areas of the Site will remain undisturbed, no significant effects on bat commuting or foraging habitat are predicted as a result of the Proposed Project. |
| | **Loss of, or Damage to, Roosts**<br><br>No potential for significant effect with regard to the loss of, or damage to, roosting habitat as a result of the Proposed Project is anticipated. |
| | **Disturbance/Displacement of Individuals or Populations**<br><br>No potential for significant effect with regard to the disturbance/displacement of bats as a result of the Proposed Project is anticipated. |
| **Mitigation** | **Loss or Damage to Commuting and Foraging Habitat**<br><br>No mitigation required. However, taking a precautionary approach, standard best practice measures, as detailed in Section 6 of **Appendix 6-1**, will be implemented during construction. |
| | **Loss of, or Damage to, Roosts**<br><br>No mitigation required. |
| | **Disturbance/Displacement of Individuals or Populations**<br><br>No mitigation required. However, taking a precautionary approach, standard best practice measures, as detailed in Section 6 of **Appendix 6-1**, will be implemented during construction. |
| **Residual Effect following Mitigation** | Taking into consideration the sensitive design of the Proposed Project and the proposed best practice measures, as detailed in Section 6 of **Appendix 6-1**, significant residual effects on bats as a result of loss or damage to commuting and foraging habitat, loss of, or damage to, roosts, displacement of individuals or populations, and disturbance, are not anticipated.<br><br>Furthermore, with the implementation of the BMEP in **Appendix 6-4**, which provides for bolstering and creating new linear features, as well as improving grassland diversity, the Proposed Project has the potential to result in overall positive impacts on local bat populations. |

### 6.5.2.2.2 *Assessment of Potential Effects on Marsh Fritillary during construction*

*Table 6-15 Assessment of Potential Impacts on Marsh fritillary*

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| **Description of Effect** | Given the ephemeral and stochastic nature of marsh fritillary populations, as discussed in Section 6.4.2.3, as well as the suitability of habitats within the Proposed Wind Farm Site for this species, it can be reasonably assumed that the entire area indicated in Figure 6-7 provides potential breeding habitat for this species.<br><br>**Direct effects/ Mortality**<br><br>As shown in Figure 6-9, Figure 6-10 and Figure 6-11, construction works will occur within and in close proximity to identified marsh fritillary populations near Turbines 2 and 6, the northern temporary construction compound, and associated access roads. Therefore, there is potential for inadvertent encroachment of machinery onto supporting habitat causing direct mortality. Furthermore, given the extent of potential supporting habitat in proximity |

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| | to all infrastructure within peatland habitats and the dynamic population trends of this species, direct mortality may also arise within unconfirmed breeding sites.<br><br>Therefore, in the absence of mitigation, direct effects as result of mortality of marsh fritillary larvae could occur as a result of the construction phase of the Proposed Project.<br><br>**Indirect effects**<br><br>In the absence of mitigation, construction works adjacent to existing breeding areas has the potential to indirectly impact marsh fritillary due to dust related impacts. Airborne dust from construction works could settle on marsh fritillary larval webs resulting in suffocation or degradation of breeding habitat. Additionally, multiple stands of Rhododendron have been recorded within potential supporting habitat for this species. In the absence of mitigation, construction of the Proposed Project has the potential to spread this invasive species, increasing its extend and impacting on the quality of supporting marsh fritillary habitats.<br><br>Chapter 9 assessed the potential for effects wetland hydrology. This may arise as a result of the construction of the Proposed Project, which would have indirect effects on supporting habitat for marsh fritillary, as Devil's bit scabious is a wetland species. However, Section 9.5.2.14 of Chapter 9 has ruled out significant effects on wetland hydrology, as the Proposed Wind Farm Site has already been drained for turbary and forestry practices.<br><br>**Loss of suitable breeding habitat**<br><br>The Proposed Project has been designed, through an iterative design process, to avoid areas of habitat supporting breeding marsh fritillary and other areas of identified potential supporting marsh fritillary habitat. However, there is requirement for some loss of confirmed and potential supporting habitat for this species to facilitate the Proposed Project during construction. The loss of supporting habitat amounts to approx. 12.4 ha. |
| Assessment of Significance prior to mitigation | **Direct effects/ Mortality**<br><br>In the absence of mitigation, the potential for direct mortality to marsh fritillary would be a significant effect to the population within the Site at a County scale.<br><br>**Indirect effects/dust impacts**<br><br>Taking a precautionary approach, the potential for indirect effects to marsh fritillary as a result of adjacent construction works has the potential to be a significant effect to the population at the County scale.<br><br>No significant effects on supporting wetland habitats for marsh fritillary, as a result of the construction of the Proposed Project, are anticipated.<br><br>**Loss or degradation of suitable breeding habitat**<br><br>The loss of 12.4 ha of potential breeding habitat equates to approx. 7.9% of the total potential breeding habitat for marsh fritillary identified within the Site. Whilst this loss is relatively small, given the requirements of marsh fritillary populations on a small landscape scale due their narrow range where they occur, the loss of 12.4 ha of potential marsh fritillary habitat is considered, on a precautionary basis, to be significant at the local scale only. |
| Mitigation | **Mitigation by Design**<br><br>The Proposed Project has been specifically designed to avoid direct impacts on identified marsh fritillary within the Site where possible. This was achieved through an early-stage desk based ecological constraints study. The Proposed Project layout was thereby altered where possible through the iterative design process to avoid loss of confirmed marsh fritillary breeding habitat as well as significant areas of potential breeding habitat (i.e., large |

areas containing Devil's-bit scabious). However, as indicated in Figure 6-9, there is an unavoidable overlap between the Proposed Project and previous confirmed breeding site, and therefore, the following mitigations will be implemented.

**Mitigation - Direct effects/Mortality**

- A pre-commencement survey for marsh fritillary larvae will be undertaken at the suitable time of year (i.e. August – September) in advance of construction commencing. This pre-commencement survey will cover the entirety of the Project Footprint.
- If active larval webs are recorded within the Project Footprint, these webs will be translocated by a suitably qualified ecologist to adjacent suitable existing foraging habitat outside of the Project Footprint. This will be achieved by translocating a sod of earth with entire, intact Devil's-bit scabious plants upon which the larvae are feeding.
- Larval webs and associated food plants will only be translocated by a suitable qualified Ecologist or the appointed Ecological Clerk of Works (ECoW) to suitable supporting marsh fritillary habitat a minimum of 20m from the Project Footprint.
- Existing breeding areas will be fully fenced off with a minimum exclusion zone distance of 5 metres to construction works.
- ECoW supervision will be required for construction of components near existing breeding areas.
- Where suitable marsh fritillary habitat occurs in close proximity to Project Footprint side casting of material will be to the opposite side of the proposed infrastructure to where the suitable habitat occurs.

**Dust Mitigation**

The following mitigation applies to construction areas within 20m of potential marsh fritillary habitat, as presented in Figure 6-7 (in line with Table 4 of Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction 2024[18]):

- Groundworks (i.e. works with potential to create dust) associated with the Proposed Project will be fully supervised by an Ecological Clerk of Works (ECoW).
- The ECoW will regularly monitor adjacent marsh fritillary habitat on a daily basis for potential signs of dust deposition or any other habitat degradation. Dust level thresholds and weather will also be monitored.
- If any signs of habitat degradation are noted, the dust-producing works will be immediately halted and further mitigation to protect larval web areas from dust will be implemented in advance of resuming work.
- The ECoW will have power to halt construction works if required as outlined above.
- The following additional dust mitigation measures, as set out in Chapter 10: Air Quality, will apply:
    - 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 by the ECoW to avoid, insofar as reasonably possible, increased runoff.
    - All plant and materials vehicles shall be stored in dedicated areas within the Site.
    - Turbine components and construction materials will be transported to the Proposed Wind Farm Site on specified haul routes only, as agreed with the local authority.
    - Construction materials for the Proposed Project will be sourced locally from the onsite borrow pit.

[18] https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf

| | |
|---|---|
| | › The agreed haul route roads adjacent to the Site will be regularly inspected for cleanliness and cleaned as necessary.<br>› The roads adjacent to the Proposed Wind Farm Site entrance will be checked weekly for damage/potholes and repaired as necessary.<br>› The transport of construction materials around the onsite borrow pit will be covered by tarpaulin where necessary.<br>› 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.<br>› The MRF facility will be local to the Site to reduce the amount of emissions associated with vehicle movements<br>› A CEMP will be in place throughout the construction phase (see Appendix 4-5).<br><br>**Mitigation - Loss of suitable breeding habitat**<br><br>As described above, the Proposed Project will result in the loss of approx. 12.4 ha of potential supporting marsh fritillary habitat. As part of the proposed BMEP (**Appendix 6-4**) it is recommended to manage approx. 20 ha of agricultural wet grassland into species rich grassland, within which frequent Devil's-bit scabious has been recorded. Additionally, within the Proposed Wind Farm Site, approx. 29.7 ha of identified potential supporting habitat for marsh fritillary (under grazed) will be subject to adaptive grazing regime, which will be monitored and adjusted to enhance existing habitat within the Site.<br><br>The successful implementation of these measures will not only offset any potential loss of habitat but will result in a significant net gain in suitable marsh fritillary habitat within the Proposed Wind Farm Site.<br><br>Full details on habitat establishment, as well as operational, monitoring are provided in **Appendix 6-4**.<br><br>Furthermore, as stands of Rhododendron have been recorded throughout the Site, including within potential marsh fritillary habitat, an ISMP has been prepared and is included in **Appendix 6-5**. With the successful implementation of the ISMP, no significant effects on supporting marsh fritillary, as a result of the spread of rhododendron from the construction phase of the Proposed Project, are anticipated. |
| **Residual Effect following Mitigation** | With the above mitigation in place, there is no potential for residual significant effect to marsh fritillary. With the successful implementation of the proposed BMEP, there will be both a net gain in suitable marsh fritillary breeding and foraging habitat within the Site. |




Map Legend

- EIAR Site Boundary
- Permanent Project Footprint
- MF Larval Webs 2017
- MF Larval Webs 2018
- MF Larval Webs 2024

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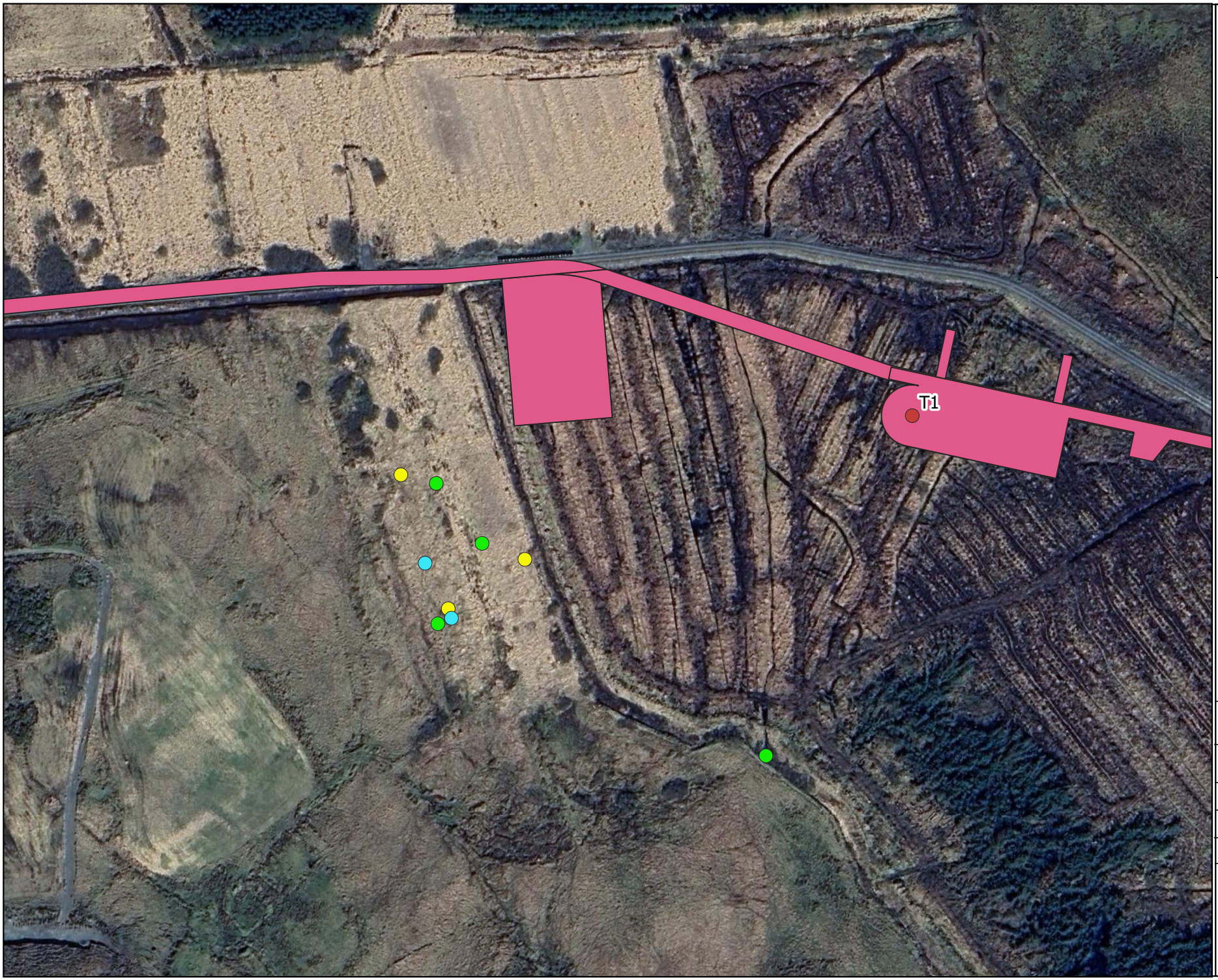
N

Drawing Title
Marsh Fritillary Populations in proximity to Turbine 2

Project Title
Slieveacurry Renewable Energy Development, Co. Clare

| Drawn By | Checked By |
|---|---|
| PD | CK |
| Project No. | Drawing No. |
| 240718 | Figure 6-9 |
| Scale | Date |
| 1:1,600 | 2026-04-17 |

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Map Legend

- EIAR Site Boundary
- Permanent Project Footprint
- MF Larval Webs 2017
- MF Larval Webs 2018
- MF Larval Webs 2024

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Drawing Title
Marsh Fritillary Populations in proximity to Turbine 1

Project Title
Slieveacurry Renewable Energy Development, Co. Clare

| Drawn By | Checked By |
|---|---|
| PD | CK |
| Project No. | Drawing No. |
| 240718 | Figure 6-10 |
| Scale | Date |
| 1:2,000 | 2026-04-17 |

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Map Legend

- EIAR Site Boundary
- Permanent Project Footprint
- MF Larval Webs 2018
- MF Larval Webs 2024

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N

Drawing Title
Marsh Fritillary Populations in proximity to Turbine 6

Project Title
Slieveacurry Renewable Energy Development, Co. Clare

| Drawn By | Checked By |
|---|---|
| PD | CK |
| Project No. | Drawing No. |
| 240718 | Figure 6-11 |
| Scale | Date |
| 1:2,000 | 2026-04-17 |

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*Figure 6-13 Confirmed marsh fritillary populations within or in close proximity to the Proposed Project – access roads to Turbine 6*



### 6.5.2.2.3 Assessment of Potential Effects on Otter during construction

*Table 6-16 Assessment of Potential Impacts on otter*

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| **Description of Effect** | The Proposed Project has been designed to minimise impacts on the receiving environment and maximises the use of existing access roads and low value habitats such as Conifer plantation (WD4) at the site. Consequently, the Project Footprint is predominantly located in areas of these modified habitats. Regarding the proposed TDR, no accommodation works are proposed in proximity to any watercourses and therefore, there is no potential for any effect on otter.<br><br>No indication of otter was recorded within the Site, including the Proposed Wind farm Site, along the Proposed Grid Connection Site, nor within the Proposed Enhancement Site during any of the surveys undertaken.<br><br>The watercourses which drain the Site, with the exception of the Knockacarn stream which drains the east, are typically first order streams and present limited supporting habitat for otter due to low fisheries potential. The Knockacarn stream presented as a larger watercourse with higher potential to support otter, but no indication of this species was recorded.<br><br>Whilst there is the requirement for the creation of 5 no. watercourse crossings and the upgrade of one existing watercourse crossing along proposed access roads, as well as a number of forestry drains/ditches with connectivity to the watercourses, within the Proposed Wind Farm Site, these are small streams and only provide marginal commuting habitat for otter and there is no requirement for instream works.<br><br>**Habitat Loss/Fragmentation**<br><br>Given the proposed works and the findings of the baseline surveys for otter within the Site, no significant habitat destruction and no loss of breeding or resting habitat for this species is anticipated.<br><br>**Disturbance, Mortality**<br><br>In relation to disturbance and direct mortality related impacts, no significant commuting, foraging, or breeding habitat for otter was recorded within the Site. Additionally, otters are predominantly crepuscular in nature, and it is anticipated that construction activity associated with the Proposed Project will be confined to daytime hours, thus minimising potential disturbance related impacts to the species.<br><br>However, given that otter is a mobile species which could establish holts between planning permission being granted (if approved) and works commencing, taking a precautionary approach, should a breeding site establish within or in close proximity to the Proposed Grid Connection Site, there is potential for significant effects on otter, as a result of disturbance/ direct mortality.<br><br>**Habitat Degradation (impacts on water quality)**<br><br>Taking a precautionary approach, it is assumed that otter may occur within and near the Site on occasion, particularly the lower reaches of the main watercourses downstream. There is potential for construction works to result in the run-off of silt and other pollutants such as hydrocarbons and cementitious material into watercourses downstream of the Site. This represents a potential indirect effect on otter in the form of habitat degradation/loss of prey resource through water pollution. The potential for significant impacts on water quality as a result of the Proposed Project is fully considered above in Table 6-12. |
| **Assessment of Significance prior to mitigation** | **Habitat Loss** |

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| | Significant effects regarding habitat loss are not currently anticipated as a result of the Proposed Project.<br><br>**Disturbance, Mortality**<br><br>Significant effects regarding disturbance and/or mortality are not anticipated as a result of the Proposed Project. However, should a breeding site for otter establish within or in close proximity to the Project Footprint, there is potential for significant effects on otter, as a result of disturbance/ direct mortality.<br><br>**Habitat Degradation (impacts on water quality)**<br><br>Otter are likely to occur downstream of the Site. As there is a potential for deterioration to water quality, as a result of the construction phase of the Proposed Project, there is a potential for significant effects on otter, assessed as Local Importance (higher value), via deterioration of supporting habitat. |
| Mitigation | **Habitat Loss**<br><br>Significant effects regarding habitat loss are not currently anticipated as a result of the Proposed Project. No mitigation required<br><br>**Disturbance, Mortality**<br><br>No significant effects are anticipated. However, taking a precautionary approach, and due to the time that can elapse between the original surveys, any future planning consent and construction, a pre-construction otter survey will be carried out by a qualified ecologist to identify the presence of any breeding sites within the Site, that may have been established in the intervening period.<br><br>As such, prior to the commencement of construction works associated with the installation of watercourse crossings, the following measures will be undertaken for the avoidance of disturbance/displacement and direct mortality and to ensure that no otter holts/breeding sites have been established since the original surveys undertaken (TII, 2008b):<br><br>From a precautionary basis, a pre-commencement otter survey will be undertaken in accordance with standard best practice guidance prior to the commencement of site works.<br><br>Should the surveys identify the presence of an otter holt, the following measures will be undertaken.<br><br>› A National Parks and Wildlife Service derogation licence will be applied for (although compliance with such a licence has not been relied on in this assessment).<br>› No works will be undertaken within 150m of any holts at which breeding females or cubs are present.<br>› No wheeled or tracked vehicles (of any kind) will be used within 20m of active, but non-breeding, otter holts. Light work, such as digging by hand or scrub clearance will also not take place within 15m of such holts, except under licence (TII, 2008b).<br>› All of the above works will be undertaken or supervised by an appropriately qualified ecologist.<br><br>Currently based on the finding of the surveys and current information regarding the Site, no derogation licence is required for this application, as no breeding sites have been recorded in close proximity to the Site. However, should the pre-commencement surveys identify a new breeding site and exclusion is required, a derogation licence will be obtained place from the NPWS prior to any works being carried out. |

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| | **Habitat Degradation (impacts on water quality)**<br><br>The potential for deterioration of water quality, and degradation of otter habitat, has been considered in Table 6-12 above, which assesses the potential for significant impacts on aquatic receptors, and provides mitigations to prevent any such effects. |
| **Residual Effect following Mitigation** | Following the incorporation of the mitigation measures described above, no significant negative effects to otter are anticipated at any geographic scale. |

### 6.5.2.2.4 *Assessment of Potential Effects on Badger during construction*

*Table 6-17 Assessment of Potential Impacts on badger*

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| **Description of Effect** | **Habitat Loss/Fragmentation**<br><br>Given the nature of the Proposed Project, there will be some loss of suitable badger foraging habitat i.e., Conifer plantation (WD4) associated with the Project Footprint and the BMEP. However, this habitat loss will not be significant in the context of the widespread alternative foraging habitat available within the site and the wider area surrounding the site. There will be no significant loss/fragmentation of badger habitat as a result of the Proposed Project.<br><br>**Disturbance/Mortality**<br><br>No badger setts were identified during the ecological surveys undertaken of the Site, however, signs of badger activity within the site (latrines, snuffle holes, prints) in close proximity to the Proposed Project infrastructure were identified.<br><br>Noise and earth works during construction have the potential to disturb badgers occupying setts in close proximity to Proposed Project during construction. Badger tunnel systems can extend some distance from sett entrances (over 20m in some cases[19]) 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 new badger sett is established within or near the Project Footprint during the interim (i.e. between baseline ecological surveys and commencement of construction), there is potential for disturbance/mortality to badger using the setts as a result of noise and/or tunnel or sett collapse during construction.<br><br>There is also potential for direct mortality to badger should they fall into open excavations with no exit points. Excavations may be left unattended for periods of time, trapping the badger within, which may also fill with water. |
| **Assessment of Significance prior to mitigation** | **Habitat Loss/Fragmentation**<br><br>No significant overall loss or fragmentation of badger foraging habitat is anticipated at any geographic scale.<br><br>**Disturbance/Mortality**<br><br>Whilst no badger setts were recorded within the Site, baseline surveys identified that the Proposed Wind Farm Site is being utilised by a local badger population. Any potential for physical damage or significant disturbance of occupied setts (if established |

[19] *TII (2006) Guidelines for the treatment of badgers prior to the construction of National Road Schemes.*

| | |
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| | prior to construction) would be considered significant at the local geographic scale in the absence of mitigation. |
| **Mitigation** | **Habitat Loss/Fragmentation**<br><br>No specific mitigation is required for habitat loss.<br><br>**Disturbance/Mortality**<br><br>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 to identify the presence of any setts that may have been established in the intervening period. Any setts identified within 150m of the Project Footprint 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. If an active badger sett is identified and works can be undertaken safely (as to avoid sett collapse) then an exclusion zone will be set up around the sett as follows:<br><br>› Exclusion zone fencing and appropriate signage will be put in place between working areas and badger sett exclusion zones to ensure that there will be no encroachment of the badger sett exclusion zones by construction activities.<br><br>If a newly established and active sett was identified within an area where works could not avoid direct impacts on the sett, then the sett would likely need to be excluded prior to works commencing. This would need to be undertaken in line with current guidelines by an appropriately qualified ecologist in advance of construction works commencing and in consultation with NPWS.<br><br>Where open excavations are left unattended, a ramp will be placed from the pit floor to ground level to allow safe egress of the excavation should any badger fall in. The bottom of the ramp will weighed down or secured, to ensure it remains in place should the excavation fill with water. |
| **Residual Effect following Mitigation** | Following the incorporation of the mitigation measures described above, no significant negative effects to badger are anticipated at any geographic scale. |

### 6.5.2.2.5 Assessment of Potential Effects on pine marten and red squirrel during construction

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

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| **Description of Effect** | **Habitat Loss/Fragmentation**<br><br>Red squirrel and pine marten are known to occur within the Site. Conifer plantation (WD4) within the Site provides suitable foraging and breeding habitat for both species. Approximately 356 ha of Conifer plantation (WD4) was recorded within the Site. The Proposed Project will result in the loss of 161 ha of Conifer plantation (WD4). This habitat loss will not be significant in the context of the widespread alternative foraging/breeding habitat available within the site and the wider area surrounding the Site. There will be no significant fragmentation of red squirrel or pine marten habitat as a result of the Proposed Project.<br><br>**Disturbance, Mortality**<br><br>The Site provides suitable foraging and breeding habitat for both species. No breeding sites (e.g. dreys, dens) were identified for either species during the ecological surveys undertaken, however, there is a potential for breeding sites to be created during the interim between baseline ecological surveying and commencement of construction. Tree felling works associated with the Proposed Project has the potential to disturb or destroy occupied dreys and/or dens during construction. Both species would be a particularly vulnerable to the risk of mortality when young are to be found within breeding sites (spring/summer period). In the event that new breeding sites were established within or near the areas to be clear-felled there is potential for disturbance/mortality to red squirrel or pine martin through destruction of breeding sites or disturbance causing young abandonment during construction. |
| **Assessment of Significance prior to mitigation** | **Habitat Loss/Fragmentation**<br><br>No significant overall loss or fragmentation of red squirrel or pine marten habitat is anticipated at any geographic scale.<br><br>**Disturbance/Mortality**<br><br>Whilst no breeding sites for these species were recorded within the Site, baseline surveys identified that the Site is being utilised by local red squirrel and pine marten populations. Any potential for physical damage or significant disturbance of occupied breeding sites (if established prior to construction) for these species has been identified as significant at the local geographic scale in the absence of mitigation. |
| **Mitigation** | **Habitat Loss/Fragmentation**<br><br>No specific mitigation is required for habitat loss.<br><br>**Disturbance/Mortality**<br><br>Due to time that can elapse between the original surveys, any future planning consent and construction, a pre-construction survey for pine marten/red squirrel will be carried out to identify the presence of any new breeding sites. These surveys will focus on areas of Conifer plantation (WD4) to be felled and all suitable habitat within 50m of the felling blocks. Any potential breeding sites should be monitored using camera traps to ascertain if they are active. Surveys will be undertaken in line with Nature Scot[20] and TII[21] guidelines. |

[20] https://www.nature.scot/sites/default/files/2018-09/Species%20Planning%20Advice%20-%20red%20squirrel.pdf
[21] *TII guidance (TII, 2008, Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes. Dublin: National Roads Authority).*

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| | Should active dreys/dens be identified within the blocks to be felled, the following mitigations and best practice procedures will be followed to ensure that no breeding site for either red squirrel or pine marten is impacted:<br>› Felling works will be undertaken in October–January inclusive, as this will avoid the main breeding season (February-September) when vulnerable young are most likely to be found within breeding sites for both species.<br>› Any breeding sites identified within the 50m buffer that wouldn't be directly affected by felling works, but are vulnerable to disturbance related impacts, will be clearly marked out with an exclusion zone, and works/access through these areas will be avoided.<br>› Plant machinery will be turned off when not in use.<br>› Operating machinery will be restricted to the Proposed Project works site area (and outside any exclusion zone) |
| **Residual Effect following Mitigation** | Following the incorporation of the mitigation and enhancement measures described above, no significant negative effects to pine marten and/or red squirrel is anticipated at any geographic scale. |

### 6.5.2.2.6 Assessment of Potential Effects on Reptiles and Amphibians

*Table 6-19 Assessment of Potential Impacts on Reptiles and Amphibians*

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| **Description of Effect** | **Habitat Loss/Fragmentation**<br><br>Both viviparous lizard and common frog were recorded within the Site, and suitable habitat for each was recorded in the form of stone walls and drainage ditches, respectively. Given the nature of the Proposed Project, there will be some minimal loss of suitable foraging habitat associated with the Project Footprint. However, this habitat loss will not be significant in the context of the widespread alternative foraging habitat available within the site and the wider area surrounding the site. There will be no significant fragmentation of viviparous lizard or common frog habitat as a result of the Proposed Project.<br><br>**Disturbance, Mortality**<br><br>The Proposed Wind Farm Site supports a number of heavily vegetated stone walls which may be utilised by viviparous lizards in the winter months when they are in brumation. Additionally, standing water within the site, such as that recorded within the drainage channels, provides potential breeding habitat for common frog and smooth newt. The removal of sections of such habitats to facilitate the construction of the Proposed Project has the potential to have a direct impact (risk of mortality) on these species. |
| **Assessment of Significance prior to mitigation** | **Habitat Loss/Fragmentation**<br><br>The loss of supporting habitat for viviparous lizard, common frog, and smooth newt is not considered to be significant at any geographic scale given the small scale of the habitat loss and the extensive area of available habitat locally.<br><br>**Disturbance/Mortality**<br><br>In the absence of mitigation, the potential for a direct effect on viviparous lizard, common frog, and smooth newt in relation to mortality risk during construction would be considered significant at the local geographic scale only. |
| **Mitigation** | **Habitat Loss/Fragmentation**<br><br>No specific mitigation is required for habitat loss.<br><br>**Disturbance/Mortality**<br><br>Prior to construction of the Proposed Project, pre-commencement surveys for viviparous lizard, common frog, and smooth newt will be undertaken within potential supporting habitat identified within the Project Footprint. Surveys will be undertaken by a suitably qualified ecologist and during the optimal season for each species, as per TII (2008) guidelines.<br><br>Any individuals or population of these species will then be translocated outside of the Project Footprint to other areas of suitable habitats.<br><br>An Ecological Clerk of Works will also be appointed for the construction works, who will translocate any further individuals recorded during the construction works. |
| **Residual Effect following Mitigation** | Following the incorporation of the mitigation and enhancement measures described above, no significant negative effects to viviparous lizard, common frog, and smooth newt is anticipated at any geographic scale. |

## 6.5.3 Impacts during Operational Phase

### 6.5.3.1 Effects on Habitats during Operation

The operation of the Proposed Project will not result in any additional loss of habitats considered as KERs and as such, there is no potential for any significant effects in this regard. These habitats are not considered to be KERs in the context of the operation of the Proposed Project.

However, the Proposed Project has the potential to result in enhancement of the surrounding areas through habitat rehabilitation management (as described in **Appendix 6-4**) that will be implemented during the construction phase of the Proposed Project and maintained during the operational phase. Details of the management that will be undertaken are provided in the BMEP in **Appendix 6-4**. These include:

- Restoring areas of forestry back to peatland,
- Natural re-vegetation and drain blocking within areas of degraded peatlands,
- Forest to bog methodologies, as set out in NatureScot, 2025
- Grassland management
- Bolstering existing and planting new linear features

Potential for effects on rivers, streams and sensitive aquatic species remains a KER during operation and is assessed in detail in the following subsection.

#### 6.5.3.1.1 *Effects on Rivers and Streams and sensitive aquatic faunal species during operation.*

*Table 6-20 Assessment of Potential Impacts on Rivers, Streams and Sensitive Aquatic Faunal Species during operation*

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| **Description of Effect** | Chapter 9: Hydrology and hydrogeology of the EIAR assess the potential for significant effects on water quality as a result of the following pathways during operation:<br>- Removal of Vegetation Cover and Progressive Replacement of Natural Surface with Low Permeability Surfaces<br>- Potential Effects from Runoff<br>- Potential Effects on WFD Status<br><br>This section assesses the potential for significant effects on aquatic receptors including aquatic habitats (i.e. watercourses), salmonids, otter, lamprey, coarse fish, aquatic invertebrates, European eel, aquatic invertebrates, and other aquatic species during the operation of the Proposed Project.<br><br>The Proposed Project has been designed to minimise impacts on the receiving environment and maximises the use of existing access roads at the Site. Consequently, the Project Footprint is predominantly located in areas of modified habitats, associated with the existing access roads and Conifer plantation (WD4).<br><br>The relatively small-scale increase in the amount of hard standing associated with the turbine hardstands has the potential to result in faster water runoff from the Proposed Wind Farm Site to the surrounding watercourses in comparison to existing conditions. This may have the indirect effect of causing erosion, which could lead to deterioration of surface water and supporting habitat quality as a result of sedimentation. Additionally, there is the potential for the faster run off of any pollutants that may be associated with the operation of the Proposed Project, including hydrocarbons associated with the operational maintenance, potentially impacting on supporting aquatic faunal habitats. |

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| | The impacts on water quality during operation are fully described in Section 9.5.3 of Chapter 9: Hydrology & Hydrogeology of this EIAR and are discussed here specifically in relation to biodiversity. |
| Characterisation of unmitigated effect | Given the relatively minor increase in hardstanding as a result of the Proposed Project, significant effects on water quality are not anticipated at any geographic scale during the operation of the Proposed Project.<br><br>Whilst no significant effects on water quality are anticipated, potential for effects on water quality associated with the operational phase drainage of the Proposed Wind Farm Site has been fully mitigated through appropriate design and mitigation as fully described in Section 9.5.3 of Chapter 9: Hydrology & Hydrogeology. |
| 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. However, mitigation will be employed to ensure that there will be no negative effects on sensitive aquatic receptors. |
| Mitigation | 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 in Section 9.5.3 of Chapter 9 and as shown on the drainage drawings (Appendix 4-3) submitted with this planning application.<br><br>With regards potential impacts on water quality, and associated aquatic receptors, as a result of the runoff during operations, the mitigations provided in Sections 9.5.3 of Chapter 9 will ensure all surface water runoff from upgraded roads and new road surfaces (including hardstand and turbine base areas) will be captured and treated prior to discharge/release. Settlement ponds, checks dams and buffered outfalls will prevent roads acting as preferential flowpaths by providing attenuation and water quality treatment. |
| Residual Effect following Mitigation | No potential for significant effect has been identified at any geographic scale as a result of the Proposed Project. The residual impact will be the same for any selected turbine that is within the range of dimensions for which planning permission is sought. |

### 6.5.3.2 Effects on Fauna during Operation

The operation of the Proposed Project will not result in any additional habitat loss or deterioration, nor will it result in a significant increase in anthropogenic activity due to its location and scale and, as such, there is no potential for any significant effects in on fauna as result of these pathways.

There is no potential for significant negative effects on terrestrial faunal KERs during the operational phase of the Proposed Project. The Proposed Project maximises the existing infrastructure within the Proposed Wind Farm Site and there will be minimal requirement for operational works along the Proposed Grid Connection Site. Any maintenance works associated with the operation of the project will be confined to the Proposed Wind Farm Site.

Operational lighting will be confined to the site of the proposed substation and aviation lighting (lights on top of nacelle). Lighting at the substation will be minimal and will include a security spotlight on a timer. Given the proposed minimal lighting, no significant disturbance effects as a result of lighting on any faunal species is anticipated.

It should be noted that no significant habitat for salmonids, lamprey, macroinvertebrates, European eel, or other aquatic species was recorded within the Project Footprint and all new major infrastructure such as turbine bases are located over 50 metres from the watercourses within the Site. 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 6.5.3.1.1 and is not repeated below.

Potential for effects on bat species resulting from the operation of the Proposed Project was identified and therefore, bat species are discussed and assessed in relation to the operational phase below.

#### 6.5.3.2.1 Assessment of Potential Effects on Bats during operation

*Table 6-21 Assessment of Potential Impacts on Bats*

| | |
|---|---|
| **Description of Effect** | The Proposed Project has been designed to minimise impacts on the receiving environment and maximises the use of existing infrastructure at the Site including internal access tracks. The Project Footprint is dominated by modified habitats associated with the existing infrastructure and conifer plantation.<br><br>A full impact assessment for bats is provided in the Bat Survey Report in **Appendix 6-1** and is summarised below.<br><br>As per SNH Guidance, wind farms present four potential risks to bats:<br><br>› Collision mortality, barotrauma and other injuries;<br>› Loss or damage to commuting and foraging habitat;<br>› Loss of, or damage to, roosts;<br>› Displacement of individuals or populations.<br><br>No significant 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 Proposed Project, as per Section 6.5.2.2.1.<br><br>**Collision mortality, barotrauma, and other injuries**<br><br>Low-risk species recorded within the Site included *Myotis* species, brown long eared bat, and lesser horseshoe bat. As per SNH guidance. these species are not identified as being particularly vulnerable to collision mortality. Given the overall low levels of activity recorded for these species, no significant effects are anticipated as a result of Collision mortality, barotrauma, and other injuries.<br><br>The following high-risk species were recorded during the dedicated surveys:<br><br>› Leisler's bat,<br>› Common pipistrelle<br>› Soprano pipistrelle<br>› Nathusius' pipistrelle<br><br>Site-level collision risk for high collision risk bat species was assessed as *Low* under typical conditions. At peak activity levels, the risk assessment increased to *Medium* for Leisler's bat, common pipistrelle, soprano pipistrelle and Nathusius' pipistrelle.<br><br>Overall bat activity levels were considered representative of the habitat composition at the Proposed Wind Farm Site, which is dominated by commercial conifer plantation, with widespread areas of peatland and grassland habitats. Both static detector data and manual transect surveys indicated activity levels typical of a commercial forestry/open habitat landscape, with low suitability for commuting and foraging largely limited to conifer plantation corridors. |
| **Assessment of Significance prior to mitigation** | A potential for long-term negative effects was identified for bats due to the ***Low*** to ***Medium*** collision risk of high-risk bat species. The potential unmitigated effects on these high-risk species as a result of their potential interaction with wind turbines are considered significant at a local geographic scale only, for both peak and typical activity levels.<br><br>No significant effects are anticipated at any other geographic scale. |
| **Mitigation** | In order to reduce the value of the habitat for high-risk bat species in the areas surrounding the turbines, a felling buffer of at least 50m between the tip of the blade and any trees or |

| | |
|---|---|
| | other tall vegetation that could provide high quality foraging habitat for bat species will be implemented.<br><br>Detailed mitigation measures in relation to bats is provided in Section 6 of the Bat Survey Report in **Appendix 6-1** and summarised below. Mitigation measures are proposed together with post-construction monitoring:<br><br>› Introduce felling buffers around turbines<br>› Implement blade feathering as a standard<br>› Lighting restrictions<br>› Implement curtailment, as required, on proposed turbines if significant bat fatalities encountered recorded.<br>› A minimum of three years operational monitoring, including carcass searches, to assess changes in bat activity patterns post construction and to monitor the implementation of the mitigation strategy.<br>› Adaptive mitigation strategy based on the results of the post-construction monitoring.<br><br>A bat monitoring and mitigation strategy has been devised in line with Appendix 5 of NatureScot (2021). To assess the effects of the Proposed Project on bat activity, at least 3 years of post-construction monitoring is proposed. Post-construction monitoring will include static detector surveys, walked survey transects and corpse searching to record any bat fatalities resulting from collision.<br><br>The results of post-construction monitoring shall be utilised to assess any potential changes in bat activity patterns and to monitor the implementation of the mitigation strategy.<br><br>If the monitoring identifies a curtailment requirement (i.e. significant bat fatalities encountered), a curtailment programme, in line with relevant guidelines, will be devised around key activity periods and weather parameters, as well as a potential increase in buffers.<br><br>At the end of each year, the efficacy of the mitigation and monitoring plan will be reviewed, and any identified efficiencies incorporated into the programme. This approach allows for an evidence-based review of the potential for bat fatalities at the Proposed Wind Farm Site, post construction, to ensure that the necessary measures, based on a new baseline post-construction, are implemented for the protection of bat species locally. |
| **Residual Effect following Mitigation** | Taking into account the overall low bat activity levels within the Site, the sensitive design of the Proposed Project and the implementation of best practice mitigation and adaptive post-construction monitoring measures, no significant residual effects on bats are anticipated with regard to collision mortality, barotrauma and other injuries. |

## 6.5.4 Impacts During Decommissioning

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

Decommissioning of the Proposed Project is discussed in Section 4.12 of Chapter 4 (Description of the Proposed Project) and is fully detailed in the Decommissioning Plan in Appendix 4-6.

The same mitigation to prevent significant impacts on water quality and associated aquatic fauna and other terrestrial fauna as a result of disturbance 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.

## 6.5.5 Impacts on Designated Sites

### 6.5.5.1 European Designated Sites

The Site is located completely outside of the boundary of any European site. Watercourses within the Site have a direct hydrological link to the below listed European Sites, upon which a potential for likely significant effect was identified:

- Inagh River Estuary SAC (000036)
- Carrowmore Point to Spanish Point and Islands SAC (001021)
- Mid-Clare Coast SPA (004182)

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

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

The Stage 1 Screening Assessment concluded as follows:

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

- *Inagh River Estuary SAC (000036)*
- *Carrowmore Point to Spanish Point and Islands SAC (001021)*
- *Mid-Clare Coast SPA (004182)*
- *Cliffs of Moher SPA (004005)*

*As a result, an Appropriate Assessment is required, and a Natura Impact Statement shall be 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 do 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'.*

### 6.5.5.2 Nationally Designated Sites

Impacts on nationally designated sites including NHAs and pNHAs are considered in this section of the report.

The following pNHAs were identified to be within the Likely Zone of Influence of the Proposed Project as they are hydrologically connected to either the Proposed Wind Farm Site or the Proposed Grid Connection Site:

- Inagh River Estuary pNHA [000036]
- Carrowmore Point to Spanish Point and Islands [001021]

With the implementation of the mitigations and best practice procedures for the construction, operational and decommissioning phases of the Proposed Project , as described in Table 6-12 and 6-18, respectively, 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 4-5), no significant impacts on these National Sites are anticipated.

## 6.6 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 6-10 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 to the Proposed Project of this EIAR.

### 6.6.1 Assessment of Plans

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

- Clare County Development Plan 2023-2029
- Regional Spatial and Economic Strategy 2020 – 2032
- Ireland's 4th National Biodiversity Action Plan 2023-2030
- Clare County Biodiversity Action Plan 2025-2031

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 6-22.

*Table 6-22 Assessment of plans*

| Plans | Key Policies/Issues/Objectives Directly Related To European Sites, Biodiversity and Sustainable Development In The Zone of Influence | Assessment of development compliance with policy |
|---|---|---|
| Clare County Development Plan 2023-2029 | **CDP 3.3** - It is an objective of the Clare County Council:<br>To require compliance with the objectives and requirements of the Habitats Directive, specifically Article 6(3) and where necessary 6(4), Birds, Water Framework, and all other relevant EU Directives and all relevant transposing national legislation;<br>To require project planning to be fully informed by ecological and environmental constraints at the earliest stage of project development and any necessary assessment to be undertaken, including assessments of disturbance to species, where required together with the preparation of both statutory and non-Statutory Ecological Impact Assessments (EcIA);<br>To protect, manage and enhance ecological connectivity and improve the coherence of the Natura 2000 Network;<br>To require all proposals to ensure there is 'no net loss' of biodiversity within developments.<br>To ensure that European sites and Natural Heritage Areas (designated proposed NHAs) are appropriately protected;<br>To require the preparation and assessment of all plans and projects to have regard to the information, data and requirements of the Appropriate Assessment Natura Impact Report, SEA Environmental Report and Strategic Flood Risk Assessment Report contained in Volume 10 of this Development Plan; and<br>To require compliance with the objectives of the Water Framework Directive and support the implementation of the 3rd Cycle River Basin Management Plan (and any other iteration during the lifetime of the CDP).<br><br>**CDP 11.26** - It is an objective of Clare County Council:<br>To facilitate the implementation of the River Basin Management Plan 2022-2027 and any subsequent plan for ground, surface, estuarine, coastal and transitional waters in the Plan area as part of the implementation of the EU Water Framework Directive;<br>To protect groundwater and surface water resources in accordance with the statutory requirements and specific measures as set out in the River Basin Management Plan 2022-2027, and any subsequent management plans;<br>To achieve and maintain at least good water quality status for all water bodies except where more stringent obligations are required such as Blue Dot/High Status Objective Water Bodies;<br>To consider development proposals where it can be clearly demonstrated that the development will meet the requirements of the River Basin Management Plan; and,<br>To work with and support LAWPRO and support improvements/recommendations within Priority Areas for Action, Blue Dot/High Status Objective catchments and any additional areas identified within subsequent River Basin Management Plans. | The Development Plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to biodiversity, protected species and designated sites.<br><br>The Proposed Project has been designed in order to avoid likely significant effect on biodiversity. Where the potential for significant effect on biodiversity has been identified, mitigation will be implemented as prescribed within this chapter to ensure that there is no significant impact.<br><br>Where pathways for effects on Designated Sites have been identified, mitigation shall also be implemented to ensure that there are no significant effects.<br><br>No potential for negative cumulative impacts when considered in conjunction with the Proposed Project were identified. |

| Plans | Key Policies/Issues/Objectives Directly Related To European Sites, Biodiversity and Sustainable Development In The Zone of Influence | Assessment of development compliance with policy |
|---|---|---|
| | **CDP 13.1**- It is an objective of the Clare County Council:<br>To require proposals for development which may impact on a European site to undertake and submit a Natura Impact Statement and Environmental Impact Assessment Report should it be deemed necessary as part of any planning application in accordance with the requirements of the Habitats and EIA Directives.<br><br>**CDP 15.1** - It is an objective of Clare County Council:<br>To ensure that features of importance to local biodiversity are retained as part of developments and projects being undertaken in the County.<br><br>**CDP 15.12** - It is an objective of Clare County Council:<br>To protect and promote the sustainable management of the natural heritage, flora and fauna of the County both within protected areas and in the general landscape through the promotion of biodiversity, the conservation of natural habitats, the enhancement of new and existing habitats, and through the integration of Green Infrastructure (GI), Blue Infrastructure and ecosystem services including landscape, heritage, biodiversity and management of invasive and alien species into the Development Plan;<br>To promote the conservation of biodiversity through the protection of sites of biodiversity importance and wildlife corridors, both within and between the designated sites and the wider Plan area;<br>To ensure there is no net loss of potential Lesser Horseshoe Bat feeding habitats, treelines and hedgerows within 2.5km of known roosts;<br>To implement and monitor the actions as set out in the Clare County Biodiversity Plan; and<br>To promote biodiversity net gain in any new plans/projects/policies to promote development that leaves biodiversity in a better state than before.<br><br>**CDP 15.13** - It is an objective of Clare County Council:<br>To encourage and, where appropriate, enhance the provision of biodiversity features in urban areas through the preparation of local areas plans/settlement plans, green infrastructure strategies, ecosystem services, and through the development management process.<br><br>**CDP 15.14** - It is an objective of Clare County Council:<br>To ensure that development proposals support and enhance the connectivity and integrity of habitats in the Plan area by incorporating natural features into the design of development proposals. | |

| Plans | Key Policies/Issues/Objectives Directly Related To European Sites, Biodiversity and Sustainable Development In The Zone of Influence | Assessment of development compliance with policy |
|---|---|---|
| | **CDP 15.15** - It is an objective of Clare County Council:<br>To support the implementation of positive conservation management on lands which are owned or managed by Clare County Council.<br>To protect and where possible enhance the biodiversity value of land owned and managed by Clare County Council;<br>To support national policy to create new woodlands on public land and participate in the Creation of Woodlands on Public Lands Scheme and any subsequent schemes subject to the appropriate ecological assessments;<br>To create new native woodlands on public lands which will be carried out in accordance with proper planning and sustainable development in order to ensure important habitats such as Wetlands (which are key carbon sequestration locations) are not lost due to their development; and<br>To support the use of natural approaches to flood management and control on lands owned or managed by or on behalf of Clare County Council subject to the appropriate ecological assessments.<br><br>**CDP 15.19** – It is an objective of the Clare County Council:<br>To protect individual or groups of trees within the Plan area which are important for environmental, recreational, historical, biodiversity and/or aesthetic reasons or by reason of contribution to sense of place, including groups of trees which correspond with protected habitats, or which support protected species, under the Habitats Directive;<br><br>To protect woodlands and hedgerows from damage and/or degradation and to prevent disruption of the connectivity of woodlands and hedgerows of the County; | |

| Plans | Key Policies/Issues/Objectives Directly Related To European Sites, Biodiversity and Sustainable Development In The Zone of Influence | Assessment of development compliance with policy |
|---|---|---|
| Regional Spatial and Economic Strategy 2020 – 2032 | **Growth Ambition 2: Environment – Natural Region**<br><br>**RPO 5.4** - Encourage the prioritisation of Site-Specific Conservation Objectives (SSCO) for all sites of Conservation Value, designated in EU<br><br>Directive (i.e. SACs, SPAs) to integrate with the development objectives of this Strategy.<br><br>**RPO 5.5** - Ensure efficient and sustainable use of all our natural resources, including inland waterways, peatlands, and forests in a manner which ensures a healthy society a clean environment and there is no net contribution to biodiversity loss arising from development supported in this strategy. Conserve and protect designated areas and natural heritage area. Conserve and protect European sites and their integrity.<br><br>**RPO 5.6** - Develop awareness and create a greater appreciation of the benefits of our natural heritage, including on the health, wealth and well-being of the region's ecosystem services.<br><br>**RPO 5.7** - Ensure that all plans, projects and activities requiring consent arising from the RSES are subject to the relevant environmental assessment requirements including SEA, EIA and AA as appropriate. | The strategy was comprehensively reviewed, with particular reference to Policies and Objectives that relate to biodiversity, protected species and designated sites.<br><br>The Proposed Project has been designed in order to avoid likely significant effect on biodiversity and designated sites.<br><br>Where pathways for effects on Designated Sites have been identified, mitigation shall be implemented to ensure that there are no significant effects.<br><br>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.<br>› **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.<br>› **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.<br>› **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 action plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to biodiversity, protected species and designated sites.<br><br>The Proposed Project has been designed in order to avoid likely significant effect on biodiversity. Where the potential for adverse effect on biodiversity has been identified, mitigation will be implemented as prescribed within this chapter to ensure that there is no significant impact.<br><br>Where pathways for effects on Designated Sites have been identified, mitigation shall |

| Plans | Key Policies/Issues/Objectives Directly Related To European Sites, Biodiversity and Sustainable Development In The Zone of Influence | Assessment of development compliance with policy |
|---|---|---|
| | **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. | also be implemented to ensure that there are no significant effects.<br><br>No potential for negative cumulative impacts when considered in conjunction with the Proposed Project were identified. |
| Clare County Biodiversity Action Plan 2025-2031 | The plan has been drafted with a focus on five key pillars, each with a particular objective, which are highlighted below.<br><br>**Pillar 1:** Developing and Researching the County's Ecological Network<br>**Objective:** Support and strengthen our database to conserve, manage and enhance biodiversity within the county through data collection, mapping and research.<br><br>**Pillar 2:** Integrating Biodiversity into Our Work Practices<br>**Objective:** Promote and integrate biodiversity conservation into decision-making processes and operations through policy, best practice and procedures.<br><br>**Pillar 3:** Restoring, Enhancing and Conserving our Biodiversity Assets<br>**Objective:** Deliver actions which aim to conserve, restore and enhance biodiversity and to reverse biodiversity loss at a county-wide level by 2031.<br><br>**Pillar 4:** Raising Biodiversity Awareness and Education for Present and Future Generations<br>**Objective:** Raise awareness and appreciation of biodiversity within the county through education, training and outreach initiatives.<br><br>**Pillar 5:** Building Collaborative Partnerships for Nature<br>**Objective:** Enhance collaboration among all people adopting a whole-of-society approach to protect, conserve and enhance biodiversity within the county. | The Proposed Project will not result in significant effects on habitats and features of ecological importance. The Proposed Project will not impact on connectivity within the wider area and there is no potential for significant effects on water quality. There will be no significant effects on biodiversity as a result of the Proposed Project. |

## 6.6.2 Assessment of Projects

As described in Section 2.9 of the EIAR, relevant projects have been assessed cumulatively with the Proposed Project and include planning applications in the vicinity of the site, within the likely zone of influence of all habitats and species considered in this report and include other wind energy applications within the wider area. These have not been repeated here to reduce the duplication of information within this EIAR. However, they have been fully considered in the assessment with further detail provided below. In addition, Section 6.6.6 concludes on their potential for impact on biodiversity.

Table 6-23 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: Ornithology of this EIAR.

*Table 6-23 Cumulative Study Areas in relation to ecological receptors (birds are assessed separately within Chapter 7 of this EIAR)*

| Individual Topic | Maximum Extent | Justification |
|---|---|---|
| **Biodiversity (including Bats)** | 10 km from the Site<br><br>Consideration for the Biodiversity cumulative extent is also given to the Birds and Water Cumulative geographical boundaries. | Using the precautionary approach and given the nature and scale of the Proposed Project, the geographical boundary for terrestrial ecological aspects, i.e. habitats and species, is 10km for cumulative assessment for the Proposed Wind Farm Site, and 250m from the Proposed Grid Connection site.<br><br>In particular, this approach aligns with Nature Scot (2021) guidance: Bats and Onshore Wind Turbines. |
| **Water** | **Proposed Wind Farm Site:**<br><br>Annagh[Clare]_SC_010 and Inagh [Ennistymon]_SC_010 sub-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).<br><br>**Proposed Grid Connection:**<br><br>Within a 250m buffer zone of the Proposed Grid Connection Site. | 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). Therefore, other wind-farm developments are considered within the Annagh[Clare]_SC_010 and Inagh [Ennistymon]_SC_010 sub-catchments for cumulative effects.<br><br>River Sub Basins are used for smaller developments (i.e. private & commercial type developments). These developments are not likely to present a significant cumulative impact risk on a regional catchment scale as any effects would likely be imperceptible as a result of the setback distances and localised nature of the associated works. Given the nature and scale of the proposed works and the lack of hydrological cumulative impact potential beyond the river sub basin scale, the Water cumulative study area is defined by river sub |

| | | |
|---|---|---|
| | | basins in which the Proposed Wind Farm Site is located.<br><br>Due to the narrow nature of the proposed 33kV underground cabling trench (~0.6m wide), a 250m buffer zone is an appropriate scale when considering potential cumulative effects on the water environment. |

### 6.6.2.1 Other Wind Farm Projects

For the purposes of this cumulative assessment, wind farms within a 10-kilometre radius of the Site were considered in further detail below, in line with NatureScot (2021) guidance. Details of wind farm projects within 10km of the Proposed Project are provided in Appendix 2-2 of this EIAR and are summarised below also in the context of terrestrial ecology. Seven wind farms were identified as being within the cumulative study boundary as outlined in Table 6-24 below. Potential for in-combination effects in relation to European sites are fully assessed in Section 8 of the NIS accompanying this application.

*Table 6-24 Wind farm projects considered to be within the cumulative study area (Biodiversity) of the Proposed Project*

| Wind Farm | Planning Status | Number of Turbines | Separation Distance (turbine to turbine) | County |
|---|---|---|---|---|
| Booltiagh I | Existing | 12 | c.9.2 km | Co. Clare |
| Booltiagh Extension | Existing | 6 | c.8.6 km | Co. Clare |
| Cahermurphy | Existing | 4 | c.9.8 km | Co. Clare |
| Cahermurphy West | Proposed | 8 | c.10 km | Co. Clare |
| Cahermurphy II | Proposed | 10 | c.9.8 km | Co. Clare |
| Slievecallan | Existing | 29 | c.1.6 km | Co. Clare |
| Illaunbaun* | Appealed (new application for one turbine) | 6 | c.1.5 km | Co. Clare |

* A second application for a single turbine within the site was also considered in this assessment.

#### Booltiagh I Wind Farm

Booltiagh I Wind Farm is an existing wind farm consisting of 12 no. turbines and is approx. 9.2 km from the Site. As per the assessment of residual effects from the Proposed Project, as well as those in the EIAR for Bootliagh I Wind Farm, there is no potential for significant effects, following incorporation of mitigation, on downstream watercourses during construction. Additionally, the Booltiagh I Wind Farm has already been constructed and as such there is no potential for cumulative effects with the Proposed Project during construction. No potential for in-combination effects is predicted given that the projects will not be constructed at the same time. Potential for cumulative effects during operation is limited to impacts on bats. The Proposed Project is not predicted to result in any significant residual effects on bats when considered alone. Collision risk has been assessed as Low under typical activity conditions and Medium at peak activity levels for a small number of species, with adaptive post-construction monitoring proposed to confirm predictions. No loss or damage to bat roosts is anticipated, no high-value commuting or foraging habitat will be affected, and no displacement of individual bats or local bat populations is predicted.

Given the above, there is no potential for the Proposed Project to result in cumulative effects on biodiversity with the Booltiagh I Wind Farm.

### Booltiagh Extension

Booltiagh Extension is an existing wind farm extension consisting of 6 no. turbines and is approx. 8.6 km from the Site. As per the assessment of residual effects from the Proposed Project, as well as those in the EIAR for Bootliagh Extension, there is no potential for significant effects, following incorporation of mitigation, on downstream watercourses during construction. Additionally, The Booltiagh Extension Wind Farm has already been constructed and as such there is no potential for cumulative effects with the Proposed Project during construction. No potential for in-combination effects is predicted given that the projects will not be constructed at the same time. Potential for cumulative effects during operation is limited to impacts on bats. The Proposed Project is not predicted to result in any significant residual effects on bats when considered alone. Collision risk has been assessed as Low under typical activity conditions and Medium at peak activity levels for a small number of species, with adaptive post-construction monitoring proposed to confirm predictions. No loss or damage to bat roosts is anticipated, no high-value commuting or foraging habitat will be affected, and no displacement of individual bats or local bat populations is predicted.

Given the above, there is no potential for the Proposed Project to result in cumulative effects on biodiversity with the Booltiagh Extension Wind Farm.

### Cahermurphy

Cahermurphy Wind Farm is an existing wind farm consisting of 4 no. turbines and is approx. 9.8 km from the Site. As per the assessment of residual effects from the Proposed Project, as well as those in the EIAR for Cahermurphy Wind Farm, there is no potential for significant effects, following incorporation of mitigation, on downstream watercourses during construction. Additionally, Cahermurphy Wind Farm has already been constructed and as such there is no potential for cumulative effects with the Proposed Project during construction. No potential for in-combination effects is predicated given that the projects will not be constructed at the same time. Potential for cumulative effects during operation is limited to impacts on bats. The Proposed Project is not predicted to result in any significant residual effects on bats when considered alone. Collision risk has been assessed as Low under typical activity conditions and Medium at peak activity levels for a small number of species, with adaptive post-construction monitoring proposed to confirm predictions. No loss or damage to bat roosts is anticipated, no high-value commuting or foraging habitat will be affected, and no displacement of individual bats or local bat populations is predicted.

Given the above, there is no potential for the Proposed Project to result in cumulative effects on biodiversity with the Cahermurphy Wind Farm.

### Slievecallan

Sleivecallan Wind Farm consists of 29 no. turbines and its closest turbine is 1.6 km from the Site. As per the assessment of residual effects from the Proposed Project, as well as those in the EIAR for Sleivecallan Wind Farm, there is no potential for significant effects, following incorporation of mitigation, on downstream watercourses during construction. Additionally, Sleivecallan Wind Farm has already been constructed and as such there is no potential for cumulative effects with the Proposed Project during construction. No potential for in-combination effects is predicted given that the projects will not be constructed at the same time. Potential for cumulative effects during operation is limited to impacts on bats. The Proposed Project is not predicted to result in any significant residual effects on bats when considered alone. Collision risk has been assessed as Low under typical activity conditions and Medium at peak activity levels for a small number of species, with adaptive post-construction monitoring proposed to confirm predictions. No loss or damage to bat roosts is anticipated, no high-value commuting or foraging habitat will be affected, and no displacement of individual bats or local bat populations is predicted.

Given the above, there is no potential for the Proposed Project to result in cumulative effects on biodiversity with the Sleivecallan Wind Farm.

### Cahermurphy West

Cahermurphy West Wind Farm consists of 8 no. turbines and its closest turbine is 9.5 km from the Site. As per the assessment of residual effects from the Proposed Project, as well as those in the EIAR for Cahermurphy West Wind Farm, there is no potential for significant effects, following incorporation of mitigation, on downstream watercourses during construction. No potential for in-combination effects is predicted given that the projects will not be constructed at the same time. Potential for cumulative effects during operation is limited to impacts on bats. The Proposed Project is not predicted to result in any significant residual effects on bats when considered alone. Collision risk has been assessed as Low under typical activity conditions and Medium at peak activity levels for a small number of species, with adaptive post-construction monitoring proposed to confirm predictions. No loss or damage to bat roosts is anticipated, no high-value commuting or foraging habitat will be affected, and no displacement of individual bats or local bat populations is predicted.

Given the above, there is no potential for the Proposed Project to result in cumulative effects on biodiversity with the Cahermurphy West Wind Farm.

### Cahermurphy II

Cahermurphy II Wind Farm consists of 8 no. turbines and is 9.8 km from the Site. As per the assessment of residual effects from the Proposed Project, as well as those in the EIAR for Cahermurphy II, there is no potential for significant effects, following incorporation of mitigation, on downstream watercourses during construction. No potential for in-combination effects is predicted given that the projects are unlikely to be constructed at the same time, and are located within separate sub catchment, within the exception of one small section of the Proposed Enhancement Lands of the Proposed Project. Potential for cumulative effects during operation is limited to impacts on bats. The Proposed Project is not predicted to result in any significant residual effects on bats when considered alone. Collision risk has been assessed as Low under typical activity conditions and Medium at peak activity levels for a small number of species, with adaptive post-construction monitoring proposed to confirm predictions. No loss or damage to bat roosts is anticipated, no high-value commuting or foraging habitat will be affected, and no displacement of individual bats or local bat populations is predicted.

Given the above, there is no potential for the Proposed Project to result in cumulative effects on biodiversity with the Cahermurphy II Wind Farm.

### Illaunbaun

Illaunbaun Wind Farm consists of 6 no. turbines and is 1.5 km from the Site. As per the assessment of residual effects from the Proposed Project, as well as those in the EIAR for Illaunbaun Wind Farm, there is no potential for significant effects, following incorporation of mitigation, on downstream watercourses during construction. No potential for in-combination effects is predicted given that the projects will not be constructed at the same time. Potential for cumulative effects during operation is limited to impacts on bats. The Proposed Project is not predicted to result in any significant residual effects on bats when considered alone. Collision risk has been assessed as Low under typical activity conditions and Medium at peak activity levels for a small number of species, with adaptive post-construction monitoring proposed to confirm predictions. No loss or damage to bat roosts is anticipated, no high-value commuting or foraging habitat will be affected, and no displacement of individual bats or local bat populations is predicted.

Given the above, there is no potential for the Proposed Project to result in cumulative effects on biodiversity with the Illaunbaun Wind Farm.

### 6.6.2.2 Existing Habitats and Land Uses

The potential for the Proposed Project to result in a cumulative loss or deterioration of habitats, or impact on the KER species identified, was considered in relation to the existing land uses in the area. Land use in the wider area is dominated by agricultural pasture, commercial forestry and peatland turbary, as well as uncut raised bog habitats. Land use in the wider area will not contribute to significant cumulative effects to biodiversity in-combination with the Proposed Project, given the mitigation provided in this report. Furthermore, it is unlikely that the construction phase of the Proposed Project, which will last 18-24 months would overlap with felling operations (forestry rotations typically last 30-50 years).

The Project Footprint is located primarily on Conifer plantation (WD4) and marginal grassland habitats. Annex I peatlands, heath and grasslands within the Site have been avoided where possible and any loss of high value habitat will be offset through the measures described in the BMEP in Appendix 6-4. The Proposed Project will not contribute to an overall net loss of high value habitat.

### 6.6.2.3 Other Projects Within 250m of Proposed Grid Connection Site

A desk-based planning search was undertaken to identify permitted developments within 250m vicinity of the Proposed Grid Connection Site using the Clare County Council planning portal. Given the short nature of the proposed 33kV underground cabling, only development is located within 250m and consists of a of a livestock slatted unit with associated ancillary siteworks.

Given the lack of significant residual effects predicted as a result of the Proposed Project, and the small nature of the single development within 250m of the proposed 33kV underground cabling there is no potential for likely significant cumulative effect when considered in-combination with these projects. The works along the Proposed Grid Connection Site are minor and transient, similar to roadworks being completed across the country and have no potential for significant cumulative effects on ecology.

## 6.6.3 Cumulative Effects with Agriculture

According to Corine land cover mapping (www.epa.ie) (2018) the Water Study Area catchments are largely agricultural catchment.

Agricultural practices such as the movement of soil and the addition of fertilizers and pesticides can lead to nutrient losses and the entrainment of suspended solids in local surface watercourses. This can have a negative effect on local and downstream surface water quality.

In an unmitigated scenario the Proposed Project would have the potential to interact with these agricultural activities and contribute to a deterioration of downstream surface water quality through the emissions of elevated concentrations of suspended solids and ammonia.

However, the mitigation measures detailed in Section 9.5 for the construction, operation and decommissioning phases of the Proposed Project will ensure the protection of downstream surface water quality.

For these reasons, there will not be a significant cumulative effect on hydrology or water quality associated with agricultural activities.

### 6.6.4 Cumulative Effects with Commercial Forestry

The most common water quality problems arising from forestry relate to the release of sediment and nutrients to the aquatic environment, and impacts from acidification. Forestry works can also give rise to modified stream flow regimes caused by associated land drainage.

However, the mitigation measures detailed for the construction, operation and decommissioning phases of the Proposed Project will ensure the protection of downstream surface water quality.

With regard non-wind farm related forestry activities at the Site and the potential for cumulative impacts, it is proposed that all scheduled tree felling or replanting will be planned around the Proposed Project construction phase in order to prevent hydrological cumulative impacts.

For these reasons, there will not be a significant cumulative effect on hydrology or water quality associated with commercial forestry activities.

### 6.6.5 Cumulative Effects with Turbary Peat Cutting Activities

Private peat cutting on turbary plots will likely continue in the vicinity of the Site and in the wider cumulative area. The construction phase of the Proposed Project is likely to interact with these turbary activities and result in a deterioration of downstream surface water quality through the emissions of elevated concentrations of suspended solids and ammonia.

However, the areas of private peat cutting will be small, significantly limiting the potential for cumulative effects to arise with the Proposed Project. Nevertheless, the mitigation measures detailed for the construction, operational, and decommissioning phases of the Proposed Project will ensure the protection of downstream surface water quality.

For these reasons, there will not be a significant cumulative effect on hydrology or water quality associated with turbary activities.

### 6.6.6 Cumulative Effects of the Proposed Project

The potential for cumulative effects with regard all elements of the Proposed Project itself (i.e. Proposed Wind Farm Site, Proposed Grid Connection Site and Proposed Enhancement Site) is assessed.

The majority of the Proposed Turbines (6 no. of 9 proposed turbines) are located in the Inagh River catchment while the majority of the Proposed Grid Connection 33kV underground cabling (5.6km of the total 7.1km) and substation extension are located in the Annagh River catchment. The fact the works associated with the Proposed Project are concentrated in separate catchment areas, means no significant hydrological cumulative effects will occur.

Also, the fact that the proposed 33kV underground cabling is mainly along public roads along with the lack of in-stream works, the intermittent and transient nature of the trenching excavations, the Proposed Grid Connection Site is not expected to contribute to hydrological cumulative effects with the Proposed Project.

Regards habitat and fauna, the Proposed Wind Farm Site is located in an upland area dominated by forestry and peatland habitats, while the proposed 33kV underground cabling will be predominantly within existing access tracks and public roads. Given the difference in habitats, and potential supporting faunal habitat, no cumulative effects of the Project are anticipated.

No significant cumulative effects on biodiversity are envisaged during the construction phase of the different elements of the Proposed Project.

### 6.6.7 Assessment of Cumulative Effects

The residual construction, operational and decommissioning impacts of the Proposed Project are considered cumulatively with other plans and projects as described in Sections 6.6.1 and 6.6.2. 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 impact assessment provided in Section 6.5 (including mitigation measures), it is concluded that there will be no significant residual habitat loss, disturbance or deterioration of water quality associated with the Proposed Project and therefore it cannot contribute to any cumulative effect when considered in-combination with other plans and projects. The other wind farms in the area were considered (among other projects) but the Proposed Project has been deliberately designed to minimise the effects on biodiversity through the siting of the Proposed Project on habitats of low ecological value and an emphasis on protection of surface water features (and associated aquatic fauna) during construction of the Proposed Project. The Proposed Project also includes a Biodiversity Management and Enhancement Plan, which further minimises /mitigates any potential for individual or cumulative negative effects on biodiversity and proposes enhancement measures for habitats and species within the EIAR boundary.

No significant effects as a result of the Proposed Project in relation to disturbance, displacement or mortality of faunal species has been identified. Therefore, there is no potential for the Proposed Project to contribute to any cumulative effect in this regard.

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

## 6.7 EIA Classification Summary

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

*Table 6-25 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 **Error! Reference source not found.** | No significant residual effect at any geographic scale | Not Significant |
| Aquatic Habitats and Related Species | Indirect, negative, temporary, significant effect | Section **Error! Reference source not found.** | No significant residual effect at any geographic scale | Not Significant |
| Peatland mosaic Habitats | Direct, negative, permanent, significant effect | Section **Error! Reference source not found.**<br><br>Appendix 6-4 | No significant residual effect at any geographic scale | Not Significant |
| Bats | No significant effect | Section **Error! Reference source not found.**.1<br><br>Appendix 6-1 | No significant residual effect at any geographic scale | Not Significant |
| Marsh Fritillary | Direct, negative, permanent, significant effect | Section **Error! Reference source not found.**.2<br><br>Appendix 6-4 | No significant residual effect at any geographic scale | Not Significant |
| Badger | No significant effect | Section **Error! Reference** | No significant residual effect at | Not Significant |

| | | | | |
|---|---|---|---|---|
| | | **source not found.**.4 | any geographic scale | |
| Otter | Habitat Degradation:<br><br>Indirect, temporary, significant effect<br><br>Disturbance:<br><br>Temporary, significant effect | Section **Error! Reference source not found.**.3 | No significant residual effect at any geographic scale | Not Significant |
| Reptiles and Amphibians | Direct, negative, temporary, significant effect | Section **Error! Reference source not found.**.6 | No significant residual effect at any geographic scale | Not Significant |
| Pine Marten and Red Squirrel | Direct, negative, temporary, significant effect | Section **Error! Reference source not found.**.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 | Indirect, negative, temporary, significant effect | Section **Error! Reference source not found.** | No significant residual effect at any geographic scale | Not Significant |
| Aquatic Habitats and Related Species | Indirect, negative, temporary, significant effect | Section **Error! Reference source not found.** | No significant residual effect at any geographic scale | Not Significant |
| Bats | Long-term, Negative, Significant at the local scale | Section **Error! Reference source not found.** | 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, due to the reduced scale of the proposed decommissioning works in comparison to construction phase works. | Section 6.5.4 | No significant residual effect at any geographic scale | Not Significant |

## 6.8 Conclusion

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

The potential for effects on European Designated Sites is fully described in the Natura Impact Statement 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, will not have adverse effects on the European Sites that were assessed as part of the 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 International, National, County, or Local scales or on any of the identified KERs.