APPENDIX 6-1

BOTANICAL SURVEY REPORT

Botanical Survey Report - Appendix 6-1

Maughanaclea Renewable Energy Development, Co, Cork

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1. INTRODUCTION

1.1 Introduction

MKO were commissioned to undertake detailed botanical surveys to provide an evaluation and assessments of the habitats occurring within, and directly adjacent to the Proposed Project footprint. The detailed botanical surveys were undertaken throughout 2024/ 2025 by MKO.

As detailed in Section 1.1.1 in Chapter 1 of the EIAR, the various project components are described and assessed using the following references: 'Proposed Project', 'Proposed Grid Connection', 'Proposed Wind Farm, 'Proposed Wind Farm site', and 'the Site'.

1.2 Statement of Authority

This report was prepared by Rachel Minogue (B.Sc., Environmental Science). Rachel Minogue is a Project Ecologist with over 3 years' experience in ecological consultancy. This report was reviewed by Rachel Walsh (B.Sc. Env., MCIEEM). Rachel Walsh is a Senior Ecologist with over 5 years' experience in ecological consultancy, habitat and botanical surveying. Rachel Walsh has undertaken numerous habitat surveys and assessments for a wide range of projects in renewable energy.

The baseline terrestrial ecological surveys were undertaken by Rachel Minogue, Matthew Kieran (BSc), Fiona Kileen (BSc), Colin Murphy (BSc, MSc), Tom Peters (BSc, MSc), Ciara Lynn Sheehan (BSc), and Niamh Rowan (BSc) of MKO throughout 2024 and 2025. Surveyors have relevant academic qualifications in ecology and environmental science and are competent experts in undertaking the ecological surveys and botanical assessments required.

2. SURVEY METHODOLOGY

2.1 Scope

The detailed botanical assessments encompassed the entire Proposed Wind Farm site. Habitats were surveyed with a particular focus on habitats of high conservation importance, such as areas mapped under Article 17 reporting, as described in the Desk Study section of Chapter 6 of the EIAR, and other habitat types listed under Annex I of the Habitats Directive present within the Proposed Wind Farm site. Habitat surveys were also focussed on habitats within the footprint of the Proposed Wind Farm and habitats likely to be impacted by the construction footprint.

2.2 Field Surveys

Dedicated botanical assessments were undertaken within the Proposed Wind Farm site in 2025 on the 1st of July, the 14th of May and the 13th of May. In 2024, surveys were undertaken on the 28th of August, 18th of July and 17th of July.

Plant nomenclature for vascular plants follows 'New Flora of the British Isles' (Stace, 2010), while mosses and liverworts nomenclature follow 'Mosses and Liverworts of Britain and Ireland - a field guide' (British Bryological Society, 2010). All surveys of vegetation were completed within the optimum period for vegetation surveys/habitat mapping, i.e., April to September in line with '*Best Practice Guidance for Habitat Survey and Mapping*' (Smith *et al.*, 2011)[1]. Habitats within the site were classified according to the guidelines set out in '*A Guide to Habitats in Ireland*' (Fossitt, 2000[2]), which classifies habitats based on the vegetation present and management history. The entire Proposed Wind Farm site was subject to a walkover survey. Certain areas were subject to a more detailed assessment, including areas within and adjacent to the Proposed Wind Farm infrastructure. A total of 43 relevés were undertaken within the Proposed Wind Farm site. Surveys on peatland/ heath/ grassland habitats utilised a 2m x 2m relevé size as per Perrin et al. (2014). Surveys of woodland utilised a 10m x 10m relevé size as per Perrin et al (2008). The locations of all relevés are shown in Figure 1-1. Note that conifer plantation (WD4) habitat within the footprint of proposed peat and spoil management areas in the vicinity of Turbines T07, T08, T09 and T10, and the area inbetween proposed Turbines T09 and T10, is broadly represented by the relevés undertaken at these turbine locations and temporary construction compound location, located within the same forestry areas, as set out in the Results Section.

The habitat assessment surveys described in this report, including EU Habitats Directive Annex I classification and condition assessment, have been undertaken with reference to the following guidelines and interpretation documents:

- Perrin, P.M, Martin, J.R., Barron, J.R., Roche & O'Hanrahan, B. (2014) *Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland.* Version 2.0. Irish Wildlife Manuals, No. 79. National Parks and Wildlife Service.
- 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.
- 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.

[1] *(Smith et al 2011). Best Practice Guidance for Habitat Survey and Mapping. Available at* https://www.heritagecouncil.ie/content/files/best_practice_guidance_habitat_survey_mapping_onscreen_version_2011_8mb.pdf
[2] *Fossitt (2000). A Guide to Habitats in Ireland. Available at* https://www.npws.ie/sites/default/files/publications/pdf/A%20Guide%20to%20Habitats%20in%20Ireland%20-%20Fossitt.pdf

- NPWS (2025), The Status of EU Protected Habitats and Species in Ireland. Volume 2: *Habitat Assessments*. Unpublished NPWS report.
- Commission of the European Communities (2007) Interpretation manual of European Union habitats. Eur 27. European Commission DG Environment.

2.2.1 Vegetation Composition Assessment

Detailed habitat classification and assessment was undertaken by MKO at targeted locations within the Proposed Wind Farm site with relevés undertaken in 2024 & 2025 within the footprint of each turbine base, borrow pits, temporary construction compounds, proposed 110kV onsite substation, and meteorological (met) mast. The extent of each habitat on site was mapped using aerial photography, handheld GPS and smartphone technology. A representative photograph was also taken for each of the habitats recorded on site, including all relevés. Vegetation was sampled by taking botanical quadrats/relevés within representative habitat areas of the Proposed Wind Farm Site. This allowed for accurate habitat classification. 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.

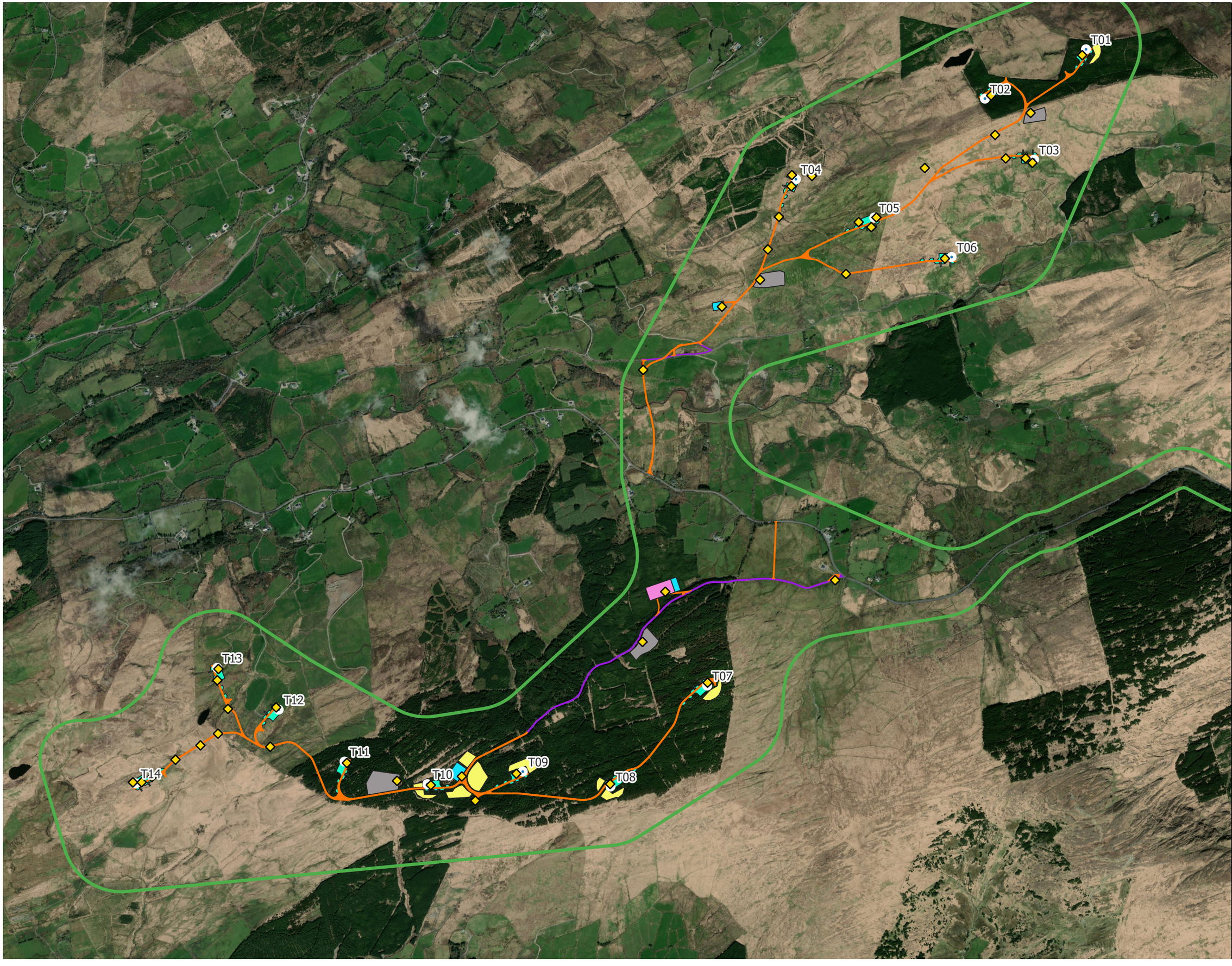
A fundamental requirement of the IVC is to *"aid in definition and identification of EU Habitat Directive (92/43/EEC) Annex I habitats*" and to '*inform the planning process, for example through environmental impact assessments'*. The Engine for Relevés to Irish Communities Assignment (ERICA)[3] is a 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 were uploaded to ERICA, analysed and the results data downloaded. The analysis procedure uses a clustering process to assign classification affinity to vegetation plots based on a degree of membership to each of the communities defined by the IVC. The table below details the categorizing types of plots utilizing the clustering analysis. This categorizing procedure was utilized to determine if relevés within the Study Area Boundary had any affinity to Annex I habitats.

Areas of wet heath (HH3) and upland blanket bog (PB2) recorded within the Proposed Wind Farm site were categorised further into wet heath community types and were assessed as per the condition assessment criteria provided by Perrin et al (2014)[4].

Table 2-1 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.

[3] *Perrin, 2019, ERICA – Engine for Relevés to Irish Communities Assignment V5.0 User's Manual, Online, Available at: https://biodiversityireland.shinyapps.io/vegetation-classification/_w_9cd4889a/manual.pdf, Accessed December 2025*
[4] *Perrin et al. (2014). Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland. Version 2.0. Irish Wildlife Manuals, No. 79. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland. Available at https://www.npws.ie/sites/default/files/publications/pdf/IWM79.pdf*



Map Legend

- Releve Points
- EIAR Site Boundary
- Proposed Turbine Locations
- Proposed Turbine Foundations
- Proposed Temporary Construction Compounds
- Proposed 110kV Substation
- Proposed New Roads
- Proposed Hardstands
- Existing Roads to be Upgraded
- Proposed Met Mast Location
- Proposed Borrow Pits
- Proposed Peat and Spoil Management Areas

Drawing Title

Relevé Locations

Project Title: Maughanaclea Renewable Energy Development	
Drawn By: RW	Checked By: RW
Project No.: 240225	Drawing No.: Figure 2-1
Scale: 1:17,000	Date: 2026-03-05

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3. SURVEY RESULTS

3.1.1 Turbine T01 and Associated Infrastructure

Turbine T01 and associated infrastructure (hard stand and access roads) are located within a large, mature, dense Conifer Plantation (WD4) in the northeast of the Proposed Wind Farm site. The Conifer Plantation is located on sloping ground, on peat soils. Ground conditions varied, with drier grounds covered in needles recorded on higher grounds (upper slopes), and wet ground dominated by carpets of bryophytes and sphagnum recorded on lower grounds (base of slopes). This plantation was dominated by dense Sitka Spruce (*Picea sitchensis*).

Table 3-1 Botanical Survey Results for Turbine T01 and hardstand

Turbine T01		
Management Regime: Conifer Plantation		
Releve Area: 10x10m		
Date of Survey: 17/07/2024		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM co-ordinates: 512194, 559004).**
Canopy Layer		
Sitka Spruce	*Picea sitchensis*	100
Field Layer		
Ling heather	*Calluna vulgaris*	10
Purple moor grass	*Molinia caerulea*	10
Ground Layer		
Sphagnum cuspidatum	*Sphagnum cuspidatum*	5
Sphagnum tenellum	*Sphagnum tenellum*	5
Thuidium tamariscinum	*Thuidium tamariscinum*	20
Pleurozium schreberi	*Pleurozium schreberi*	20
Pine needles		50
Fossitt (2000) Habitat Classification		**Conifer Plantation (WD4)**

Plate 3-1 Dense Conifer Plantation (WD4) within footprint of proposed Turbine T01/ hardstand

3.1.2 Turbine T02 and Associated Infrastructure

Turbine T02 and associated infrastructure (hard stand and access roads) are located within a large, mature, dense Conifer Plantation (WD4) in the northeast of the Proposed Wind Farm site. This Conifer Plantation is located on a steep slope, on peat soils. Ground conditions vary, with drier grounds covered in needles recorded on higher grounds (upper slopes), and wet ground with bryophytes and *Sphagnum* recorded on lower grounds (base of slopes). This plantation is dominated by dense Sitka Spruce (*Picea sitchensis*).

Table 3-2 Botanical Survey Results for Turbine T02 and hardstand.

Turbine T02		
Management Regime: Conifer Plantation		
Releve Area: 10x10m		
Date of Survey: 17/07/2024		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 511734, 558780)**
Canopy Layer		
Sitka Spruce	*Picea sitchensis*	100
Ground Layer		

Sphagnum tenellum	*Sphagnum tenellum*	4
Thuidium tamariscinum	*Thuidium tamariscinum*	20
Pleurozium schreberi	*Pleurozium schreberi*	5
Polytrichum commune	*Polytrichum commune*	5
Hypnum jutlandicum	*Hypnum jutlandicum*	10
Pine needles		50
Fossitt (2000) Habitat Classification		**Conifer Plantation (WD4)**

Plate 3-2 Dense Conifer Plantation (WD4) within footprint of proposed Turbine T02/ hardstand

3.1.3 Access Road linking T01, T02 to T03 / T05

The access road linking T01 and T02, to T03/ T05 is located in the northeast of the Proposed Wind Farm site. The access road is located partially within mature Conifer Plantation (WD4) dominated by Sitka spruce (*Picea sitchensis*) linking T01 and T02, and on an area of recently planted Conifer Plantation (WD4) located on steep sloping ground. The ground conditions are dry, with areas of exposed, bare peat present throughout the area. The ground vegetation is comprised of typical heath species, such as purple moor grass, tormentil and ling heather. The access road then runs partially through an area of degraded Dry Humid Acid Grassland/ Wet Grassland (GS3/GS4).

Table 3-3 Botanical Survey Results for access road linking T01, T02 to T03/T05

Proposed access road linking T01, T02, and T03 to T05			
Management Regime: Conifer plantation			
Releve Area: 10x10m			
Date of Survey: 17/07/2024, 01/07/2025			
Species		**% Cover**	
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 511649, 558464)**	**Plot 2 (ITM 511457, 558342)**
Canopy Layer			
Sitka Spruce saplings	*Picea sitchensis*	70	80
Field Layer			
Purple Moor Grass	*Molinia caerulea*	50	40
Ling Heather	*Calluna vulgaris*	20	15
Grey willow	*Salix cinerea*	0	5
Common bent	*Agrostis capillaris*	5	5
Alder	*Alnus glutinosa*	0	4
Yorkshire fog	*Holcus lanatus*	10	20
Sweet Vernal Grass	*Anthoxanthum odoratum*	10	15
Cross Leaved Heath	*Erica tetralix*	5	5
Tormentil	*Potentilla erecta*	5	5
Bulbous rush	*Juncus bulbosus*	5	5
Red Fescue Grass	*Festuca rubra agg.*	2	0

Bog Cotton	*Eriophorum angustifolium*	5	5
Gorse	*Ulex europaeus*	5	0
Heath bedstraw	*Galium saxatile*	5	5
Deer Grass	*Trichophorum cespitosum*	5	3
Glaucous sedge	*Juncus squarrosus*	4	5
Soft rush	*Juncus effusus*	0	8
Ground Layer			
Polytrichum commune		10	5
Campylopus introflexus		5	5
Sphagnum tenellum		10	5
Fossitt (2000) Habitat Classification		**Conifer Plantation (WD4)**	

Plate 3-3 Proposed access road from T01/T02 to T03/ T05 located on steep sloping ground, on recently planted Conifer Plantation (WD4)

3.1.4 Turbine T03 and Associated Infrastructure

Turbine T03 and associated hard stand are located in the northeast of the Proposed Wind Farm site, on an area of degraded Dry Humid Acid Grassland/ Wet Grassland (GS3/GS4). The area is degraded as a result of on-going intensive sheep grazing, creating a short, uniform sward with little species diversity and a dry underfoot. Turbine T03 and hardstand are located on sloping grounds. A large area of recently planted Conifer Plantation (WD4) is located to the north of T03.

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

Table 3-4 Botanical Survey results for Turbine T03 and hardstand.

Turbine T03				
Management Regime: Agricultural Grazing				
Releve Area: 2x2m				
Date of Survey: 17/07/2024, 1/07/2025				
Species		**% Cover**		
Vascular Plants	**Scientific Name**	**Plot 1 (511938, 558463)**	**Plot 2 (511893, 558478)**	**Plot 3 (511798, 558466**
Sweet vernal grass	*Anthoxanthum odoratum*	30	10	20
Yorkshire fog	*Holcus lanatus*	15	20	10
Common bent	*Agrostis capillaris*	5	0	0
Soft rush	*Juncus effusus*	5	50	10
Creeping thistle	*Cirsium arvense*	5	2	0
Tormentil	*Potentilla erecta*	1	0	5
Heath Bedstraw	*Galium saxatile*	1	5	5
Purple moor grass	*Molinia caerulea*	2	10	20
Perennial rye grass	*Lolium perenne*	0	2	0
White clover	*Trifolium repens*	0	10	10
Non- vascular Plants				
Pleurozium schreberi		0	2	0
Fossitt (2000) Habitat Classification		**Degraded Dry Humid Acid Grassland/ Wet Grassland (GS3/GS4).**		

IVC Classification	• **GL4A-** *Agrostis capillaris – Trifolium repens* grassland (Common Bent – White Clover grassland) (82.2% Assigned) • **GL2D-** *Juncus effusus – Rumex acetosa* grassland (Soft Rush – Common Sorrel grassland) (69.2% Assigned) • **GL2B-** *Juncus effusus – Holcus lanatus* grassland (Soft Rush – Yorkshire-fog grassland) (49.7% Transitional)

Plate 3-4 Degraded Dry Humid Acid Grassland/ Wet Grassland (GS3/GS4) in the vicinity of T03/ hardstand.

3.1.5 Turbine T04 and Associated Infrastructure

Turbine T04 and associated infrastructure (hardstand and access roads) are located are located in the north of the Proposed Wind Farm site, on an area of degraded Wet Heath (HH3). The area of wet heath has links to the Annex I habitat '*Northern Atlantic Wet Heath with Erica tetralix (4010).*

Extensive on-going sheep grazing was evident in the vicinity of T04 and as a result the wet heath habitat was degraded, and uniform in appearance, with little species diversity. This area was dominated by dense purple moor grass, with a low cover of dwarf shrubs and bryophytes. Cross leaved heath (*Erica tetralix*) and tormentil (*Potentilla erecta*) were recorded. The cover of dwarf shrubs was well below the 25% threshold defined for this habitat by Fossitt (2000). Perrin et al. (2014) states that "*dwarf shrub cover as dwarf shrubs may be scarce or absent in degraded examples of wet heath characterised by Trichophorum germanicum or Molinia caerulea".* Further, the negative indicator species, Yorkshire fog and common bent grass, were recorded in these areas of wet heath (Perrin et al 2014).
As such, the wet heath habitat in the vicinity of T04 is degraded due to intensive sheep grazing, resulting in a low cover of dwarf shrubs, and poor species diversity dominated by purple moor grass.

Table 3-5 Botanical Survey Results for Turbine T04 and hardstand

Turbine T04				
Management Regime: Agricultural Grazing				
Relevé Area: 2x2m				
Date of Survey: 17/07/2024				
Species		**% Cover**		
Vascular Plants	**Scientific Name**	**Plot 1 (510827, 558383)**	**Plot 2 (510726, 558382)**	**Plot 3 (510721, 558346)**
Gorse	*Ulex europaeus*	15	0	0
Yorkshire fog	*Holcus lanatus*	10	0	5
Crested dogs tail	*Cynosurus cristatus*	4	0	3
Purple moor grass	*Molinia caerulea*	20	82.5	80
Velvet bent grass	*Agrostis canina*	8	0	0
Tormentil	*Potentilla erecta*	1	3	2.5
Compact rush	*Juncus conglomeratus*	1	0	0
Jointed rush	*Juncus articulatus*	10	0	0.5
Ling heather	*Calluna vulgaris*	0	15	0
Cross leaved heath	*Erica tetralix*	0	2	0
Red fescue	*Festuca rubra*	0	0	1.5
Non-vascular Plants				
Sphagnum tenellum		0	3	3

Polytrichum commune	2	5	0
Fossitt (2000) Habitat Classification	**Wet Heath (HH3)**		
IVC Classification	• **HE4E-***Molinia caerulea – Calluna vulgaris – Erica tetralix* heath (Purple Moor-grass – Heather – Cross-leaved Heath heath) (94% assigned) • **HE4D-***Molinia caerulea – Potentilla erecta – Erica tetralix* heath (Purple Moor-grass – Tormentil – Cross-leaved Heath heath) (98.7% assigned)		

3.1.5.1 Wet Heath Condition Assessment

An assessment of the wet heath habitat in the vicinity T04 was carried out as per the criteria in Irish Wildlife Manual 79 (Perrin et al. 2014). The assessment was carried out per the 2m x 2m relevé data as provided in the above section as well as within the local vicinity (50m to 100m radius as per IWM79). The criteria and assessments are provided below.

Table 3-6 Wet Heath Assessment criteria as per IWM79 for T04

Criteria	Scale of Assessment	Pass/ Fail		
		Plot 1 (510827, 558383).	**Plot 2 (510726, 558382).**	**Plot 3 (510721, 558346).**
Vegetation Composition				
Erica tetralix present	20m radius	Pass	Pass	Pass
Cover of positive indicator species ≥ 50% (Appendix VI)	Relevé	Fail	Fail	Fail
Total cover of *Cladonia* species, Sphagnum species, *Racomitrium lanuginosum* and *pleurocarpous* mosses ≥ 10%	Relevé	Fail	Pass	Pass
Cover of ericoid species and *Empetrum nigrum* ≥ 15%	Relevé	Fail	Pass	Fail
Cover of dwarf shrub species < 75%	Relevé	Pass	Fail	Pass
Cover of the following negative indicator species: *Agrostis capillaris, Holcus lanatus, Phragmites australis, Ranunculus repens* collectively < 1%	Relevé	Fail	Fail	Fail
Cover of non-native species < 1%	Relevé	Pass	Pass	Pass
Cover of non-native species < 1%	Local vicinity	Pass	Pass	Pass

Cover of scattered native trees and scrub < 20%	Local vicinity	Pass	Pass	Pass
Cover of *Pteridium aquilinum* < 10%	Local vicinity	Pass	Pass	Pass
Cover of *Juncus effusus* < 10%	Local vicinity	Fail	Pass	Pass
Vegetation Structure				
Crushed, broken and/or pulled up Sphagnum species < 10% of Sphagnum cover	Relevé	Pass	Pass	Pass
Last complete growing season's shoots of ericoids, *Empetrum nigrum and Myrica gale* showing signs of browsing collectively < 33% (Assess a minimum of 10 shoots distributed across the plot)	Relevé	Fail	Pass	Pass
No signs of burning into the moss, liverwort or lichen layer, or exposure of peat surface due to burning	Local vicinity	Pass	Pass	Pass
No signs of burning inside boundaries of sensitive areas†	Local vicinity	pass	Pass	Pass
Physical Structure				
Cover of disturbed bare ground < 10%	Relevé	Pass	Pass	Pass
Cover of disturbed bare ground < 10%	Local vicinity	Fail	Fail	Fail
Area showing signs of drainage resulting from heavy trampling or tracking or ditches < 10%	Local vicinity	Fail	Fail	Fail

Plate 3-5 Proposed location for T04 and hardstand within degraded Wet Heath (HH3) on a steep slope.

3.1.6 Access Road to T04

The proposed access road to T04 is located in the north of the Proposed Wind Farm site on sloping ground. The access road runs predominantly through degraded Wet Heath (HH3) and Dry Humid Acid Grassland/ Wet Grassland (GS3/GS4). The access road to T04 crosses an unmapped watercourse, classified as an Upland/Eroding River (FW1). The area is intensively grazed by sheep.

Table 3-7 Botanical Survey Results for the T04 access road

Turbine T04 Access Road			
Management Regime: Agricultural Grazing			
Releve Area: 2x2m			
Date of Survey: 17/07/2024			
Species		**% Cover**	
Vascular Plants	**Scientific Name**	**Plot 1 (510639, 558082).**	**Plot 2 (510549, 557866).**
Purple moor grass	*Molinia caerulea*	80	40
Ling heather	*Calluna vulgaris*	5	5
Soft rush	*Juncus effusus*	5	70
Jointed rush	*Juncus articulatus*	5	5
Creeping bent	*Agrostis stolonifera*	8	5

Yorkshire fog	*Holcus lanatus*	10	10
Marsh bedstraw	*Galium palustre*	5	6
Gorse	*Ulex europaeus*	3	5
Non-vascular Plants			
Polytrichum commune		10	5
Sphagnum rubellum		8	3
Sphagnum tenellum		8	0
Hylocomium splendens		5	0
Fossitt (2000) Habitat Classification		Mosaic of Dry Humid Acid Grassland/ Wet Grassland (GS3/ GS4)/ HH3 Wet heath	
IVC Classification		• **HE4D**- *Molinia caerulea – Potentilla erecta – Erica tetralix* heath (Purple Moor-grass – Tormentil – Cross-leaved Heath heath) (59.1% assigned) • **GL2D**- *Juncus effusus – Rumex acetosa* grassland (Soft Rush – Common Sorrel grassland) (94.4% assigned)	

Plate 3-6 A mosaic of degraded Wet Heath (HH3) and degraded Dry Humid Acid Grassland/ Wet Grassland (GS3/ GS4) along the access road to T04.

*Plate 3-7 Unmapped **Eroding Upland River (FW1**) along the access road to T04.*

3.1.7 Turbine T05 and Associated Infrastructure

Turbine T05 and associated hard stand and access road are located in the north of the Proposed Wind Farm site, on an area of degraded Dry Humid Acid Grassland/ Wet Grassland (GS3/GS4) on sloping grounds. The area is degraded as a result of on-going intensive sheep grazing, creating a short, uniform sward with little species diversity.

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

Table 3-8 Botanical Survey Results for Turbine T05 and hardstand

Turbine T05				
Management Regime: Agricultural Grazing				
Releve Area: 2x2m				
Date of Survey: 17/07/2024				
Species		% Cover		
Vascular Plants	Scientific Name	Plot 1 (511025, 558124).	Plot 2 (511168, 558283).	Plot 3 (511122, 558271).

Common bent grass	*Agrostis capillaris*	7	0	5
Yorkshire fog	*Holcus lanatus*	2	9	0
Heath woodrush	*Luzula multiflora*	0.5	0.5	0
Carnation sedge	*Carex panicea*	8	0	0
Soft rush	*Juncus effusus*	40	5	10
Sweet vernal grass	*Anthoxanthum odoratum*	10	0.5	0
Common cotton grass	*Eriophorum angustifolium*	0	1	0
Star sedge	*Carex echinata*	0	2	0
Compact rush	*Juncus conglomeratus*	0	20	0
Purple moor grass	*Molinia caerulea*	0	0	30
Heath bedstraw	*Galium saxatile*	0	0	2
Tormentil	*Potentilla erecta*	0	0	2
Billberry	*Vaccinium myrtillus*	0	0	0.5
Non-vascular Plants				
Aulacomnium palustre		4	20	0
Rhytidiadelphus loreus		20	10	10
Fossitt (2000) Habitat Classification		Degraded Dry Humid Acid Grassland (GS3)/ Wet Grassland (GS4).		
IVC Classification		**GL2D-** *Juncus effusus – Rumex acetosa* grassland (Soft Rush – Common Sorrel grassland) (84.9% assigned, 19.8% transitional)		

Plate 3-8 Degraded Dry Humid Acid Grassland/ Wet Grassland (GS3/ GS4) at T05/ hardstand.

3.1.8 Turbine T06 and Associated Infrastructure

Turbine T06 and associated infrastructure (hard stand and access roads) are located in the north of the Proposed Wind Farm site, in an area of recently planted Conifer Plantation (WD4), located on steep sloping ground. The ground vegetation is comprised of typical heath species, such as purple moor grass, tormentil and ling heather. An area of degraded Dry Humid Acid Grassland/ Wet Grassland (GS3/ GS4) is present to the north of T06.

Table 3-9 Botanical Survey Results for Turbine T06 and hardstand

Turbine T06		
Management Regime: Conifer Plantation		
Releve Area: 10x10m		
Date of Survey: 17/07/2024, 1/07/2025		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (511541, 557955)**
Field Layer		
Sitka spruce	*Picea sitchensis*	50
Alder	*Alnus glutinosa*	20
Gorse	*Ulex europaeus*	10

Ling heather	*Calluna vulgaris*	10
Cross leaved heath	*Erica tetralix*	5
Purple moor grass	*Molinia caerulea*	40
Tormentil	*Potentilla erecta*	5
Deer grass	*Trichophorum cespitosum*	5
Ground Layer		
Sphagnum tenellum		5
Sphagnum cuspidatum		5
Fossitt (2000) Habitat Classification		**Conifer Plantation (WD4)**

Plate 3-9 T06 and hardstand located within an area of recently planted ***Conifer Plantation (WD4).***

3.1.9 Access Road linking T06 to T05

The proposed access road linking T06 to T05 is located in the north of the Proposed Wind Farm site, in an area of recently planted Conifer Plantation (WD4), located on steep sloping ground. The ground vegetation is comprised of typical heath species, such as purple moor grass, tormentil and ling heather. The access road then runs through an area of degraded Dry Humid Acid Grassland/ Wet Grassland (GS3/GS4) as described in Section 2.3.7 above.

Table 3-10 Botanical Survey Results for access road linking T05 to T06

Proposed Access Road to T06		
Management Regime: Conifer Plantation		
Releve Area: 10x10m		
Date of Survey: 17/07/2024, 1/07/2025		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (510991, 557892).**
Field Layer		
Sitka spruce	*Picea sitchensis*	*80*
Alder	*Alnus glutinosa*	*2*
Gorse	*Ulex europaeus*	30
Purple moor grass	*Molinia caerulea*	30
Yorkshire fog	*Holcus lanatus*	10
Ling heather	*Calluna vulgaris*	*10*
Soft rush	*Juncus effusus*	*5*
Tormentil	*Potentilla erecta*	*8*
Ground Layer		
Polytrichum commune		10
Fossitt (2000) Habitat Classification		**Conifer Plantation (WD4)**

*Plate 3-10 Area of proposed access road to T06 located on an area of recently planted **Conifer Plantation (WD4)***

3.1.10 Turbine T07 and Associated Infrastructure

Turbine T07 and associated infrastructure (hard stand and access roads) as well as associated peat and spoil management area, are located in the east of a mature Conifer Plantation (WD4), in the south of the Proposed Wind Farm site. This plantation is located on sloping ground underlain by peat soils. The plantation is dominated by dense, dead Sitka Spruce. The ground layer in the vicinity of T07 was dominated by carpets of Bryophytes, and sphagnum and was wet underfoot. The access road to T07 is located on drier, sloping ground, dominated by needles.

Table 3-11 Botanical Survey Results for Turbine T07 and hardstand

Turbine T07		
Management Regime: Conifer Plantation		
Releve Area: 10x10m		
Date of Survey: 18/07/2024		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot (ITM 510312, 555772)**
Canopy Layer		
Sitka Spruce	*Picea sitchensis*	90
Field Layer		

Bilberry	*Vaccinium myrtillus*	1
Ground Layer		
Sphagnum cuspidatum		5
Sphagnum fallax		4
Pleurozium schreberi		40
Thuidium tamariscinum		30
Pine needles		20
Fossitt (2000) Habitat Classification	**Conifer Plantation (WD4)**	

Plate 3-11 Turbine T07 and hardstand located within a wet section of dense, conifer plantation (WD4).

3.1.11 Turbine T08 and Associated Infrastructure

Turbine T08 and associated infrastructure (hard stand and access roads), as well as associated peat and spoil management area, are located in the south of a large mature Conifer Plantation (WD4), in the south of the Proposed Wind Farm site. This plantation is located on sloping ground underlain by peat soils. The plantation was dominated by dense, dead Sitka Spruce. The ground layer in the vicinity of T08 was dominated by bryophytes and sphagnum and needles and was dry underfoot. The access road to T08 was located on drier, sloping ground, dominated by needles.

Table 3-12 Botanical Survey Results for Turbine T08 and hardstand.

Turbine T08		
Management Regime: Conifer Plantation		
Releve Area: 10x10m		
Date of Survey: 18/07/2024		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 509848, 555251)**
Canopy Layer		
Sitka Spruce	*Picea sitchensis*	90
Ground Layer		
Sphagnum fallax		5
Pleurozium schreberi		70
Thuidium tamariscinum		20
Polytrichum commune		10
Pine needles		5
Fossitt (2000) Habitat Classification	**Conifer Plantation (WD4)**	

Plate 3-12 Carpets of moss/sphagnum within Conifer Plantation (WD4) in the vicinity of T08/hardstand

Plate 3-13 Mature Conifer Plantation (WD4) with a dry underfoot in the vicinity of T08/hardstand.

3.1.12 Turbine T09 and Associated Infrastructure

Turbine T09 and associated infrastructure (hardstand and access roads), as well as associated peat and spoil management area, are located near the centre of a large mature Conifer Plantation (WD4), in the south of the Proposed Wind Farm site. This plantation is located on sloping ground underlain by peat soils. The plantation was dominated by dense, dead Sitka Spruce. The ground layer in the vicinity of T09 was dominated by bryophytes and sphagnum and was slightly wet underfoot.

Table 3-13 Botanical Survey Results for Turbine T09 and hardstand.

Turbine T09		
Management Regime: Conifer Plantation		
Releve Area: 10x10m		
Date of Survey: 18/07/2024		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 509318, 555352)**
Canopy Layer		
Sitka Spruce	*Picea sitchensis*	90
Field Layer		
Male Fern	*Dryopteris filix-mas*	0.1
Bilberry	*Vaccinium myrtillus*	0.1
Purple Moor Grass	*Molinia caerulea*	5
Ground Layer		
Pleurozium schreberi		30
Sphagnum fimbriatum		50
Hypnum jutlandicum		40
Pine needles		5
Fossitt (2000) Habitat Classification	**Conifer Plantation (WD4)**	

Plate 3-14 Habitat within the vicinity of T09 within Conifer Plantation (WD4).

3.1.13 Turbine T10 and Associated Infrastructure

Turbine T10 and associated infrastructure (hardstand and access roads), as well as associated peat and spoil management areas, are located in the southwest of a large mature Conifer Plantation (WD4), in the south of the Proposed Wind Farm site. This plantation is located on sloping ground underlain by peat soils. The plantation was dominated by dense, dead Sitka Spruce. The ground layer in the vicinity of T10 was dominated by bryophytes and needles and was dry underfoot.

Table 3-14 Botanical Survey Results for Turbine T10 and hardstand.

Turbine T10		
Management Regime: Conifer Plantation		
Releve Area: 10x10m		
Date of Survey: 18/07/2024		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 508864, 555284)**
Canopy Layer		
Sitka Spruce	*Picea sitchensis*	90
Ground Layer		
Thuidium tamariscinum		15
Rhytidiadelphus loreus		15

Hypnum jutlandicum		10
Pine needles		60
Fossitt (2000) Habitat Classification	**Conifer Plantation (WD4)**	

Plate 3-15 Conifer Plantation (WD4) wherein T10 is proposed.

3.1.14 Turbine T11 and Associated Infrastructure

Turbine T11 and associated infrastructure (hard stand and access roads) are located in the southwest of a mature Conifer Plantation (WD4), in the south of the Proposed Wind Farm site. This plantation is located on sloping ground underlain by peat soils. The plantation was dominated by dense, dead Sitka Spruce. The ground layer in the vicinity of T11 was dominated by bryophytes, sphagnum and needles, and was dry underfoot .

Table 3-15 Botanical Survey Results for Turbine T11 and hardstand.

Turbine T11		
Management Regime: Conifer Plantation		
Releve Area: 10x10m		
Date of Survey: 18/07/2024		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot (ITM 508413, 555377)**
Canopy Layer		

Sitka Spruce	*Picea sitchensis*	90
Field Layer		
Hard fern	*Blechnum spicant*	0.1
Ground Layer		
Sphagnum tenellum		5
Polytrichum commune		8
Pleurozium schreberi		10
Thuidium tamariscinum		20
Pine needles		47
Fossitt (2000) Habitat Classification	**Conifer Plantation (WD4)**	

Plate 3-16 Dense, mature Conifer Plantation (WD4) where T11 and hardstand are located.

3.1.15 Turbine T12 and Associated Infrastructure

Turbine T12 and associated infrastructure (hard stand and access roads) is located in the southwest of the Proposed Wind Farm site, predominantly on improved/ reclaimed agricultural lands classified as Improved Agricultural Grassland (GA1). Dominant species recorded within the improved agricultural field include Perennial Rye Grass (*Lolium perenne*), Sweet vernal grass (*Anthoxanthum odoratum*), Common bent (*Agrostis capillaris*), and Yorkshire fog (*Holcus lanatus*). This grassland is intensively managed via grazing/ mowing, creating a short, uniform sward. The ground conditions are dry. An area of degraded Upland Blanket Bog (PB2) was recorded to the south/ southeast of T12 that has not been reclaimed for agricultural purposes/ grazing. This area has been avoided by T12 infrastructure.

Table 3-16 Botanical Survey Results for T12 and hardstand.

Turbine T12		
Management Regime: Grazing/ agriculture		
Releve Area: 2x2m		
Date of Survey: 18/07/2024		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 ITM 508094, 555652)**
Perennial rye grass	*Lolium perenne*	30
Sweet vernal	*Anthoxanthum odoratum*	20
Common bent	*Agrostis capillaris*	5
Yorkshire fog	*Holcus lanatus*	30
White clover	*Trifolium repens*	5
Creeping buttercup	*Ranunculus repens*	5
Mouse ear chickweed	*Cerastium fontanum*	3
Cocksfoot	*Dactylis glomerata*	5
Jointed rush	*Juncus articulatus*	3
Dandelion	*Taraxacum officinale agg.*	5
Non-vascular Plants		
Pleurozium schreberi		5
Fossitt (2000) Habitat Classification		**Improved Agricultural Grassland (GA1)**
IVC Classification		• **GL2C**- *Holcus lanatus – Lolium perenne* grassland (Yorkshire-fog – Perennial Rye-grass grassland) (50.1% assigned)

Plate 3-17 Turbine T12 and hardstand located within an area of Improved Agricultural Grassland (GA1).

3.1.16 Proposed Access Road from T11 to T12

The proposed road from T11 to T12 runs through Conifer Plantation (WD4) dominated by Sitka Spruce (*Picea sitchensis*), Purple Moor Grass (*Molinia caerulea*), and Heath plait moss (*Hypnum jutlandicum*). The road crosses existing Drainage Ditches (FW4) with stagnant water and heavily vegetated with Soft Rush (*Juncus effusus*), Purple Moor Grass (*Molinia caerulea*), Water forget-me-not (*Myosotis scorpioides*), and Bramble (*Rubus fruticosus* agg.). The road continues through Wet Grassland (GS4).

Table 3-17 Botanical Survey Results for the access linking T11-T12

Access Road Linking T11-T12		
Management Regime: Conifer Plantation/ Wet grassland		
Releve Area: 2x2m		
Date of Survey: 18/07/2024		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 508100, 555394).**
Common bent grass	*Agrostis capillaris*	5
Yorkshire fog	*Holcus lanatus*	10
Soft rush	*Juncus effusus*	80

Sweet vernal grass	*Anthoxanthum odoratum*	2
White clover	*Trifolium repens*	5
Jointed rush	*Juncus articulatus*	8
Creeping buttercup	*Ranunculus repens*	10
Mouse ear chickweed	*Cerastium fontanum*	5
Cocksfoot	*Dactylis glomerata*	8
Non-vascular Plants		
Rhytidiadelphus loreus		5
Pleurozium schreberi		5
Fossitt (2000) Habitat Classification		**Wet Grassland (GS4).**
IVC Classification		**GL2D-** *Juncus effusus – Rumex acetosa* grassland (Soft Rush – Common Sorrel grassland) (53.1% assigned)

Plate 3-18 Section of the proposed road to T11 through Conifer Plantation (WD4).

Plate 3-19 Wet Grassland (GS4) along proposed road.

3.1.17 Turbine T13 and Associated Infrastructure

Turbine T13 and hard stand are located in the southwest of the Proposed Wind Farm site, predominantly on an area of reclaimed agricultural grassland, classified as Improved Agricultural Grassland (GA1) located on peat soils, with a dry underfoot. The grassland is intensively managed via grazing/ mowing, creating a short, uniform sward. The ground in the vicinity of T13/ hardstand is uneven and sloping, with large mounds of exposed bedrock/ boulders.

The southern portion of the hardstand and proposed access road are located partially within areas of fragmented Dry Siliceous Heath (HH1) in the south of the Proposed Wind Farm site which occur between areas of reclaimed, intensively managed improved agricultural grassland (GA1). The fragmented areas of dry siliceous heath are dominated by western gorse, bilberry, bracken, ling heather, bell heather, St Patrick's cabbage (*Saxifraga spathularis*), and *Polytrichum commune*, and a large proportion of exposed rock/ boulders. This area of dry heath has been fragmented due to intensive land reclamation in the surrounding area, and intensive grassland management. As a result, the cover of dry siliceous heath to the south of T13 is non-continuous and degraded as a result.

Table 3-18 Botanical Survey Results for Turbine T13 and hardstand.

Turbine T13	
Management Regime: Grazing/ agriculture	
Releve Area: 2x2m	
Date of Survey: 18/07/2024, 14/05/2025	
Species	**% Cover**

Vascular Plants	Scientific Name	Plot 1 (ITM 507796, 555868)
Soft rush	*Juncus effusus*	5
Yorkshire fog	*Holcus lanatus*	50
Common bent grass	*Agrostis capillaris*	15
Sweet vernal grass	*Anthoxanthum odoratum*	30
White clover	*Trifolium repens*	40
Creeping buttercup	*Ranunculus repens*	10
Perennial rye grass	*Lolium perenne*	40
Tormentil	*Potentilla erecta*	5
Non-vascular Plants		
Rhytidiadelphus squarrosus		8
Pleurozium schreberi		10
Fossitt (2000) Habitat Classification		**Improved Agricultural Grassland (GA1)**
IVC Classification		**GL4A-** *Agrostis capillaris – Trifolium repens* grassland (Common Bent – White Clover grassland) (92.3% assigned)

Table 3-19 Botanical Survey Results for Turbine T13 and hardstand & Access Road

Turbine T13		
Management Regime: Grazing/ agriculture		
Releve Area: 2x2m		
Date of Survey: 18/07/2024, 14/05/2025		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 507796, 555814)**
Western gorse	*Ulex gallii*	50
Ling heather	*Calluna vulgaris*	50
Bilberry	*Vaccinium myrtillus*	25
Purple moor grass	*Molinia caerulea*	5
Soft rush	*Juncus effusus*	2
Bracken	*Pteridium aquilinum*	20

Heath bedstraw	*Galium saxatile*	5
St Patrick's cabbage	*Saxifraga spathularis*	3
Bramble	*Rubus fruticosus agg.*	4
Non-vascular Plants		
Polytrichum commune		10
Hylocomium splendens		5
Sphagnum rubellum		3
Fossitt (2000) Habitat Classification		**Dry Siliceous Heath (HH1)**
IVC Classification		**HE3A** *Calluna vulgaris – Hylocomium splendens* heath (Heather – Glittering Wood-moss heath) (44.7% transitional)

3.1.17.1 Dry Heath Condition Assessment

Table 3-20 Dry Heath Assessment criteria as per IWM79 for T13 Plot 1 (ITM coordinates: 507796, 555814)

Criteria	Scale of Assessment	Pass/ Fail
Vegetation Composition		
Number of bryophyte or non-crustose lichen species present, excluding *Campylopus spp.* and *Polytrichum spp.* ≥ 3	Relevé	Pass
Number of positive indicator species present ≥ 2 (Appendix VI)	Relevé	Pass
DH5 (Calcareous heaths): cover of positive indicator species 50-75% Siliceous heaths: cover of positive indicator species ≥ 50%	Relevé	Pass
Proportion of dwarf shrub cover composed of *Myrica gale, Salix repens, Ulex gallii* collectively < 50%	Relevé	Fail
Cover of the following weedy negative indicator species: *Cirsium arvense, C. vulgare, Ranunculus repens, large Rumex species (except R. acetosa), Senecio jacobea, Urtica dioica* collectively < 1%	Relevé	Pass
Cover of non-native species < 1%	Relevé	Pass

Cover of non-native species < 1%	Local vicinity	Pass
Cover of scattered native trees and scrub < 20%	Local vicinity	Pass
Cover of Pteridium aquilinum < 10%	Local vicinity	Fail
Cover of Juncus effusus < 10%	Local vicinity	Pass
Vegetation Structure		
Senescent proportion of Calluna vulgaris cover < 50%	Relevé	Pass
Last complete growing season's shoots of ericoids and *Empetrum nigrum* showing signs of browsing collectively < 33%	Relevé	Pass
No signs of burning inside boundaries of sensitive areas‡	Local vicinity	Pass
Outside boundaries of sensitive areas, all growth phases of Calluna vulgaris should occur throughout, with ≥ 10% of cover in mature phase††	Local vicinity	Fail
Physical Structure		
Cover of disturbed bare ground < 10%	Relevé	Fail
Cover of disturbed bare ground < 10%	Local vicinity	Fail

Plate 3-20 Improved Agricultural Grassland (GA1) in the vicinity of T13 and hardstand.

Plate 3-21 Fragmented Dry Siliceous Heath (HH1) to the south of T13/ hardstand.

3.1.18 Access road from T12 to T13

The proposed access road linking T12 and T13 runs predominantly through Wet Grassland (GS4), with smaller patches of Scrub (WS1) dominated by gorse and bramble, on undulating, sloping ground in the west of the Proposed Wind Farm site. The access road from T12 to T13 crosses an unmapped watercourse classified as an Eroding/ Upland River (FW1). Further, the access road runs through an area of fragmented Dry Siliceous heath (HH1) as described in Section 2.3.17 above.

Table 3-21 Botanical Survey Results for the access road linking T12 to T13

Access Road Linking T12 to-T13		
Management Regime: Wet grassland		
Releve Area: 2x2m		
Date of Survey: 18/07/2024, 14/05/2025		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot (ITM 507883, 555803).**
Common bent grass	*Agrostis capillaris*	5
Yorkshire fog	*Holcus lanatus*	20
Soft rush	*Juncus effusus*	80
Sweet vernal grass	*Anthoxanthum odoratum*	10
White clover	*Trifolium repens*	5
Jointed rush	*Juncus articulatus*	8
Ling heather	*Calluna vulgaris*	10
gorse	*Ulex europaeus*	2
Non-vascular Plants		
Rhytidiadelphus loreus		6
Pleurozium schreberi		4
Fossitt (2000) Habitat Classification		**Wet Grassland (GS4).**
IVC Classification		**GL2D-** *Juncus effusus – Rumex acetosa* grassland (Soft Rush – Common Sorrel grassland) (63.3% assigned)

Plate 3-22 Access Road linking T12 to T13, located on undulating Wet Grassland (GS4)/ Scrub (WS1) in the west of the Proposed Wind Farm southern turbine cluster.

Plate 3-23 Unmapped Eroding/ Upland River (FW1) along the access road linking T12 to T13.

3.1.19 Turbine T14 and Associated Infrastrucure

Turbine T14 and associated infrastructure are located in the southwest of the Proposed Wind Farm site, on an area of degraded Wet Heath (HH3). This habitat has a low cover of dwarf shrubs (under 25%) and bryophytes. Cross leaved heath (*Erica tetralix*) and tormentil (*Potentilla erecta*) were recorded throughout this area. Overall, this area of wet heath contained poor species diversity and had a dry underfoot. Intensive, on-going sheep grazing was evident throughout this area of Wet Heath (HH3). Wet Heath (HH3) in the vicinity of T14 has links to the Annex I Habitat 'Northern Atlantic wet heaths with *Erica tetralix* (4010'.)

Table 3-22 Botanical Survey Results for T14 and hardstand

Turbine T14				
Management Regime: Grazing/ Peatland				
Releve Area: 2x2m				
Date of Survey: 18/07/2024, 28/08/2024, 01/07/2025				
Species		**% Cover**		
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 507333, 555280).**	**Plot 2 (ITM 507393, 555313).**	**Plot 3 (ITM 507455, 555340)**
Ling heather	*Calluna vulgaris*	1	0	10
Purple Moor Grass	*Molinia caerulea*	90	80	80
Common bent grass	*Agrostis capillaris*	5	2	0
Tormentil	*Potentilla erecta*	5	5	15
Heath bedstraw	*Galium saxatile*	2	5	0
Sweet vernal grass	*Anthoxanthum odoratum*	15	10	5
Gorse	*Ulex europaeus*	0	5	0
Cross leaved heath	*Erica tetralix*	0	0	10
Common spotted orchid	*Dactylorhiza fuchsii subsp. fuchsii*	0	0	0.1
Non-vascular Plants				
Sphagnum tenellum		0	0	5
Sphagnum cuspidatum		0	0	3
Sphagnum rubellum		0	0	3

Fossitt (2000) Habitat Classification	Wet Heath (HH3)
IVC Classification	• **HE4D**- *Molinia caerulea – Potentilla erecta – Erica tetralix* heath (Purple Moor-grass – Tormentil – Cross-leaved Heath heath) (99.5% assigned) • **HE4E**- *Molinia caerulea – Calluna vulgaris – Erica tetralix* heath (Purple Moor-grass – Heather – Cross-leaved Heath heath). (86.2% assigned)

3.1.19.1.1 Wet Heath Condition Assessment

An assessment of the wet heath habitat in the vicinity of the Proposed Wind Farm infrastructure, including T14 was carried out as per the criteria in Irish Wildlife Manual 79. The assessment was carried out per the 2m x 2m relevé data as provided in the above section as well as within the local vicinity (50m to 100m radius as per IWM79). The criteria and assessments are provided below.

Table 3-23 Wet Heath Assessment criteria as per IWM79 for T14

Criteria	Scale of Assessment	Pass/ Fail		
		Plot 1 (ITM 507333, 555280).	Plot 2 (ITM 507393, 555313).	Plot 3 (ITM 507455, 555340)
Vegetation Composition				
Erica tetralix present	20m radius	Fail	Fail	Pass
Cover of positive indicator species ≥ 50% (Appendix VI)	Relevé	Fail	Fail	Fail
Total cover of *Cladonia* species, Sphagnum species, *Racomitrium lanuginosum* and *pleurocarpous* mosses ≥ 10%	Relevé	Fail	Fail	Fail
Cover of ericoid species and *Empetrum nigrum* ≥ 15%	Relevé	Fail	Fail	Fail
Cover of dwarf shrub species < 75%	Relevé	Pass	Pass	Pass
Cover of the following negative indicator species: *Agrostis capillaris*, *Holcus lanatus*, *Phragmites australis*, *Ranunculus repens* collectively < 1%	Relevé	Fail	Fail	Fail
Cover of non-native species < 1%	Relevé	Pass	Pass	Pass
Cover of non-native species < 1%	Local vicinity	Pass	Pass	Pass
Cover of scattered native trees and scrub < 20%	Local vicinity	Pass	Pass	Pass
Cover of *Pteridium aquilinum* < 10%	Local vicinity	Pass	Pass	Pass

Cover of *Juncus effusus* < 10%	Local vicinity	Pass	Pass	Pass
Vegetation Structure				
Crushed, broken and/or pulled up Sphagnum species < 10% of Sphagnum cover	Relevé	Pass	Pass	Pass
Last complete growing season's shoots of ericoids, *Empetrum nigrum and Myrica gale* showing signs of browsing collectively < 33% (Assess a minimum of 10 shoots distributed across the plot)	Relevé	Pass	Pass	Pass
No signs of burning into the moss, liverwort or lichen layer, or exposure of peat surface due to burning	Local vicinity	Pass	Pass	Pass
No signs of burning inside boundaries of sensitive areas†	Local vicinity	Pass	Pass	Pass
Physical Structure				
Cover of disturbed bare ground < 10%	Relevé	Fail	Fail	Fail
Cover of disturbed bare ground < 10%	Local vicinity	Fail	Fail	Fail
Area showing signs of drainage resulting from heavy trampling or tracking or ditches < 10%	Local vicinity	Fail	Fail	Fail

Plate 3-24 Degraded Wet Heath (HH3) at Turbine T14/ hardstand.

3.1.20 Access Road from T14

The proposed access road to Turbine T14 runs through an area of Upland Blanket Bog (PB2), Wet Heath (HH3), and Dense Bracken (HD1) habitats. There is varying topography in this area, with higher grounds comprised of Wet Heath (HH3)/ Dense Bracken (HD1)/ Scrub (WS1) habitat, transitioning into Upland Blanket Bog (PB2) on flatter grounds. Evidence of previous turbary activity, drainage and grazing was recorded in the wider area and as such this area of peatland is degraded in places. Ground conditions vary, with wetter patches of peatland with high Sphagnum content recorded in the centre of the access road.

Table 3-24 Botanical Survey Results for the proposed access road to T14

T14 Access Road				
Management Regime: Peatland				
Releve Area: 2x2m				
Date of Survey: 18/07/2024, 28/08/2024, 01/07/2025				
Species		**% Cover**		
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 507550, 555390).**	**Plot 2 (ITM 507710, 555481)**	**Plot 3 (ITM 507803, 555539)**
Ling heather	*Calluna vulgaris*	2	20	5
Purple moor grass	*Molinia caerulea*	70	80	90

Cross leaved heath	*Erica tetralix*	15	40	30
Soft rush	*Juncus effusus*	1	0	0
Deer grass	*Trichophorum cespitosum*	50	30	0
Hares tail cottongrass	*Eriophorum vaginatum*	2	2	0
Bog rosemary	*Andromeda polifolia*	1	0	0
Bog Myrtle	*Myrica gale*	0	0	30
Non-vascular Plants				
Sphagnum rubellum		8	8	5
Sphagnum tenellum		10	10	5
Sphagnum cuspidatum		0	2	0
Fossitt (2000) Habitat Classification		**Upland Blanket Bog (PB2)**		
ICV Classification/ Erica		• **BG2F-** *Trichophorum cespitosum/germanicum – Eriophorum angustifolium* peatland (Deergrass – Common Cottongrass peatland) (48.5% transitional) • **HE4E-** *Molinia caerulea – Calluna vulgaris – Erica tetralix* heath (Purple Moor-grass – Heather – Cross-leaved Heath heath) (74% assigned) • **HE4F-** *Molinia caerulea – Myrica gale* flush (Purple Moor-grass – Bog-myrtle flush) (96.8% assigned)		

3.1.20.1 Upland Blanket Bog Condition Assessment

Table 3-25 Upland Blanket Bog Assessment criteria as per IWM79 for T14 Access Road

Criteria	Scale of Assessment	Pass/ Fail		
		Plot 1(ITM 507550, 555390).	**Plot 2 (ITM 507710, 555481)**	**Plot 3 (ITM 507803, 555539)**
Vegetation Composition				
Number of positive indicator species present ≥ 7	Relevé	Pass	Pass	Fail
Cover of bryophyte or lichen species, excluding Sphagnum fallax ≥ 10%	Relevé	Pass	Pass	Pass
Cover of each of the following species: *Calluna vulgaris, Eleocharis multicaulis, Eriophorum vaginatum, Molinia caerulea,*	Relevé	Pass	Fail	Fail

Schoenus nigricans, Trichophorum germanicum individually < 75%				
Cover of the following negative indicator species: *Agrostis capillaris, Holcus lanatus, Phragmites australis, Pteridium aquilinum, Ranunculus repens* collectively < 1%	Relevé	Pass	Pass	Pass
Cover of non-native species < 1%	Relevé	Pass	Pass	Pass
Cover of non-native species < 1%	Local vicinity	Pass	Pass	Pass
Cover of scattered native trees and scrub < 10%	Local vicinity	Pass	Pass	Pass
Vegetation Structure				
Crushed, broken and/or pulled up Sphagnum species < 10% of Sphagnum cover	Relevé	Pass	Pass	Pass
Last complete growing season's shoots of *ericoids, Empetrum nigrum and Myrica gale* showing signs of browsing collectively < 33% (Assess a minimum of 10 shoots distributed across the plot)	Relevé	Pass	Pass	Pass
No signs of burning into the moss, liverwort or lichen layer or exposure of peat surface due to burning	Local vicinity	Pass	Pass	Pass
No signs of burning inside boundaries of sensitive areas†	Local vicinity	Pass	Pass	Pass
Physical Structure				
Cover of disturbed bare ground < 10%	Relevé	Pass	Pass	Pass
Cover of disturbed bare ground < 10%	Local vicinity	Fail	Fail	Fail
Area showing signs of drainage resulting from heavy trampling or tracking or ditches or peat cutting < 10%	Local vicinity	Fail	Fail	Fail
Cover of erosion gullies and eroded areas within the greater bog mosaic‡ < 5%	Local vicinity	Fail	Fail	Fail

Plate 3-25 Ground conditions of upland blanket bog (PB2) along the proposed access road to T14

Plate 3-26 Upland Blanket Bog (PB2), Dense Bracken (HD1) and Wet Heath (HH3) recorded along the proposed access road to T14.

Plate 3-27 Turbary Activity in the vicinity of T14.

3.1.21 Proposed 110kv Onsite Substation

The proposed 110kV onsite substation is located near the centre of the Proposed Wind Farm site, within the southern Conifer Plantation (WD4). This plantation is located on peat soils, dominated by dense, dead Sitka Spruce *(Picea sitchensis)*. The proposed 110kV onsite substation is located in an area of conifer with a slightly wet underfoot, with the ground cover dominated in places by carpets of Bryophytes. Drainage ditches (FW4) were recorded throughout this conifer plantation, with varying water and flow levels.

Table 3-26 Botanical Survey Results for the proposed 100kV onsite substation.

Proposed Substation		
Management Regime: Conifer Plantation		
Releve Area: 10x10m		
Date of Survey: 18/07/2024		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 510149, 556303)**
Canopy Layer		
Sitka Spruce	*Picea sitchensis*	90
Field Layer		

Male Fern	*Dryopteris filix-mas*	0.1
Bilberry	*Vaccinium myrtillus*	0.1
Ground Layer		
Pleurozium schreberi		10
Sphagnum fimbriatum		5
Hypnum jutlandicum		40
Rhytidiadelphus loreus		30
Pine needles		15
Fossitt (2000) Habitat Classification	**Conifer Plantation (WD4)**	

Plate 3-28 Proposed 110kV onsite substation located with Conifer Plantation (WD4), with a wet underfoot.

Plate 3-29 Drainage Ditch (FW4) within the vicinity of the proposed 110kV onsite substation.

3.1.22 Security Cabins

3.1.22.1 Security Cabin in Southern Turbine Cluster

The proposed security cabin in the south of the Proposed Wind Farm site is located adjacent to an existing forestry/ farm access road and the R585. The proposed security cabin is located on an area of Wet Grassland (GS4). The grassland had a wet underfoot and is located on slightly sloping ground. Species diversity was low, dominated by soft rush. A drainage ditch (FW4) was recorded adjacent to the access road, north of the proposed security cabin footprint.

Table 3-27 Botanical Survey Results for the proposed security cabin in the southern turbine cluster of the Proposed Wind Farm

Security Cabin in the southern turbine cluster of the Proposed Wind Farm		
Management Regime: Wet grassland		
Releve Area: 2x2m		
Date of Survey: 18/07/2024, 13/05/2025		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 510971, 556332)**
Common bent grass	*Agrostis capillaris*	5
Yorkshire fog	*Holcus lanatus*	20

Soft rush	*Juncus effusus*	80
Sweet vernal grass	*Anthoxanthum odoratum*	10
Non-vascular Plants		
Rhytidiadelphus loreus		10
Pleurozium schreberi		15
Polytrichum commune		5
Fossitt (2000) Habitat Classification		**Wet Grassland (GS4).**
IVC Classification		**GL2D-** *Juncus effusus – Rumex acetosa* grassland (Soft Rush – Common Sorrel grassland) (93.8% assigned)

Plate 3-30 Proposed security cabin in the southern turbine cluster of the Proposed Wind Farm site located on an area of Wet Grassland (GS4).

Plate 3-31 Drainage Ditch (FW4) located to the north of the proposed security cabin in the southern turbine cluster of the Proposed Wind Farm.

3.1.22.2 Security Cabin in the Northern Turbine Cluster/ Proposed New Access Road

The proposed security cabin in the north of the Proposed Wind Farm site/ proposed new access road is located on an area of intensively grazed Wet Grassland (GS4)/ Improved Agricultural Grassland (GA1). The area is extremely degraded as a result of on-going intensive grazing, creating a short, uniform sward with little species diversity.

Table 3-28 Botanical Survey Results for the proposed security cabin in the northern turbine cluster of the Proposed Wind Farm

Security Cabin in the north of the Proposed Wind Farm site/ proposed access road		
Management Regime: Grazing/ agriculture		
Releve Area: 2x2m		
Date of Survey: 17/07/2024,13/05/2025		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 509974, 557428).**
Perennial rye grass	*Lolium perenne*	5
Soft rush	*Juncus effusus*	20
Yorkshire fog	*Holcus lanatus*	30
White clover	*Trifolium repens*	10

Creeping buttercup	*Ranunculus repens*	5
Mouse ear chickweed	*Cerastium fontanum*	5
Dandelion	*Taraxacum officinale agg.*	5
Non-vascular Plants		
Pleurozium schreberi		10
Polytrichum commune		5
Fossitt (2000) Habitat Classification		**Wet Grassland (GS4)/ Improved Agricultural Grassland (GA1)**
IVC Classification		**GL2C-** *Holcus lanatus – Lolium perenne* grassland (Yorkshire-fog – Perennial Rye-grass grassland) (54.5% assigned)

Plate 3-32 Proposed security cabin/ proposed access road to the northern turbine cluster of the Proposed Wind Farm located on an area of Wet Grassland (GS4)/ Improved Agricultural Grassland (GA1).

3.1.23 Proposed Met Mast

The proposed met mast is located in the south of the Proposed Wind Farm site, within the southern Conifer Plantation (WD4). This plantation is located on peat soils, dominated by dense, dead Sitka Spruce *(Picea sitchensis)*. The proposed met mast is located on a steep slope, with dry ground conditions.

Table 3-29 Botanical Survey Results for the proposed met mast

Proposed met mast		
Management Regime: Conifer Plantation		
Releve Area: 10x10m		
Date of Survey: 25/02/2025		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 509083, 555207)**
Canopy Layer		
Sitka Spruce	*Picea sitchensis*	100
Field Layer		
Male Fern	*Dryopteris filix-mas*	0.1
Ground Layer		
Pleurozium schreberi		10
Hypnum jutlandicum		15
Rhytidiadelphus loreus		15
Pine needles		60
Fossitt (2000) Habitat Classification	**Conifer Plantation (WD4)**	

Plate 3-33 Proposed met mast located within the southern Conifer Plantation (WD4) on steep sloping ground.

3.1.24 Temporary Construction Compounds

3.1.24.1 Temporary Construction Compound in the South of the Proposed Wind Farm site

The proposed temporary construction compound in the southern turbine cluster of the Proposed Wind Farm, northeast of T10 and west of T09, is located partially within Conifer Plantation (WD4) and partially within an opening within the Conifer Plantation, dominated by purple moor grass, ling heather and western gorse, located on steeply sloping ground, with a dry underfoot.

Table 3-30 Botanical Survey Results for the temporary construction compound in the southern turbine cluster of the Proposed Wind Farm

Temporary Construction Compound in the southern turbine cluster of the Proposed Wind Farm		
Management Regime: Conifer plantation		
Releve Area: 10x10m		
Date of Survey: 18/07/2024		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 508870, 555307)**
Western gorse	*Ulex gallii*	50
Purple moor grass	*Molinia caerulea*	50
Tormentil	*Potentilla erecta*	10
Ling heather	*Calluna vulgaris*	10
Cross leaved heath	*Erica tetralix*	5
Ground Layer		
Sphagnum tenellum		10
Sphagnum subnitens		15
Fossitt (2000) Habitat Classification		**Conifer Plantation (WD4)**

Plate 3-34 Temporary construction compound in the southern turbine cluster of the Proposed Wind Farm partially within Conifer Plantation (WD4) and partially within an opening within the Conifer Plantation.

3.1.24.2 Temporary Construction Compound in the North of the Proposed Wind Farm

The proposed temporary construction compound in the northern turbine cluster of the Proposed Wind Farm is located partially on an area of degraded Wet Heath (HH3) and partially on a mosaic of Dry Humid Acid Grassland (GS3)/ Wet Grassland (GS4) on steeply sloping ground which has a wet underfoot.

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

Table 3-31 Botanical Survey Results for the proposed temporary construction compound in the northern turbine cluster of the Proposed Wind Farm.

Temporary construction compound in the northern turbine cluster of the Proposed Wind Farm		
Management Regime: Grazing		
Releve Area: 2x2m		
Date of Survey: 13/05/2025		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 510346, 557726)**
Ling heather	*Calluna vulgaris*	3
Purple Moor Grass	*Molinia caerulea*	50
Deer grass	*Trichophorum cespitosum*	7
Tormentil	*Potentilla erecta*	3
Soft rush	*Juncus effusus*	30
Cross Leaved Heath	*Erica tetralix*	30
Lesser spearwort	*Ranunculus flammula*	5
Heath milkwort	*Polygala serpyllifolia*	2
Non-vascular Plants		
Polytrichum commune		15
Sphagnum tenellum		3
Sphagnum palustre		5

Sphagnum rubellum	3
Fossitt (2000) Habitat Classification	**Degraded Wet Heath (HH3) and Dry Humid Acid Grassland (GS3)/ Wet Grassland (GS4)**
IVC Classification	• **HE4E-** *Molinia caerulea – Calluna vulgaris – Erica tetralix* heath (Purple Moor-grass – Heather – Cross-leaved Heath heath) (41.3% transitional)

Plate 3-35 Temporary construction compound in the northern turbine cluster of the Proposed Wind Farm located partially on an area of degraded Wet Heath (HH3) and partially on a mosaic of Dry Humid Acid Grassland (GS3)/ Wet Grassland (GS4)

3.1.25 Proposed Borrow Pits

3.1.25.1 Borrow Pit south of T01, T02 and north of T03 (BP1)

The proposed borrow pit to the south of T01 and T02, to the north of T03 (BP1) is located in the northern turbine cluster of the Proposed Wind Farm site, in an area of recently planted Conifer Plantation (WD4), located on steep sloping ground. The ground vegetation is comprised of typical heath species, such as purple moor grass, tormentil and ling heather, with young, recently planted sitka spruce saplings.

Table 3-328 Botanical Survey Results for BP1.

BP1		
Management Regime: Conifer plantation		
Releve Area: 10x10m		
Date of Survey: 17/07/2024, 13/05/2025.		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 511837, 558533)**
Field Layer		
Sitka Spruce saplings	*Picea sitchensis*	30
Grey willow	*Salix cinerea*	2
Alder	*Alnus glutinosa*	2
Ling Heather	*Calluna vulgaris*	10
Purple Moor Grass	*Molinia caerulea*	50
Common bent	*Agrostis capillaris*	25
Yorkshire fog	*Holcus lanatus*	20
Sweet Vernal Grass	*Anthoxanthum odoratum*	20
Cross Leaved Heath	*Erica tetralix*	2
Tormentil	*Potentilla erecta*	5
Bulbous rush	*Juncus bulbosus*	2
Deer Grass	*Trichophorum cespitosum*	3
Glaucous sedge	*Carex flacca*	2
Soft rush	*Juncus effusus*	1

Ground Layer		
Polytrichum commune	*Polytrichum commune*	10
Fossitt (2000) Habitat Classification		**Conifer Plantation (WD4)**

Plate 3-361 BP1 is located in the northern turbine cluster of the Proposed Wind Farm site, on an area of recently planted Conifer Plantation (WD4).

3.1.25.2 Borrow Pit southwest of T05 and west of T06 (BP2)

The proposed borrow pit southwest of T05 and west of T06 (BP2) is located on an area of degraded Dry Humid Acid Grassland (GS3)/ Wet Grassland (GS4), on sloping ground. The area is degraded as a result of on-going intensive sheep grazing, creating a short, uniform sward with little species diversity and a dry underfoot.

Table 3-339 Botanical Survey Results for BP2.

BP2		
Management Regime: Grazing		
Releve Area: 2x2m		
Date of Survey: 13/05/2025		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 511198, 558025)**
Soft rush	*Juncus effusus*	70
Common bent grass	*Agrostis capillaris*	10
Yorkshire fog	*Holcus lanatus*	20
Sweet vernal grass	*Anthoxanthum odoratum*	15
Tormentil	*Potentilla erecta*	5
Creeping buttercup	*Ranunculus repens*	5
Bulbous rush	*Juncus bulbosus*	2
Non-vascular Plants		
Polytrichum commune		5
Fossitt (2000) Habitat Classification		**Degraded Dry Humid Acid Grassland (GS3)/ Wet Grassland (GS4)**
IVC Classification		**GL2D-** *Juncus effusus – Rumex acetosa* grassland (Soft Rush – Common Sorrel grassland) (76.2 assigned)

Plate 3-372 The proposed borrow pit southwest of T05 and T06 is located on an area of degraded Dry Humid Acid Grassland (GS3)/ Wet Grassland (GS4).

3.1.25.3 Borrow Pit northwest of T07 and northeast of T08 (BP3)

The proposed borrow pit located to the northwest of T07 (BP3) is located on an area of recently planted Conifer Plantation (WD4) in the south of the Proposed Wind Farm. The area is dominated by Sitka spruce saplings and stumps.

Table 3-340 Botanical Survey Results for BP3

BP3		
Management Regime: Conifer plantation		
Releve Area: 10x10m		
Date of Survey: 18/07/2024		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 509972, 556022)**
Field Layer		
Sitka spruce	*Picea sitchensis*	40
Soft rush	*Juncus effusus*	5
Gorse	*Ulex europaeus*	10
Fox glove	*Digitalis purpurea*	7
Hard fern	*Blechnum spicant*	5
Purple moor grass	*Molinia caerulea*	25
Bracken	*Pteridium aquilinum*	5
Ling heather	*Calluna vulgaris*	10
Ground Layer		
Polytricium commune		5
Fossitt (2000) Habitat Classification		**Conifer Plantation (WD4)**

Plate 3-38 BP3 is located on an area of Conifer Plantation (WD4) in the southern turbine cluster of the Proposed Wind Farm.

3.1.25.4 Borrow Pit west of T10 and east of T11 (BP4)

The proposed borrow pit located to the west of T10, and to the east of T11 (BP4) is located within a Conifer Plantation (WD4) to the south of the Proposed Wind Farm. This plantation is located on peat soils, dominated by dense, dead Sitka Spruce. The area has a slightly wet underfoot.

Table 3-351 Botanical Survey Results for BP4.

BP4		
Management Regime: Conifer Plantation		
Releve Area: 10x10m		
Date of Survey: 18/07/2024		
Species		**% Cover**
Vascular Plants	**Scientific Name**	**Plot 1 (ITM 508771, 555203)**
Canopy Layer		
Sitka Spruce	*Picea sitchensis*	90
Ground Layer		
Thuidium tamariscinum		10
Rhytidiadelphus loreus		5

Hypnum jutlandicum	15
Polytrichum commune	10
Pine needles	60
Fossitt (2000) Habitat Classification	**Conifer Plantation (WD4)**

Plate 3-39 BP4 is located within Conifer Plantation (WD4) in the southern turbine cluster of the Proposed Wind Farm.

4. DISCUSSION

The Proposed Wind Farm site is dominated by conifer plantations (WD4) of varying stages and clear fell areas (WS5). A total of eight turbines and associated infrastructure, and the proposed 110kV onsite substation, proposed met mast, one temporary construction compound, and three proposed borrow pits are located within Conifer Plantation (WD4).

Peatlands are also a prominent feature, located both within and adjacent to the site boundary, and predominantly comprise upland blanket bog (PB2) and wet heath (HH3). Areas of dry siliceous heath (HH1) are present within the south of the site. Eroding/upland rivers (FW1) and their smaller unmapped tributaries are found throughout the site and are typical of headwaters.

The following three Annex I habitats were recorded within the Proposed Wind Farm site. All high-quality, intact heath and bog habitats within the Proposed Wind Farm site have been deliberately avoided in the design of the Proposed Project:

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

Infrastructure associated with T13, including the southern portion of Turbine T13 hardstand and proposed access road are located partially within areas of fragmented Dry Siliceous Heath (HH1) in the south of the Proposed Wind Farm site, which occur between areas of reclaimed, intensively managed improved agricultural grassland (GA1). As shown in Section 3.1.17.1, the dry heath habitat in these areas failed a number of criteria of the dry heath condition assessment as per Irish Wildlife Manual 79. These criteria relate to the presence of non-native species (non-native conifers) within the relevés and local vicinity, and evidence of burning, disturbed ground and/or drainage.

Turbine T04 and Turbine T14, and associated infrastructure (hardstand and access roads) are located on areas of degraded Wet Heath (HH3) not mapped under Article 17. Further, the proposed temporary construction compound in the north of the Proposed Wind Farm site is located partially on an area of degraded Wet Heath (HH3). As shown in Section 3.1.5.1 and Section 3.1.19.1.1, the wet heath habitat in these areas failed a number of criteria of the wet heath condition assessment as per Irish Wildlife Manual 79. These criteria relate to the absence of positive indicator species, presence of non-native species (non-native conifers) within the relevés and local vicinity, and evidence of burning, disturbed ground and/or drainage.

The Turbine T14 Access Road runs through an area of Upland Blanket Bog (PB2). As shown in Section 3.1.20.1, the upland blanket bog habitat in this area failed a number of criteria of the blanket bog condition assessment as per Irish Wildlife Manual 79. These criteria related to the presence of non-native species (non-native conifers) within the relevés and local vicinity, and evidence of drainage.

The avoidance principle has been applied as part of the Proposed Project and as such good quality Annex I habitats have been avoided. The loss of wet heath habitat in the vicinity of T04 and T14 will be offset through the Biodiversity Management and Enhancement Plan (BMEP). It is proposed to fell an area 5.4ha of young conifer plantation in the northern section of the Proposed Wind Farm site, in areas where Wet Heath (HH3) habitat previously existed. The restoration efforts will restore the formerly occurring wet heath habitat in this area. A Monitoring Plan to ensure success of the proposed measures is also provided in the BMEP.

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