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APPENDIX 6-1

**BOTANICAL
ASSESSMENT REPORT**

Mayo Planning Authority - Inspection Purposes Only!

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DOCUMENT DETAILS

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Environmental
Consultants

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Table of Contents

1.	INTRODUCTION.....	1
1.1	Survey Methods.....	1
1.2	Statement of Authority.....	2
2.	PROPOSED INFRASTRUCTURE	4
2.1	Turbine 1.....	4
2.2	Turbine 2	5
2.3	Turbine 3	6
2.4	Turbine 4	8
2.5	Turbine 5	11
2.6	Turbine 6	12
2.7	Turbine 7	14
2.8	Proposed Wind Farm Construction Compound	15
2.9	Proposed Onsite 110kV Substation	16
2.10	Proposed Substation Construction Compound	18
2.11	Proposed Borrow Pit	20
2.12	Proposed Met Mast.....	21
3.	HIGH BIODIVERSITY VALUE HABITATS	23
3.1	<i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410].....	23
3.2	Transition mires and quaking bogs [7140]	30
3.3	Species-rich Cutover Bog.....	32
3.4	Remnant Raised Bog	34
4.	BIBLIOGRAPHY	49

TABLE OF TABLES

<i>Table 1-1 Categorising types of plots using clustering analysis (after Wiser & de Cáceres, 2013).....</i>	<i>2</i>
<i>Table 2-1 Botanical Survey Results – Turbine 1.....</i>	<i>4</i>
<i>Table 2-2 Botanical Survey Results – Turbine 2.....</i>	<i>5</i>
<i>Table 2-3 Botanical Survey Results – Turbine 3.....</i>	<i>6</i>
<i>Table 2-4 Botanical Survey Results – Turbine 4, relevé 1.....</i>	<i>8</i>
<i>Table 2-5 Botanical Survey Results – Turbine 4, relevé 2.....</i>	<i>9</i>
<i>Table 2-6 Botanical Survey Results – Turbine 5.....</i>	<i>11</i>
<i>Table 2-7 Botanical Survey Results - Turbine 6.....</i>	<i>12</i>
<i>Table 2-8 Botanical Survey Results – Turbine 7.....</i>	<i>14</i>
<i>Table 2-9 Botanical Survey Results - Proposed Temporary Construction Compound.....</i>	<i>15</i>
<i>Table 2-10 Botanical Survey Results - Proposed Onsite 110kV Substation.....</i>	<i>16</i>
<i>Table 2-11 Botanical Survey Results - Proposed Substation Construction Compound.....</i>	<i>18</i>
<i>Table 2-12 Botanical Survey Results - Proposed Borrow Pit.....</i>	<i>20</i>
<i>Table 2-13 Botanical Survey Results - Proposed Met Mast.....</i>	<i>21</i>
<i>Table 3-1 Botanical Survey Results – Molinia meadow to the south and east of proposed Turbine 4.....</i>	<i>24</i>
<i>Table 3-2 Botanical Survey Results – Molinia meadow to the north of proposed Turbine 3.....</i>	<i>26</i>

Table 3-3 Botanical Survey Results – Molinia meadow to the southwest of the proposed onsite substation	27
Table 3-4 Botanical Survey Results – Molinia meadow to the southeast of proposed Turbine 6.....	29
Table 3-5 Botanical Survey Results - Transition mires and quaking bogs [7140] in the east of the Site	31
Table 3-6 Botanical Survey Results – Species-rich Cutover bog.....	32
Table 3-7 Botanical Survey Results – Marginal area of the raised bog to the north of proposed Turbine 1.....	34
Table 3-8 Botanical Survey Results – Raised bog 150m north of proposed Turbine 1.....	36
Table 3-9 Botanical Survey Results – Central area of the raised bog to the north of proposed Turbine 1	38
Table 3-10 Botanical Survey Results – Remnant Raised bog to the east of proposed Turbine 3.....	40
Table 3-11 Botanical Survey Results – Remnant raised bog within a complex of cutover bog, northernmost area	42
Table 3-12 Botanical Survey Results – Remnant raised bog within a complex of cutover bog, central area.....	44
Table 3-13 Botanical Survey Results – Remnant raised bog within a complex of cutover bog, southernmost area	46

TABLE OF PLATES

Plate 2-1 Area of Dry meadows and grassy verges (GS2) at the proposed Turbine 1, which forms a mosaic with Scrub (WS1) across the area.....	5
Plate 2-2 Improved agricultural grassland habitat present at the proposed location of Turbine 2.....	6
Plate 2-3 Cutover bog (PB4) habitat in the vicinity of proposed Turbine 3.....	8
Plate 2-4 View of Wet grassland (GS4) within the footprint of proposed Turbine 4.....	11
Plate 2-5 View of Wet grassland habitat within the footprint of proposed Turbine 5.....	12
Plate 2-6 View of Wet grassland habitat located at the proposed Turbine 6.	13
Plate 2-7 View of Improved agricultural grassland (GA1) with Wet grassland (GS4) sections at the proposed Turbine 7.....	15
Plate 2-8 View of Improved agricultural grassland (GA1) at the proposed wind farm construction compound location.....	16
Plate 2-9 Wet grassland (GS4) occurring in a mosaic with Scrub (WS1) and Recolonising bare ground (ED3) within the footprint of the proposed onsite 110kV substation.....	18
Plate 2-10 Area of improved Wet grassland (GS4) at the location of the proposed substation construction compound.....	20
Plate 2-11 View of Dry meadows and grassy verges mosaic with Scrub (GS2/WS1) located at the proposed borrow pit location.....	21
Plate 2-12 Dry meadows and grassy verges (GS2) at the proposed met mast location.....	23
Plate 3-1 Area of Molinia meadow to the south and east of proposed Turbine 4.....	25
Plate 3-2 Area of Molinia meadow to the north of proposed Turbine 3.....	27
Plate 3-3 Area of Molinia meadow to the southwest of the proposed onsite substation.....	29
Plate 3-4 Area of wet grassland to the southeast of proposed Turbine 6. This area was not found to conform to Annex I status in 2025.....	30
Plate 3-5 Area of Transition mire and quaking bog which has developed upon Cutover bog (PB4/PF3) in the east of the Site.....	32
Plate 3-6 Area of species-rich Cutover bog (PB4) to the northeast of proposed Turbine 3.....	34
Plate 3-7 The location of the relevé undertaken at the margins of the raised bog to the north of proposed Turbine 1, looking south towards the facebank.....	36
Plate 3-8 Location of the relevé undertaken approximately 150m north of proposed Turbine 1, within remnant raised bog.....	38

<i>Plate 3-9 The location of the relevé undertaken within the central area of the raised bog to the north of proposed Turbine 1, located outside the Site.....</i>	<i>40</i>
<i>Plate 3-10 Area of remnant raised bog surrounded by cutover bog, located to the east of proposed Turbine 3.</i>	<i>42</i>
<i>Plate 3-11 Northernmost relevé location within the raised bog complex with cutover bog.....</i>	<i>44</i>
<i>Plate 3-12 Central relevé location within the raised bog complex with cutover bog.....</i>	<i>46</i>
<i>Plate 3-13 Southernmost relevé location within the raised bog complex with cutover bog.....</i>	<i>48</i>

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1. INTRODUCTION

MKO were commissioned to undertake detailed botanical surveys to provide an evaluation and assessment of the habitats occurring within the Site of the proposed Cunlaghfadda Green Energy Project, Co Mayo. The detailed assessments focused on habitats occurring within or immediately adjacent to the footprint of the Proposed Project, as well as within species-rich habitats of high biodiversity value.

1.1 Survey Methods

Detailed botanical surveys were undertaken at a number of targeted locations within the Site on the 17th of June and 7th of July 2025 and the 14th of April 2026. Additional relevés from surveys undertaken in 2023 are also included where relevant and where the data provide supplemental habitat context. Targeted locations included representative habitats at each turbine base and other Proposed Project infrastructure including the proposed temporary construction compounds, proposed borrow pit, proposed met mast and proposed onsite substation. In addition, detailed botanical surveys were also undertaken across the Site in areas of species-rich habitats of high biodiversity value, and within habitats identified as having potential to conform to habitats listed under Annex I of the EU Habitats Directive. A total of 26 no. relevés were undertaken, results of which are provided in the following sections. The locations of all relevés are shown in Figure 1-1 below. The size of all relevés were 2m x 2m with the exception of species-rich cutover bog, which was 10m x 10m in extent (in accordance with Smith and Crowley, 2020), and relevés within remnant raised bog were 4m x 4m in extent (in accordance with Fernandez *et al.*, 2014).

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

The data from all relevés undertaken were analysed in accordance with the Irish Vegetation Classification (IVC) system. The IVC is a project which 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)¹ web application was used to analyse all relevés and to assign vegetation data to communities defined by the IVC. The quantitative vegetation cover data collected from relevés within the Site were uploaded to ERICA, checked for errors, analysed and the results were downloaded. ERICA covers grassland, woodland, duneland, saltmarsh, heath, bog, fen and mire, freshwater, saline water and rocky habitats, and weed communities (Perrin, 2025).

The ERICA 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 1-1 details the categorising types of plots utilising the clustering analysis (Perrin, 2025).

¹ Perrin, 2025, ERICA – Engine for Relevés to Irish Communities Assignment V6.4 User’s Manual [online]. Available at: https://biodiversityireland.shinyapps.io/vegetation-classification/w_9cd4889a/manual.pdf [Accessed 27/04/2026]

Table 1-1 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.

This categorising procedure was utilised to determine if the grassland, transition mire or species-rich bog plots within the Site had any affinity to Annex I habitats and whether further assessment was required. For those relevés undertaken within the Proposed Project footprint, the IVC classification data were used to provide more detail on the vegetation communities present within habitats proposed to be lost as part of the Proposed Project. These data were used to inform the design of the Proposed Project where relevant.

Where habitats were considered to have potential to conform to Annex I habitats, reference was made to the European Commission's *Interpretation manual of European Union habitats* (2013)² and the latest NPWS Article 17 Habitats Assessments (NPWS, 2025)³, as well as the habitat-specific assessment guidance outlined in Section 6.2.3.2 of Chapter 6 Biodiversity of the EIAR.

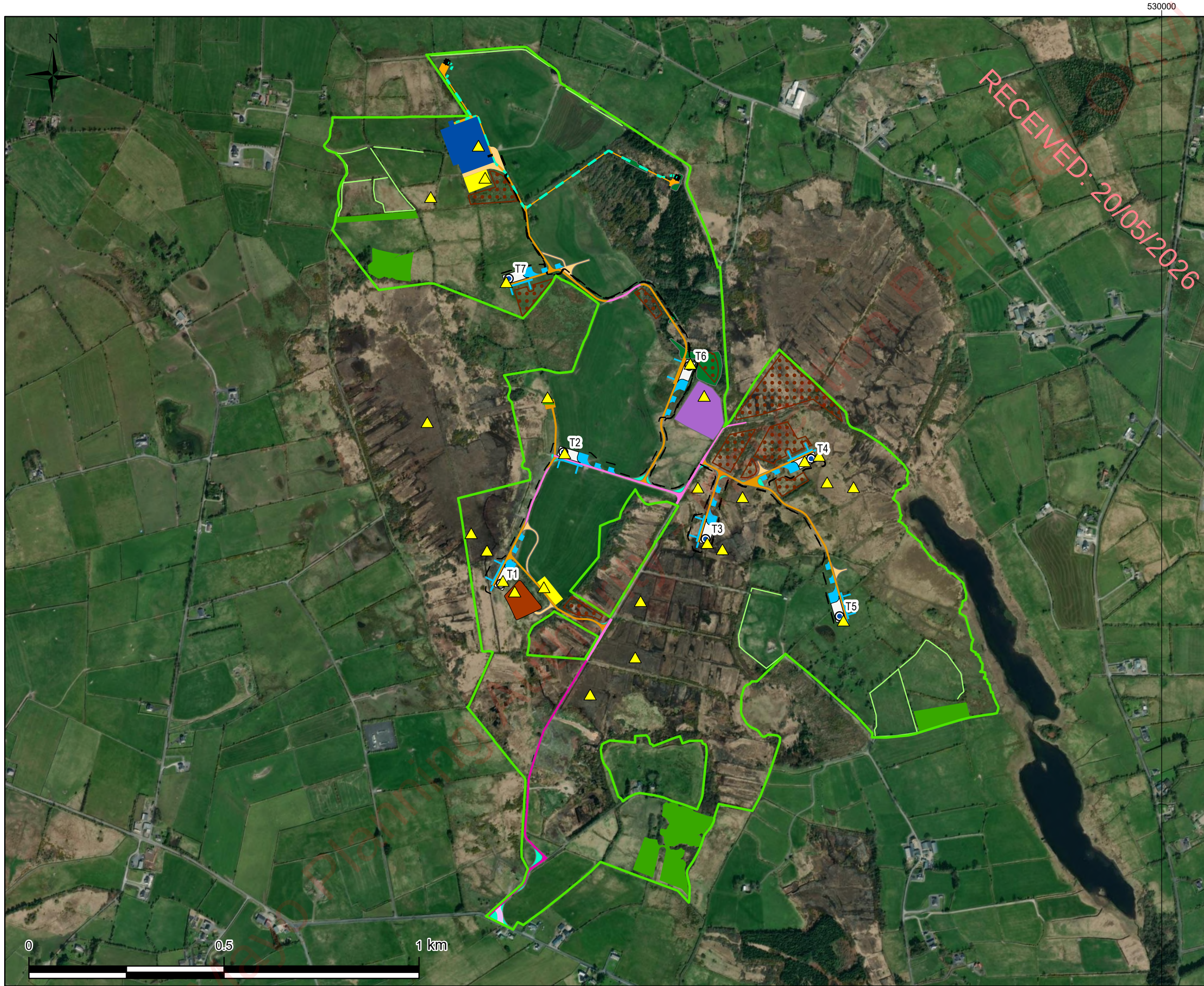
1.2

Statement of Authority

Botanical field assessments were conducted by Katy Beckett (B.A., M.Sc.), Rudraksh Gupta (B.Sc., M.Sc., ACIEEM), Kate O'Donnell (B.Sc., ACIEEM) and Sarah Mullen (B.Sc., M.Sc., Ph.D., ACIEEM) of MKO. This report has been prepared by Amy McDermott (B.Sc.) and Katy Beckett, and reviewed by Sarah Mullen. All ecologists have relevant academic qualifications and are competent in undertaking habitat and ecological assessments.

² European Commission (2013) *Interpretation manual of European Union habitats*. Eur 28. European Commission DG Environment.

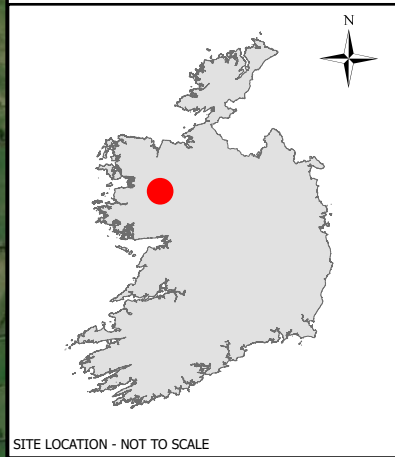
³ NPWS (2025). *The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitat Assessments*. Unpublished NPWS report. Edited by: Domhnall Finch, Aoife Delany, Fionnuala O'Neill and Deirdre Lynn.



Map Legend

- EIAR Site Boundary
- Relevé Locations
- Proposed Felling
- Proposed Construction Compound
- Proposed Wind Farm**
 - Proposed Turbines
 - Proposed Turbine Hardstands
 - Temporary Hardstand Areas
 - Proposed Borrow Pit
 - Peat and Spoil Management Areas
 - Proposed Internal Cables
 - Proposed Met Mast
- Proposed Grid Connection**
 - Proposed 110kV Substation
 - Proposed 100kV Grid Connection Cable Route
 - Proposed End Masts
- Proposed Habitat Enhancement**
 - Proposed Woodland Planting
 - Proposed Linear Planting and Enhancement
 - Proposed Marsh Fritillary Enhancement Areas
- Proposed Site Roads**
 - Proposed Upgrade to Existing Access Tracks
 - Proposed New Access Tracks
 - Proposed Upgrade to Public Road
 - Temporary Construction Tracks
 - Temporary Site Entrance
 - Temporary Widening
 - Passing Bay

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



SITE LOCATION - NOT TO SCALE

Drawing Title

Relevé Locations		
Project Title		
Proposed Cunlaghfadda Green Energy Project		
Project No.	Drawing No.	Scale
220825	1-1	1:9,000
Drawn By	Checked By	Date
MNR	KB	07/05/2026

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2.

PROPOSED INFRASTRUCTURE

2.1

Turbine 1

The proposed Turbine 1 is located in an area best described as Dry meadows and grassy verges and Scrub mosaic (GS2/WS1) which borders cutover bog habitats to the north and west (Plate 2-1). While the relevé taken at the location of Turbine 1 had a high cover of purple moor-grass (*Molinia caerulea*), it was dry in nature, underlain by non-peaty soils and distinctly different in species composition to surrounding cutover habitats. A 2mx2m relevé was taken in this area and is presented in Table 2-1 below.

Table 2-1 Botanical Survey Results – Turbine 1

Turbine 1	Grid reference: ITM X 528311, Y 777870	Date: 17/06/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Molinia caerulea</i>	Purple moor-grass	60
<i>Rubus fruticosus</i> agg.	Bramble	10
<i>Plantago lanceolata</i>	Ribwort plantain	10
<i>Potentilla erecta</i>	Tormentil	7
<i>Salix cinerea</i>	Grey willow	7
<i>Potentilla anserina</i>	Silverweed	5
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass	5
<i>Holcus lanatus</i>	Yorkshire fog	2
<i>Ranunculus repens</i>	Creeping buttercup	1
<i>Geranium robertianum</i>	Herb-Robert	0.5
<i>Taraxacum officinale</i> agg.	Dandelion	0.5
Non-Vascular Species		
<i>Polytrichum commune</i>	Common haircap	10
% Bare ground		0
Fossitt (2000) Habitat Classification		Dry meadows and grassy verges (GS2/WS1)
IVC Classification		HEAD – <i>Molinia caerulea</i> – <i>Potentilla erecta</i> – <i>Erica tetralix</i> heath

Affinity to Annex I habitat	No
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Plate 2-1 Area of Dry meadows and grassy verges (GS2) at the proposed Turbine 1, which forms a mosaic with Scrub (WS1) across the area

2.2

Turbine 2

Turbine 2 is located in an area of Improved agricultural grassland (GA1) which was highly dominated by perennial rye-grass (*Lolium perenne*) (Plate 2-2). A 2mx2m relevé was taken in this area and is presented in Table 2-2 below.

Table 2-2 Botanical Survey Results – Turbine 2

Turbine 2	Grid reference: ITM X 528470, 778197	Date: 17/06/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Lolium perenne</i>	Perennial rye grass	95
<i>Rumex obtusifolius</i>	Broad-leaved dock	5
<i>Ranunculus repens</i>	Creeping buttercup	1
<i>Trifolium repens</i>	White clover	1
<i>Poa annua</i>	Annual meadow-grass	0.5
% Bare ground		0
Fossitt (2000) Habitat Classification		Improved agricultural grassland (GA1)

IVC Classification	GL2C – <i>Holcus lanatus</i> – <i>Lolium perenne</i> grassland
Affinity to Annex I habitat	No



Plate 2-2 Improved agricultural grassland habitat present at the proposed location of Turbine 2

2.3 Turbine 3

This area was classified as Cutover bog (PB4) dominated by recolonising common cottongrass (*Eriophorum angustifolium*) (Plate 2-3). A 2mx2m relevé was taken in this area and is presented in Table 2-3 below.

Table 2-3 Botanical Survey Results – Turbine 3

Turbine 3	Grid reference: ITM X 528835, Y 777967	Date: 17/06/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Eriophorum angustifolium</i>	Common cottongrass	30
<i>Molina caerulea</i>	Purple moor-grass	30
<i>Myrica gale</i>	Bog-myrtle	20
<i>Succisa pratensis</i>	Devil's-bit scabious	3

<i>Carex panicea</i>	Carnation sedge	2
<i>Erica tetralix</i>	Cross-leaved heath	1
<i>Potentilla erecta</i>	Tormentil	1
<i>Calluna vulgaris</i>	Ling heather	0.5
<i>Carex pulicaris</i>	Flea sedge	0.5
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass	0.5
<i>Dactylorhiza maculata</i>	Heath spotted-orchid	0.5
<i>Juncus bulbosus</i>	Bulbous rush	0.5
<i>Pinguicula lusitanica</i>	Pale butterwort	0.5
<i>Carex demissa</i>	Common yellow sedge	0.5
Non-Vascular Species		
<i>Sphagnum spp.</i>	Sphagnum spp.	3.5
% Bare ground		5
% Standing water		3
Fossitt (2000) Habitat Classification		Cutover bog (PB4)
IVC Classification		HE4F – <i>Molinia caerulea</i> – <i>Myrica gale</i> flush
Affinity to Annex I habitat		No



Plate 2-3 Cutover bog (PB4) habitat in the vicinity of proposed Turbine 3.

2.4 Turbine 4

This area was classified predominantly as Wet grassland (GS4) with elements of heath-like vegetation also present in places, most notably heath rush (*Juncus squarrosus*) and ling heather (*Calluna vulgaris*) (Plate 2-4). However it lacked the positive indicator species cover typical of Annex I wet heath [4010]. A 2mx2m relevé was taken in this area in 2025 and is presented in Table 2-4 below, and the results of a 2mx2m relevé undertaken in 2023 are presented in Table 2-5 below.

Table 2-4 Botanical Survey Results – Turbine 4, relevé 1

Turbine 4, relevé 1	Grid reference: ITM X 529085, Y 778176	Date: 17/06/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Juncus squarrosus</i>	Heath rush	30
<i>Calluna vulgaris</i>	Ling heather	25
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass	15
<i>Juncus effusus</i>	Soft rush	5
<i>Potentilla erecta</i>	Tormentil	4
<i>Sussisa pratensis</i>	Devil's-bit scabious	2

<i>Carex echinata</i>	Star sedge	1
<i>Ranunculus acris</i>	Meadow buttercup	0.5
<i>Luzula multiflora</i>	Heath wood-rush	0.5
<i>Carex nigra</i>	Common sedge	0.5
<i>Carex binervis</i>	Green-ribbed sedge	0.5
<i>Dactylorhiza maculata</i>	Heath-spotted orchid	0.5
<i>Carex panicea</i>	Carnation sedge	0.5
<i>Holcus lanatus</i>	Yorkshire fog	0.5
<i>Pedicularis sylvatica</i>	Common lousewort	0.5
<i>Ranunculus acris</i>	Meadow buttercup	0.5
<i>Poa pratensis</i>	Smooth meadow-grass	0.5
<i>Galium saxatile</i>	Heath bedstraw	0.5
Non-Vascular Species		
<i>Calliergonella cuspidata</i>	Pointed sparmoss	20
<i>Rhytidiadelphus squarrosus</i>	Springy turf-moss	10
% Bare ground		0
Fossitt (2000) Habitat Classification		Wet grassland (GS4)
IVC Classification		GL4D - <i>Agrostis canina/vinealis</i> – <i>Rhytidiadelphus squarrosus</i> grassland
Affinity to Annex I habitat		No

Table 2-5 Botanical Survey Results – Turbine 4, relevé 2

Turbine 5	Grid reference: ITM X 529122, Y 778190	Date: 25/07/2023
Species	Common Name	% Cover
Vascular Plants		
<i>Anthoxanthum odoratum</i>	Sweet vernal grass	30
<i>Molinia caerulea</i>	Purple moor grass	20
<i>Juncus effusus</i>	Soft rush	10

<i>Potentilla erecta</i>	Tormentil	5
<i>Holcus lanatus</i>	Yorkshire fog	5
<i>Succisa pratensis</i>	Devil's-bit scabious	5
<i>Luzula multiflora</i>	Heath wood-rush	5
<i>Carex panicea</i>	Carnation sedge	5
<i>Agrostis capillaris</i>	Common bent grass	5
<i>Carex nigra</i>	Common sedge	5
<i>Pedicularis canadensis</i>	Common lousewort	3
<i>Vaccinium myrtillus</i>	Bilberry	2
<i>Galium saxatile</i>	Heath bedstraw	2
<i>Scorzonoides autumnalis</i>	Autumn hawkbit	2
Non-vascular Plants		
<i>Hylocomium splendens</i>	Glittering wood-moss	20
<i>Rhytidiadelphus squarrosus</i>	Springy turf-moss	20
<i>Climacium dendroides</i>	Tree-moss	15
% Bare ground		0
Fossitt (2000) Habitat Classification		Wet grassland (GS4)
IVC Classification		GL4D - <i>Agrostis canina/vinealis</i> – <i>Rhytidiadelphus squarrosus</i> grassland
Affinity to Annex I Habitat		No



Plate 2-4 View of Wet grassland (GS4) within the footprint of proposed Turbine 4

2.5 Turbine 5

Turbine 5 is located within an area of improved Wet grassland (GS4) and is dominated by Yorkshire fog (*Holcus lanatus*) (Plate 2-5). This is bordered to the north by an area of Tilled land (BC3). A 2mx2m relevé was taken in this area and is presented in Table 2-6 below.

Table 2-6 Botanical Survey Results – Turbine 5

Turbine 5	Grid reference: ITM X 529184, Y 777768	Date: 17/06/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Holcus lanatus</i>	Yorkshire fog	80
<i>Trifolium repens</i>	White clover	20
<i>Juncus effusus</i>	Soft rush	15
<i>Ranunculus repens</i>	Creeping buttercup	10
<i>Cynosurus cristatus</i>	Crested dog's-tail	10
<i>Poa trivialis</i>	Rough meadow grass	5
<i>Rumex acetosa</i>	Common sorrel	2

<i>Anthoxanthum odoratum</i>	Sweet vernal grass	1
<i>Carex disticha</i>	Brown sedge	0.5
<i>Lolium perenne</i>	Perennial rye grass	0.5
% Bare ground		0
Fossitt (2000) Habitat Classification		Wet grassland (GS4)
IVC Classification		GL2B – <i>Juncus effusus</i> - <i>Holcus lanatus</i> grassland
Affinity to Annex I Habitat		No



Plate 2-5 View of Wet grassland habitat within the footprint of proposed Turbine 5

2.6

Turbine 6

Turbine 6 is located within an area classified as a Wet grassland (GS4) and is dominated by soft rush (*Juncus effusus*) (Plate 2-6). A 2mx2m relevé was taken in this area and is presented in Table 2-7 below.

Table 2-7 Botanical Survey Results - Turbine 6

Turbine 6 Wet Grassland	Grid reference: ITM X 528792, Y 778426	Date: 17/06/2025
Species	Common Name	% Cover

Vascular Plants		
<i>Juncus effusus</i>	Soft rush	80
<i>Ranunculus repens</i>	Creeping buttercup	20
<i>Holcus lanatus</i>	Yorkshire fog	5
<i>Poa trivialis</i>	Rough meadow grass	2
<i>Rumex obtusifolius</i>	Broad-leaved dock	1
<i>Ranunculus flammula</i>	Lesser spearwort	1
% Bare ground		0
Fossitt (2000) Habitat Classification		Wet grassland (GS4)
IVC Classification		GL2D - <i>Juncus effusus</i> – <i>Rumex acetosa</i> grassland
Affinity to Annex I habitat		No



Plate 2-6 View of Wet grassland habitat located at the proposed Turbine 6.

2.7

Turbine 7

Turbine 7 is located within an area classified as an Improved agricultural grassland (GA1) with areas of Wet grassland (GS4) dominated by soft rush (*Juncus effusus*) also occurring in wetter depressions (Plate 2-7). A 2mx2m relev  was taken in this area and is presented in Table 2-8 below.

Table 2-8 Botanical Survey Results – Turbine 7

Turbine 7	Grid reference: ITM X 528320, Y 778635	Date: 17/07/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Holcus lanatus</i>	Yorkshire fog	50
<i>Trifolium repens</i>	White clover	35
<i>Juncus effusus</i>	Soft-rush	30
<i>Agrostis stolonifera</i>	Creeping bent	25
<i>Lolium perenne</i>	Perennial rye grass	20
<i>Poa trivialis</i>	Rough meadow-grass	10
<i>Ranunculus repens</i>	Creeping buttercup	5
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass	5
<i>Rumex acetosa</i>	Common Sorrel	2
% Bare ground		0
Fossitt (2000) Habitat Classification		Improved agricultural grassland (GA1) with sections of Wet grassland (GS4)
IVC Classification		GL2C - <i>Holcus lanatus</i> – <i>Lolium perenne</i> grassland
Affinity to Annex I habitat		No



Plate 2-7 View of Improved agricultural grassland (GA1) with Wet grassland (GS4) sections at the proposed Turbine 7

2.8 Proposed Wind Farm Construction Compound

The proposed wind farm construction compound is located within an area classified as an Improved agricultural grassland (GA1) and is highly dominated by perennial rye grass (*Lolium perenne*) (Plate 2-8). A 2mx2m relevé was taken in this area and is presented in Table 2-9 below.

Table 2-9 Botanical Survey Results - Proposed Temporary Construction Compound

Wind Farm Construction Compound	Grid reference: ITM X 528416, Y 777853	Date: 17/06/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Lolium perenne</i>	Perennial rye grass	80
<i>Rumex obtusifolius</i>	Broad-leaved Dock	15
<i>Trifolium repens</i>	White clover	0.5
<i>Ranunculus repens</i>	Creeping buttercup	0.5
% Bare ground		0
Fossitt (2000) Habitat Classification		Improved agricultural grassland (GA1)

IVC Classification	GL2C <i>Holcus lanatus</i> – <i>Lolium perenne</i> grassland
Affinity to Annex I habitat	No



Plate 2-8 View of Improved agricultural grassland (GA1) at the proposed wind farm construction compound location.

2.9 Proposed Onsite 110kV Substation

The proposed onsite 110kV substation is located within an area of improved Wet grassland (GS4), and Improved agricultural grassland (GA1), with some Scrub (WS1) and Recolonising bare ground (ED3) also present (Plate 2-9). A 2mx2m relevé was taken in the area of wet grassland and is presented in Table 2-10 below.

Table 2-10 Botanical Survey Results - Proposed Onsite 110kV Substation

Turbine 6 Wet Grassland	Grid reference: ITM X 528249, Y 778985	Date: 17/06/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Holcus lanatus</i>	Yorkshire fog	60
<i>Trifolium repens</i>	White clover	20
<i>Lolium perenne</i>	Perennial rye grass	20
<i>Juncus effusus</i>	Soft rush	15

<i>Cirsium arvense</i>	Creeping thistle	10
<i>Rubus fruticosus</i> agg.	Brambles	10
<i>Agrostis stolonifera</i>	Creeping bent	10
<i>Dactylis glomerata</i>	Cock's-foot	7
<i>Alopecurus pratensis</i>	Meadow foxtail	5
<i>Plantago lanceolata</i>	Ribwort plantain	5
<i>Poa trivialis</i>	Rough meadow grass	5
<i>Trifolium pratense</i>	Red clover	4
<i>Ranunculus acris</i>	Meadow buttercup	2
<i>Centaurea nigra</i>	Common knapweed	2
<i>Achillea millefolium</i>	Yarrow	1
<i>Taraxacum officinale</i> agg.	Dandelion	1
Non-Vascular Species		
<i>Brachythecium rutabulum</i>	Rough-stalked feathermoss	20
<i>Rhytidiadelphus squarrosus</i>	Springy turf-moss	20
% Bare ground		n/a
Fossitt (2000) Habitat Classification		Wet grassland (GS4), Scrub (WS1)
IVC Classification		GL2C - <i>Holcus lanatus</i> – <i>Lolium perenne</i> grassland
Affinity to Annex I habitat		No



Plate 2-9 Wet grassland (GS4) occurring in a mosaic with Scrub (WS1) and Recolonising bare ground (ED3) within the footprint of the proposed onsite 110kV substation.

2.10 Proposed Substation Construction Compound

The proposed substation construction compound is located within an area classified as Wet grassland (GS4) dominated by soft rush (*Juncus effusus*) (Plate 2-10). A 2mx2m relevé was taken in this area and is presented in Table 2-11 below.

Table 2-11 Botanical Survey Results - Proposed Substation Construction Compound

Turbine 6 Wet Grassland	Grid reference: ITM X 528416, Y 777853	Date: 17/06/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Juncus effusus</i>	Soft rush	70
<i>Trifolium repens</i>	White clover	25
<i>Lolium perenne</i>	Perennial rye grass	20
<i>Cirsium palustre</i>	Marsh thistle	10
<i>Holcus lanatus</i>	Yorkshire fog	10
<i>Festuca rubra</i>	Red fescue	10
<i>Anthoxanthum odoratum</i>	Sweet vernal grass	8

<i>Poa trivialis</i>	Rough meadow grass	8
<i>Rumex acetosa</i>	Common sorrel	6
<i>Cynosurus cristatus</i>	Crested dog's-tail	6
<i>Ranunculus acris</i>	Meadow buttercup	5
<i>Plantago lanceolata</i>	Ribwort plantain	5
<i>Ranunculus repens</i>	Creeping buttercup	3
<i>Luzula campestris</i>	Field wood-rush	2
<i>Trifolium pratense</i>	Red clover	2
<i>Taraxacum officinale</i> agg.	Dandelion	1
<i>Hypochaeris radicata</i>	Cat's ear	0.5
<i>Achillea millefolium</i>	Yarrow	0.5
% Bare ground		n/a
Fossitt (2000) Habitat Classification		Wet grassland (GS4)
IVC Classification		GL3B - <i>Lolium perenne</i> – <i>Trifolium repens</i> grassland
Affinity to Annex I habitat		No



Plate 2-10 Area of improved Wet grassland (GS4) at the location of the proposed substation construction compound

2.11 Proposed Borrow Pit

The proposed borrow pit is located within an area classified as a mosaic of Dry meadows and grassy verges and Scrub (GS2/WS1) dominated by bramble (*Rubus fruticosus* agg.) and common haircap (*Polytrichum commune* v. *commune*) (Plate 2-11). A 2mx2m relevé was taken in this area and is presented in Table 2-12 below.

Table 2-12 Botanical Survey Results - Proposed Borrow Pit

Turbine 6 Wet Grassland	Grid reference: ITM X 528342, Y 777842	Date: 17/06/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Rubus fruticosus</i> agg.	Bramble	50
<i>Juncus effusus</i>	Soft rush	35
<i>Molinia caerulea</i>	Purple moor-grass	5
<i>Chameaneron angustifolium</i>	Rosebay willowherb	2
<i>Potentilla erecta</i>	Tormentil	1
<i>Prunus spinosa</i>	Blackthorn	1
<i>Anthoxanthum odoratum</i>	Sweet vernal grass	0.5

Non-Vascular Species		
<i>Polytrichum commune</i>	Common haircap	50
% Bare ground		1
Fossitt (2000) Habitat Classification		Dry meadows and grassy verges/ Scrub mosaic (GS2/WS1)
IVC Classification		SC1E - <i>Rubus fruticosus</i> agg. – <i>Holcus lanatus</i> wayside community
Affinity to Annex I habitat		No



Plate 2-11 View of Dry meadows and grassy verges mosaic with Scrub (GS2/WS1) located at the proposed borrow pit location.

2.12 Proposed Met Mast

The proposed met mast is located within an area classified as Dry meadows and grassy verges (GS2) dominated by silverweed (*Potentilla anserina*) and creeping buttercup (*Ranunculus repens*) (Plate 2-12). A 2mx2m relevé was taken in this area and is presented in Table 2-13 below.

Table 2-13 Botanical Survey Results - Proposed Met Mast

Turbine 6 Wet Grassland	Grid reference: ITM X 528426, Y 778340	Date: 17/06/2025
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Species	Common Name	% Cover
Vascular Plants		
<i>Ranunculus repens</i>	Creeping buttercup	20
<i>Potentilla anserina</i>	Silverweed	20
<i>Festuca rubra</i>	Red fescue	15
<i>Molinia caerulea</i>	Purple moor-grass	10
<i>Holcus lanatus</i>	Yorkshire fog	7
<i>Potentilla erecta</i>	Tormentil	5
<i>Filipendula ulmaria</i>	Meadowsweet	5
<i>Agrostis stolonifera</i>	Creeping bent	5
<i>Anthoxanthum odoratum</i>	Sweet vernal grass	5
<i>Juncus conglomeratus</i>	Compact rush	3
<i>Arrhenatherum elatius</i>	False oat-grass	1
% Bare ground		0
Fossitt (2000) Habitat Classification		Dry meadows and grassy verges (GS2)
IVC Classification		GL1D - <i>Molinia caerulea</i> – <i>Potentilla erecta</i> – <i>Agrostis stolonifera</i> grassland
Affinity to Annex I habitat		No



Plate 2-12 Dry meadows and grassy verges (GS2) at the proposed met mast location.

3. HIGH BIODIVERSITY VALUE HABITATS

The following sections outline the results of the detailed botanical studies undertaken within species-rich and high biodiversity habitat across the Site, including those with potential to conform to habitats protected under Annex I of the EU Habitats Directive.

3.1 ***Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410]**

Areas of species-rich wet grassland were identified in four locations across the Site, and relevés were undertaken in order to aid in the evaluation of their correspondence to the Annex I habitat *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410]. These relevés are presented in the following subsections.

South and East of Proposed Turbine 4

An area of species-rich wet grassland is present to the south and east of proposed Turbine 4 (Plate 3-1). A 2mx2m relevé was taken in this area and is presented in Table 3-1 below. Following analysis of the results of the botanical assessments, this area was found to conform to the Annex I habitat *Molinia* meadows.

Table 3-1 Botanical Survey Results – *Molinia* meadow to the south and east of proposed Turbine 4

<i>Molinia</i> meadow to the south and east of Turbine 4	Grid reference: ITM X 529142, Y 778122	Date: 17/06/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Molinia caerulea</i>	Purple moor grass	25
<i>Anthoxanthum odoratum</i>	Sweet vernal grass	20
<i>Succisa pratensis</i>	Devil's-bit scabious	20
<i>Briza media</i>	Quaking grass	10
<i>Eriophorum angustifolium</i>	Common cottongrass	10
<i>Juncus effusus</i>	Soft rush	5
<i>Calluna vulgaris</i>	Ling heather	5
<i>Potentilla erecta</i>	Tormentil	4
<i>Carex pulicaris</i>	Flea sedge	3
<i>Holcus lanatus</i>	Yorkshire fog	2
<i>Carex echinata</i>	Star sedge	2
<i>Festuca rubra</i>	Red fescue	1
<i>Cirsium palustre</i>	Marsh thistle	1
<i>Ranunculus acris</i>	Meadow buttercup	1
<i>Mentha aquatica</i>	Water mint	1
<i>Filipendula ulmaria</i>	Meadowsweet	1
<i>Carex panicea</i>	Carnation sedge	1
<i>Carex nigra</i>	Common sedge	1
<i>Plantago lanceolata</i>	Ribwort plantain	0.5
<i>Platanthera bifolia</i>	Lesser butterfly orchid	0.5
<i>Luzula multiflora</i>	Heath wood-rush	0.5
<i>Cynosurus cristatus</i>	Crested dog's-tail	0.5
<i>Hypericum perforatum</i>	Perforate St John's-wort	0.5
<i>Carex binervis</i>	Green-ribbed sedge	0.5
<i>Galium saxatile</i>	Heath bedstraw	0.5

<i>Cirsium dissectum</i>	Meadow thistle	0.5
<i>Galium palustre</i>	Marsh bedstraw	0.5
Non-Vascular Species		
<i>Calliergonella cuspidata</i>	Pointed sparmoss	2
<i>Thuidium tamariscinum</i>	Common tamarisk-moss	2
<i>Polytrichum sp.</i>	Haircap moss	0.5
% Bare ground		0
Fossitt (2000) Habitat Classification		Wet grassland (GS4)
IVC Classification		GL1C - <i>Molinia caerulea</i> – <i>Succisa pratensis</i> grassland
Affinity to Annex I habitat		Yes



Plate 3-1 Area of *Molinia* meadow to the south and east of proposed Turbine 4

North of Proposed Turbine 3

An area of species-rich wet grassland is present to the north of proposed Turbine 3, adjacent to the existing track through the Site (Plate 3-2). A 2mx2m relevé was taken in this area and is presented in Table 3-2 below. The positive indicator species water mint (*Mentha aquatica*) and meadowsweet

(*Filipendula ulmaria*) were also recorded within the vicinity but were not present within the relevé area. Following analysis of the results of the botanical assessments, this area was found to conform to the Annex I habitat *Molinia* meadows.

Table 3-2 Botanical Survey Results – *Molinia* meadow to the north of proposed Turbine 3

<i>Molinia</i> meadow to the north of proposed Turbine 3	Grid reference: ITM X 528811, Y 778109	Date: 07/07/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Molinia caerulea</i>	Purple moor grass	80
<i>Cirsium dissectum</i>	Meadow thistle	15
<i>Carex pulicaris</i>	Flea sedge	10
<i>Succisa pratensis</i>	Devil's-bit scabious	5
<i>Calluna vulgaris</i>	Ling heather	5
<i>Potentilla erecta</i>	Tormentil	3
<i>Centaurea nigra</i>	Common knapweed	3
<i>Agrostis stolonifera</i>	Creeping bent	3
<i>Anthoxanthum odoratum</i>	Sweet vernal grass	2
<i>Narthecium ossifragum</i>	Bog asphodel	2
<i>Dactylorhiza maculata</i>	Heath spotted orchid	2
<i>Equisetum palustre</i>	Marsh horsetail	1
<i>Juncus effusus</i>	Soft rush	1
<i>Carex panicea</i>	Carnation sedge	1
<i>Carex flacca</i>	Glaucous sedge	1
<i>Plantago lanceolata</i>	Ribwort plantain	1
% Bare ground		0
Fossitt (2000) Habitat Classification		Wet grassland (GS4)
IVC Classification		GL1D - <i>Molinia caerulea</i> – <i>Potentilla erecta</i> – <i>Agrostis stolonifera</i> grassland
Affinity to Annex I habitat		Yes



Plate 3-2 Area of *Molinia* meadow to the north of proposed Turbine 3.

Southwest of the Proposed Onsite 110kV Substation

An area of species-rich wet grassland is present to the southwest of the proposed onsite 110kV substation (Plate 3-3). A 2mx2m relevé was taken in this area and is presented in Table 3-3 below. Following analysis of the results of the botanical assessments, this area was found to conform to the Annex I habitat *Molinia* meadows.

Table 3-3 Botanical Survey Results – *Molinia* meadow to the southwest of the proposed onsite substation

<i>Molinia</i> meadow to the southwest of the proposed onsite substation	Grid reference: ITM X 528126, Y 778854	Date: 17/06/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Molinia caerulea</i>	Purple moor grass	50
<i>Cirsium dissectum</i>	Meadow thistle	30
<i>Anthoxanthum odoratum</i>	Sweet vernal grass	7
<i>Potentilla erecta</i>	Common tormentil	3
<i>Succisa pratensis</i>	Devil's-bit scabious	3
<i>Potentilla anglica</i>	Trailing tormentil	2
<i>Equisetum palustre</i>	Marsh horsetail	2

<i>Carex panicea</i>	Carnation sedge	2
<i>Luzula multiflora</i>	Heath wood-rush	2
<i>Juncus conglomeratus</i>	Compact rush	2
<i>Carex flacca</i>	Glaucous sedge	2
<i>Taraxacum officinale</i> agg.	Dandelion	1
<i>Filipendula ulmaria</i>	Meadowsweet	1
<i>Ranunculus acris</i>	Meadow buttercup	0.5
<i>Ranunculus flammula</i>	Lesser spearwort	1
<i>Carex hostiana</i>	Tawny sedge	1
<i>Carex echinata</i>	Star sedge	1
Non-Vascular Species		
<i>Pseudoscleropodium purum</i>	Neat feathermoss	20
% Bare ground		0
Fossitt (2000) Habitat Classification		Wet grassland (GS4)
IVC Classification		GL1D - <i>Molinia caerulea</i> – <i>Potentilla erecta</i> – <i>Agrostis stolonifera</i> grassland
Affinity to Annex I habitat		Yes



Plate 3-3 Area of *Molinia* meadow to the southwest of the proposed onsite substation.

Southeast of Proposed Turbine 6

An area of species-rich wet grassland is present to the southeast of proposed Turbine 6 (Plate 3-4). A 2mx2m relevé was taken in this area and is presented in Table 3-4 below. This area was originally surveyed in 2023 at which time it was found to conform to Annex I status, however during repeat surveys undertaken in 2025, this area of wet grassland was found to have deteriorated in quality and was characterised by a high cover of purple moor grass (*Molinia caerulea*) tussocks which had outcompeted other indicator species. Therefore, following analysis of the results of the botanical assessments, the habitat was no longer found to meet the criteria required to be considered Annex I *Molinia* meadow.

Table 3-4 Botanical Survey Results – *Molinia* meadow to the southeast of proposed Turbine 6

<i>Molinia</i> meadow to the southeast of proposed Turbine 6	Grid reference: ITM X 528827, Y 778344	Date: 17/06/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Molinia caerulea</i>	Purple moor grass	90
<i>Anthoxanthum odoratum</i>	Sweet vernal grass	5
<i>Juncus effusus</i>	Soft rush	5
<i>Holcus lanatus</i>	Yorkshire fog	3
<i>Plantago lanceolata</i>	Ribwort plantain	1

<i>Potentilla anserina</i>	Silverweed	0.5
<i>Carex panicea</i>	Carnation sedge	0.5
<i>Cirsium dissectum</i>	Meadow thistle	0.5
% Bare ground		0
Fossitt (2000) Habitat Classification		Wet grassland (GS4)
IVC Classification		HE4D – <i>Molinia caerulea</i> – <i>Potentilla erecta</i> – <i>Erica tetralix</i> heath
Affinity to Annex I habitat		No



Plate 3-4 Area of wet grassland to the southeast of proposed Turbine 6. This area was not found to conform to Annex I status in 2025.

3.2 Transition mires and quaking bogs [7140]

An area of Transition mire and quaking bog which has developed upon Cutover bog (PB4/PF3) was identified in the east of the Site (Plate 3-5). A 2mx2m relevé was taken in this area and is presented in Table 3-5 below. Following analysis of the results of the botanical assessments, this area was found to conform to the Annex I habitat Transition mires and quaking bogs.

Table 3-5 Botanical Survey Results - Transition mires and quaking bogs [7140] in the east of the Site

Transition mire and quaking bog	Grid reference: ITM X 529210, Y 778110	Date: 17/06/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Eriophorum angustifolium</i>	Common cottongrass	50
<i>Menyanthes trifoliata</i>	Bogbean	45
<i>Carex rostrata</i>	Bottle sedge	10
<i>Carex disticha</i>	Brown sedge	10
<i>Carex echinata</i>	Star sedge	1
<i>Mentha aquatica</i>	Water mint	1
<i>Potentilla palustris</i>	Creeping bent	1
<i>Lychnis flos-cuculi</i>	Ragged-robin	1
<i>Equisetum fluviatile</i>	Water horsetail	0.5
<i>Carex paniculata</i>	Greater tussock-sedge	0.5
<i>Holcus lanatus</i>	Yorkshire-fog	0.5
<i>Myrica gale</i>	Bog-myrtle	0.5
<i>Potentilla erecta</i>	Tormentil	0.5
<i>Succisa pratensis</i>	Devil's-bit scabious	0.5
Non-Vascular Species		
<i>Sphagnum capillifolium</i> ssp. <i>capillifolium</i>	Acute-leaved bogmoss	25
<i>Calliergonella cuspidata</i>	Pointed sparmoss	8
% Bare ground		0
Fossitt (2000) Habitat Classification	Dry meadows and grassy verges (GS2)	
IVC Classification	FE2A - <i>Equisetum fluviatile</i> – <i>Menyanthes trifoliata</i> mire	
Affinity to Annex I habitat	Yes	



Plate 3-5 Area of Transition mire and quaking bog which has developed upon Cutover bog (PB4/PF3) in the east of the Site.

3.3 Species-rich Cutover Bog

An area of species-rich Cutover bog (PB4) was recorded to the northeast of proposed Turbine 3 (Plate 3-6). A 10mx10m relevé was taken in this area and is presented in Table 3-6 below. Following analysis of the results of the botanical assessments, this area was not found to conform to any Annex I habitats.

Table 3-6 Botanical Survey Results – Species-rich Cutover bog

Species-rich Cutover bog	Grid reference: ITM X 528926, Y 778085	Date: 17/06/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Eriophorum angustifolium</i>	Common cottongrass	35
<i>Erica tetralix</i>	Cross-leaved heath	25
<i>Narthecium ossifragum</i>	Bog asphodel	20
<i>Calluna vulgaris</i>	Ling heather	20
<i>Drosera rotundifolia</i>	Round-leaved sundew	10
<i>Potentilla erecta</i>	Tormentil	6
<i>Trichophorum germanicum</i>	Deergrass	5

<i>Rhynchospora alba</i>	White beak-sedge	5
<i>Carex panicea</i>	Carnation sedge	2
<i>Succisa pratensis</i>	Devil's-bit scabious	3
<i>Polygala serpyllifolia</i>	Heath milkwort	3
<i>Pedicularis sylvatica</i>	Common lousewort	1
<i>Juncus bufonius</i>	Toad rush	0.5
Non-Vascular Species		
<i>Sphagnum papillosum</i>	Papillose bogmoss	20
<i>Cladonia portentosa</i>	Reindeer lichen	15
<i>Sphagnum rubellum</i>	Red bogmoss	15
<i>Sphagnum capillifolium</i>	Acute-leaved bogmoss	5
<i>Aulacomnium palustre</i>	Bog bead-moss	5
<i>Sphagnum subnitens</i>	Lustrous bogmoss	1
<i>Hypnum jutlandicum</i>	Heath plaitmoss	1
% Bare ground		0
Fossitt (2000) Habitat Classification		Cutover bog (PB4)
IVC Classification		BG2B – <i>Erica tetralix</i> – <i>Andromeda polifolia</i> bog
Affinity to Annex I habitat		No



Plate 3-6 Area of species-rich Cutover bog (PB4) to the northeast of proposed Turbine 3.

3.4 Remnant Raised Bog

A number of areas of remnant raised bog were identified within the Site. Relevés were undertaken in order to aid in the evaluation of their correspondence to the Annex I habitats Active raised bog [7110] and Degraded raised bogs still capable of regeneration [7120] These relevés are presented in the following subsections.

North of Proposed Turbine 1

An area of remnant raised bog was identified to the north of the proposed Turbine 1. This area is bordered by a facebank which is approximately 2m in height, and a deep drain. Three relevés were undertaken in this area at varying distances from the facebank and Turbine 1, and are presented in this section.

A 4mx4m relevé was taken approximately 10m from the facebank and 95m from the location of proposed Turbine 1, and is presented in Table 3-7 below. At this location ling heather (*Calluna vulgaris*) was found to be dominant, however *Sphagnum* cover was approximately 40% and ground conditions were soft to firm, with wetter areas supporting species such as *S. cuspidatum*, however no pools were present and small areas of eroding bare peat were present in the vicinity (Plate 3-7). This area was found to best align with the *Marginal* raised bog ecotope, per Fernandez *et al.* (2014).

Following analysis of the results of the botanical assessments, this area was found to have the potential to conform to the Annex I habitat Degraded raised bogs still capable of natural regeneration.

Table 3-7 Botanical Survey Results – Marginal area of the raised bog to the north of proposed Turbine 1

Marginal area of Raised bog to the north of proposed Turbine 1	Grid reference: ITM X 528271, Y 777948	Date: 14/04/2026
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Species	Common Name	% Cover
Vascular Plants		
<i>Calluna vulgaris</i>	Ling heather	70
<i>Myrica gale</i>	Bog myrtle	10
<i>Eriophorum vaginatum</i>	Hare's-tail cottongrass	10
<i>Erica tetralix</i>	Cross-leaved heath	5
<i>Trichophorum germanicum</i>	Deergrass	2
<i>Eriophorum angustifolium</i>	Common cottongrass	2
<i>Narthecium ossifragum</i>	Bog asphodel	1
<i>Andromeda polifolia</i>	Bog rosemary	0.25
Non-Vascular Species		
<i>Sphagnum rubellum</i>	Red bogmoss	20
<i>Hypnum jutlandicum</i>	Heath plaitmoss	8
<i>Sphagnum tenellum</i>	Soft bogmoss	7
<i>Sphagnum capillifolium</i>	Acute-leaved bogmoss	10
<i>Cladonia portentosa</i>	Reindeer lichen	5
<i>Sphagnum papillosum</i>	Papillose bogmoss	2
<i>Sphagnum cuspidatum</i>	Feathery bogmoss	1
<i>Odontoschisma sphagni</i>	Bog-moss flapwort	1
<i>Pleurozia purpurea</i>	Purple spoonwort	0.5
<i>Campylopus introflexus</i>	Heath star-moss	0.25
% Bare ground		0
Fossitt (2000) Habitat Classification		Raised bog (PB1)
IVC Classification		BG2B – <i>Erica tetralix</i> – <i>Andromeda polifolia</i> bog
Affinity to Annex I habitat		Yes



Plate 3-7 The location of the relevé undertaken at the margins of the raised bog to the north of proposed Turbine 1, looking south towards the facebank

A second relevé was undertaken within this area of remnant raised bog approximately 150m north of the location of the proposed Turbine 1, and is presented in Table 3-8 below. At this location, the vegetation was noted to have shifted to become less heather-dominated and *Sphagnum* cover was approximately 80%. Ground conditions were soft to firm, with some small pools measuring approximately 40cm recorded within the relevé area. Evidence of turbary activities and tire tracks were noted to the west of the relevé location. The habitat in this area was found to best align with the *Sub-central* raised bog ecotope, per Fernandez *et al.* (2014), however it also had characteristics of the *Sub-marginal* ecotope, and therefore was considered to represent an area transitioning between these communities.

Following analysis of the results of the botanical assessments, this area was found to have the potential to conform to the Annex I raised habitats, grading between Active raised bog and Degraded raised bogs still capable of natural regeneration.

Table 3-8 Botanical Survey Results – Raised bog 150m north of proposed Turbine 1

Remnant raised bog 150m north of proposed Turbine 1	Grid reference: ITM X 528230, Y 777992	Date: 14/04/2026
Species	Common Name	% Cover
Vascular Plants		
<i>Calluna vulgaris</i>	Ling heather	25
<i>Erica tetralix</i>	Cross-leaved heath	15
<i>Eriophorum vaginatum</i>	Hare's-tail cottongrass	8

<i>Trichophorum germanicum</i>	Deergrass	5
<i>Narthecium ossifragum</i>	Bog asphodel	5
<i>Myrica gale</i>	Bog myrtle	3
<i>Eriophorum angustifolium</i>	Common cottongrass	2
<i>Andromeda polifolia</i>	Bog rosemary	0.5
<i>Pedicularis sylvatica</i>	Common lousewort	0.5
Non-Vascular Species		
<i>Sphagnum rubellum</i>	Red bogmoss	40
<i>Sphagnum medium</i>	Claret bogmoss	20
<i>Sphagnum papillosum</i>	Papillose bogmoss	15
<i>Sphagnum tenellum</i>	Soft bogmoss	5
<i>Odontoschisma sphagni</i>	Bog-moss flapwort	4
<i>Hypnum jutlandicum</i>	Heath plaitmoss	3
<i>Cladonia portentosa</i>	Reindeer lichen	2
<i>Cladonia uncialis</i>	-	1
% Bare ground		0
Fossitt (2000) Habitat Classification		Raised bog (PB1)
IVC Classification		BG2B – <i>Erica tetralix</i> – <i>Andromeda polifolia</i> bog
Affinity to Annex I habitat		Yes



Plate 3-8 Location of the relevé undertaken approximately 150m north of proposed Turbine 1, within remnant raised bog.

A third relevé was undertaken within the centre of the area of raised bog to the north of proposed Turbine 1, approximately 450m from the turbine location and outside of the Site (Plate 3-9). The results of this relevé are presented in Table 3-9 below. At this location, the vegetation was also less heather-dominated and *Sphagnum* cover was over 40%. Ground conditions were soft and very wet underfoot. The habitat in this area was found to best align with the *Sub-marginal* raised bog ecotope, per Fernandez *et al.* (2014), indicating that this raised bog complex within and beyond the Site boundary comprises a varying mosaic of ecotopes and hydrological conditions.

Following analysis of the results of the botanical assessments, this area was found to have the potential to conform to the Annex I raised habitats, grading between Active raised bog and Degraded raised bogs still capable of natural regeneration.

Table 3-9 Botanical Survey Results – Central area of the raised bog to the north of proposed Turbine 1

Central area of the remnant raised bog to the north of proposed Turbine 1	Grid reference: ITM X 528118, Y 778277	Date: 07/07/2025
Species	Common Name	% Cover
Vascular Plants		
<i>Calluna vulgaris</i>	Ling heather	25
<i>Narthecium ossifragum</i>	Bog asphodel	15
<i>Eriophorum angustifolium</i>	Common cottongrass	15
<i>Trichophorum germanicum</i>	Deergrass	10

<i>Erica tetralix</i>	Cross-leaved heath	8
<i>Rhynchospora alba</i>	White beak-sedge	8
<i>Drosera rotundifolia</i>	Round-leaved sundew	5
<i>Carex panicea</i>	Carnation sedge	5
<i>Menyanthes trifoliata</i>	Bogbean	3
<i>Pedicularis sylvatica</i>	Common lousewort	1
Non-Vascular Species		
<i>Cladonia portentosa</i>	Reindeer lichen	25
<i>Sphagnum rubellum</i>	Red bogmoss	15
<i>Sphagnum subnitens</i>	Lustrous bogmoss	10
<i>Sphagnum cuspidatum</i>	Feathery bogmoss	8
<i>Sphagnum capillifolium</i>	Acute-leaved bogmoss	5
<i>Sphagnum papillosum</i>	Papillose bogmoss	3
% Bare ground		0
Fossitt (2000) Habitat Classification		Raised bog (PB1)
IVC Classification		BG2B – <i>Erica tetralix</i> – <i>Andromeda polifolia</i> bog
Affinity to Annex I habitat		Yes



Plate 3-9 The location of the relevé undertaken within the central area of the raised bog to the north of proposed Turbine 1, located outside the Site

East of Proposed Turbine 3

A very small area of uncut, remnant raised bog was identified to the east of the proposed Turbine 3. This area is bordered by a facebank which is approximately 1.5m in height, and a deep drain. A 4mx4m relevé was taken approximately 10m from the facebank and 50m from the location of proposed Turbine 3, and is presented in Table 3-10 below. This area of raised bog was dry in nature, with approximately 25% *Sphagnum* cover and firm ground conditions. No pools or tussocks were present and the area was surrounded by degraded cutover bog. The western raised bog indicator *Racomitrium lanuginosum* was recorded within this area. This area was found to best align with the *Marginal* raised bog ecotope, per Fernandez *et al.* (2014).

Following analysis of the results of the botanical assessments, and given the dry, degraded and isolated nature (i.e. surrounded by cutover degraded cutover bog) of this small remnant of uncut raised bog, it was not found to conform to any Annex I raised bog habitats.

Table 3-10 Botanical Survey Results – Remnant Raised bog to the east of proposed Turbine 3

Remnant raised bog to the east of proposed Turbine 3	Grid reference: ITM X 528874, Y 777951	Date: 14/04/2026
Species	Common Name	% Cover
Vascular Plants		
<i>Calluna vulgaris</i>	Ling heather	55
<i>Eriophorum angustifolium</i>	Common cottongrass	12

<i>Narthecium ossifragum</i>	Bog asphodel	10
<i>Carex panicea</i>	Carnation sedge	8
<i>Trichophorum germanicum</i>	Deergrass	2
<i>Erica tetralix</i>	Cross-leaved heath	2
<i>Rhynchospora alba</i>	White beak-sedge	2
<i>Eriophorum vaginatum</i>	Hare's-tail cottongrass	2
Non-Vascular Species		
<i>Cladonia portentosa</i>	Reindeer lichen	35
<i>Sphagnum rubellum</i>	Red bogmoss	20
<i>Sphagnum tenellum</i>	Soft bogmoss	3
<i>Sphagnum papillosum</i>	Papillose bogmoss	2
<i>Hypnum jutlandicum</i>	Heath plaitmoss	1
<i>Racomitrium lanuginosum</i>	Woolly fringemoss	0.5
<i>Cladonia uncialis</i>	-	0.5
<i>Odontoschisma sphagni</i>	Bog-moss flapwort	0.5
% Bare ground		2
Fossitt (2000) Habitat Classification		Raised bog (PB1)
IVC Classification		BG2B – <i>Erica tetralix</i> – <i>Andromeda polifolia</i> bog
Affinity to Annex I habitat		No



Plate 3-10 Area of remnant raised bog surrounded by cutover bog, located to the east of proposed Turbine 3.

Small areas of Remnant Raised bogs within Cutover bog complex (PB4/PB1)

An area of largely Cutover bog (PB4) is present to the east of the main access road through the Site which contains small remnant areas of uncut bog. The area is best classified as a Cutover bog/Raised bog habitat mosaic (PB4/PB1). These areas are bordered by drains, generally surrounded by cutover bog, and bordered to the west by the existing site access track. Three 4mx4m relevés were undertaken in the larger sections of uncut raised bog within this area, and are presented in this section.

The northernmost relevé within the complex of cutover and raised bog is presented in Table 3-11 below. At this location *Sphagnum* cover exceeded 40% and ground conditions were soft to firm, with wetter areas supporting species such as *S. cuspidatum*, however no pools were present (Plate 3-11). The western indicator *Racomitrium lanuginosum* was recorded within this area. The Annex V moss *Leucobryum glaucum* was also identified within this relevé, and *Sphagnum austinii* was also recorded outside the relevé area. This area was found to best align with the *Marginal* raised bog ecotope, per Fernandez *et al.* (2014).

Following analysis of the results of the botanical assessments, this area was found to have the potential to conform to the Annex I habitat Degraded raised bogs still capable of natural regeneration.

Table 3-11 Botanical Survey Results – Remnant raised bog within a complex of cutover bog, northernmost area

Northernmost area of raised bog and cutover bog complex	Grid reference: ITM X 528664, Y 777818	Date: 14/04/2026
Species	Common Name	% Cover
Vascular Plants		
<i>Eriophorum vaginatum</i>	Hare's-tail cottongrass	25

<i>Calluna vulgaris</i>	Ling heather	20
<i>Eriophorum angustifolium</i>	Common cottongrass	8
<i>Carex panicea</i>	Carnation sedge	4
<i>Narthecium ossifragum</i>	Bog asphodel	3
<i>Rhynchospora alba</i>	White beak-sedge	1
<i>Myrica gale</i>	Bog myrtle	1
<i>Vaccinium oxycoccos</i>	Cranberry	0.5
<i>Andromeda polifolia</i>	Bog-rosemary	0.5
Non-Vascular Species		
<i>Sphagnum rubellum</i>	Red bogmoss	20
<i>Sphagnum tenellum</i>	Soft bogmoss	10
<i>Cladonia portentosa</i>	Reindeer lichen	8
<i>Sphagnum medium</i>	Claret bogmoss	5
<i>Sphagnum capillifolium</i>	Acute-leaved bogmoss	3
<i>Leucobryum glaucum</i>	Large whitemoss	1
<i>Sphagnum cuspidatum</i>	Feathery bogmoss	1
<i>Hypnum jutlandicum</i>	Heath plaitmoss	1
<i>Cladonia uncialis</i>	-	1
<i>Racomitrium lanuginosum</i>	Woolly fringemoss	0.5
% Bare ground		2
Fossitt (2000) Habitat Classification		Raised bog (PB1)
IVC Classification		BG2B – <i>Erica tetralix</i> – <i>Andromeda polifolia</i> bog
Affinity to Annex I habitat		Yes



Plate 3-11 Northernmost relevé location within the raised bog complex with cutover bog

A second relevé was undertaken within the central section of the complex of cutover and raised bog and is presented in Table 3-12 below. At this location, overall ground firmness was soft, with a *Sphagnum* cover of approximately 60%. There were no obvious hummocks or pools within the area and tussocks were minimal (Plate 3-12). The Annex V moss *Leucobryum glaucum* was also identified outside the relevé area, and hummocks of *Sphagnum beothuk* were also present. This area was found to best align with the *Marginal* raised bog ecotope, per Fernandez *et al.* (2014).

Following analysis of the results of the botanical assessments, this area was found to have the potential to conform to the Annex I habitat Degraded raised bogs still capable of natural regeneration.

Table 3-12 Botanical Survey Results – Remnant raised bog within a complex of cutover bog, central area

Central area of raised bog and cutover bog complex	Grid reference: ITM X 528650, Y 777674	Date: 14/04/2026
Species	Common Name	% Cover
Vascular Plants		
<i>Calluna vulgaris</i>	Ling heather	40
<i>Erica tetralix</i>	Cross-leaved heath	15
<i>Eriophorum vaginatum</i>	Hare's-tail cottongrass	15
<i>Narthecium ossifragum</i>	Bog asphodel	7
<i>Eriophorum angustifolium</i>	Common cottongrass	5
<i>Carex panicea</i>	Carnation sedge	4

<i>Trichophorum germanicum</i>	Deergrass	3
<i>Andromeda polifolia</i>	Bog rosemary	0.5
Non-Vascular Species		
<i>Sphagnum rubellum</i>	Red bogmoss	45
<i>Sphagnum tenellum</i>	Soft bogmoss	10
<i>Hypnum jutlandicum</i>	Heath plaitmoss	5
<i>Sphagnum capillifolium</i>	Acute-leaved bogmoss	5
<i>Sphagnum papillosum</i>	Papillose bogmoss	2
<i>Sphagnum cuspidatum</i>	Feathery bogmoss	1
<i>Odontoschisma sphagni</i>	Bog-moss flapwort	1
<i>Aulacomnium palustre</i>	Bog bead-moss	0.5
<i>Diplophyllum albicans</i>	White earwort	0.5
% Bare ground		0
Fossitt (2000) Habitat Classification		Raised bog (PB1)
IVC Classification		BG2B – <i>Erica tetralix</i> – <i>Andromeda polifolia</i> bog
Affinity to Annex I habitat		Yes



Plate 3-12 Central relevé location within the raised bog complex with cutover bog

A second relevé was undertaken within the central section of the complex of cutover and raised bog and is presented in Table 3-13 below. In this area, the ground firmness ranged from firm to soft, and *Sphagnum* cover was approximately 60% (Plate 3-13). No significant hollows or hummocks were present and no pools were recorded in this area. The western indicator *Racomitrium lanuginosum* and hummocks of *Sphagnum beothuk* were also present in the wider area. This area was found to best align with the *Marginal* raised bog ecotope, per Fernandez *et al.* (2014).

Following analysis of the results of the botanical assessments, this area was found to have the potential to conform to the Annex I habitat Degraded raised bogs still capable of natural regeneration.

Table 3-13 Botanical Survey Results – Remnant raised bog within a complex of cutover bog, southernmost area

Southernmost area of raised bog and cutover bog complex	Grid reference: ITM X 528535, Y 777579	Date: 14/04/2026
Species	Common Name	% Cover
Vascular Plants		
<i>Calluna vulgaris</i>	Ling heather	50
<i>Eriophorum vaginatum</i>	Hare's-tail cottongrass	25
<i>Erica tetralix</i>	Cross-leaved heath	15
<i>Eriophorum angustifolium</i>	Common cottongrass	3
<i>Narthecium ossifragum</i>	Bog asphodel	3
<i>Carex panicea</i>	Carnation sedge	2

<i>Trichophorum germanicum</i>	Deergrass	1
<i>Andromeda polifolia</i>	Bog rosemary	0.5
Non-Vascular Species		
<i>Sphagnum rubellum</i>	Red bogmoss	25
<i>Sphagnum papillosum</i>	Papillose bogmoss	20
<i>Hypnum jutlandicum</i>	Heath plaitmoss	15
<i>Sphagnum tenellum</i>	Soft bogmoss	8
<i>Cladonia portentosa</i>	Reindeer lichen	3
<i>Sphagnum medium</i>	Claret bogmoss	2
<i>Sphagnum cuspidatum</i>	Feathery bogmoss	2
<i>Campylopus introflexus</i>	Heath star-moss	0.5
<i>Cladonia uncialis</i>	-	0.25
% Bare ground		0
Fossitt (2000) Habitat Classification		Raised bog (PB1)
IVC Classification		BG2B – <i>Erica tetralix</i> – <i>Andromeda polifolia</i> bog
Affinity to Annex I habitat		Yes



Plate 3-13 Southernmost relevé location within the raised bog complex with cut-over bog

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BIBLIOGRAPHY

- British Bryological Society. Atherton, I., Bosanquet, S. and Lawley, M. eds., 2010. Mosses and liverworts of Britain and Ireland: a field guide. Plymouth.
- EC (2013). Interpretation Manual of European Union Habitats. Version EUR 28. European Commission, DG Environment.
- European Communities (Natural Habitats) Regulations, SI 94/1997, SI 233/1998 and SI 378/2005 – <http://www.irishstatutebook.ie>.
- Fernandez Valverde, F., Crowley, W. and Wilson, S. (2012) Raised Bog Monitoring Project 2011 - Volume 1: Main Report. Irish Wildlife Manuals No. 62. NPWS, Dublin.
- Fernandez, F., Connolly K., Crowley W., Denyer J., Duff K. & Smith G. (2014) Raised Bog Monitoring and Assessment Survey 2013. Irish Wildlife Manuals, No. 81. National Parks and Wildlife Service, Department of Arts, Heritage and Gaeltacht, Dublin, Ireland.
- Fernandez Valverde, F., Fanning, M., McCorry, M. and Crowley, W. (2005). Raised Bog Monitoring Project 2004-2005. Report to the National Parks and Wildlife Service, Dublin.
- Fossitt, J. A. (2000). A Guide to Habitats in Ireland. Dublin: The Heritage Council.
- 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.
- NPWS (2025). The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitats Assessments. Unpublished NPWS report.
- Perrin, P.M., Barron, S.J., Roche, J.R. & O'Hanrahan, B. (2014). Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland. Version 2.0. *Irish Wildlife Manuals*, No. 79. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.
- Perrin, P.M., FitzPatrick, Ú. and Lynn, D. (2018). The Irish Vegetation Classification – An Overview of Concepts, Structures and Tools.
- Perrin (2025). Irish Vegetation Classification ERICA – Engine for Relevés to Irish Communities Assignment V6.5 User's Manual
- 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.
- Stace, C. (2019). New Flora of the British Isles, 4th Edition. C&M Floristics