FEHILY TIMONEY

DESIGNING AND DELIVERING
A SUSTAINABLE FUTURE

BALLYNAHONE LONG DURATION ENERGY STORAGE

Ecological Impact Assessment

Prepared for:

FuturEnergy Ireland Development DAC

FuturEnergy Ireland

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Planning and Environmental Report

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1. INTRODUCTION

1.1 Abstract

This Ecological Impact Assessment (EcIA) was commissioned by FuturEnergy Ireland DAC, and prepared by Fehily Timoney and Company. The report evaluates the proposed Ballynahone Long Duration Energy Storage (LDES) Facility in accordance with CIEEM Guidance. The Proposed Development is situated within a rural landscape, near Buncrana, Co. Donegal, and comprises a land parcel of 5.2 Ha, relating to the permanent removal of vegetation and trees to construct a Long Duration Energy Storage (LDES) Facility. The report evaluates whether the Proposed Development will have any significant effects on habitats, species or ecosystems within the Zone of Influence (ZoI) of the Proposed Development. Mitigation was prescribed for two ecological receptors, namely badger and woodcock. Additionally, biodiversity enhancement measures were identified for the Proposed Development.

1.2 Introduction

The following section of the Planning and Environmental Report examines the potential effects of the proposed Long Duration Energy Storage facility, Co. Donegal on Biodiversity.

This assessment is an Ecological Impact Assessment (EcIA) which has been prepared in accordance with CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, Version 1.2 (Updated April 2022). An EcIA is not a statutory requirement, however, it is a best practice evaluation process. This EcIA is provided to assist the Competent Authority with its decision-making in respect of the Proposed Development. An EcIA is the process of identifying, quantifying and evaluating the potential effects of a Proposed Development on ecological features based on an objective assessment of the best information available (CIEEM, 2018). An ecological feature is defined as a species, habitat, or ecosystem that has the potential to be affected by a Proposed Development.

The purpose of this EcIA is to:

- Identify, quantify, and evaluate potential effects of development-related or other proposed actions on habitats, species, and ecosystems within the Proposed Development area;
- Establish an understanding of the baseline ecological conditions at the Proposed Development site;
- Identify flora and fauna (and/or their breeding and resting places) of ecological value, including those protected under the Wildlife Act (and under Flora Protection Order) or the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) which could be impacted by the Proposed Development;
- Evaluate the ecological significance of the receiving environment;
- Consider measures to mitigate the potential negative impact(s) of the Proposed Development on the ecology of the receiving environment;
- Clearly and concisely present the findings of the assessment.

The specific objectives of the assessment were to:

- Undertake baseline ecological surveys and evaluate the nature conservation importance of the Site of the Proposed Development;
- Identify and assess the direct, indirect, and cumulative ecological implications or impacts of the Proposed Development during its lifetime;
- Where possible, proposed mitigation measures to remove or reduce those impacts at the appropriate stage of development;
- Identify opportunities for biodiversity gain and enhancement.

1.3 Relevant Legislation and Policy

1.3.1 National Biodiversity Action Plan

Ireland's 4th National Biodiversity Action Plan 2023-2030[1], in accordance with the Convention on Biological Diversity, is a framework for the conservation and protection of Ireland's biodiversity, with an overall objective to secure the conservation, including, where possible, the enhancement and sustainable use of biological diversity in Ireland and to contribute to collective efforts for conservation of biodiversity globally. The plan is implemented through legislation and statutory instruments concerned with nature conservation. The Planning and Development Acts, 2000 (revised September 2020) and the European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1989 to 1999 are particularly important in that regard and include a number of provisions directly concerned with the protection of natural heritage and biodiversity.

1.3.2 European Communities (Birds and Natural Habitats) Regulations 2011 as amended

The European Communities (Birds and Natural Habitats) Regulations 2011 and its amendments are part of the legislation hat transposes the Birds Directive (2009/147/EC) and the Habitats Directive (92/43/EEC) into Irish law. The Regulations and their amendments provide the legal framework for the protection, management, and control of wild birds and their habitats in Ireland, and place obligations on all public authorities to have regard to the requirements of the Habitats Directive beyond the realms of planning related consents issues under the Planning and Development Act 2000, as amended (the PDA). The Regulations also provide for the protection of species of European importance.

This protection is afforded in part through the designation of areas that represent significant populations of listed species within a European context, i.e., Natura 2000 sites. An area designated for bird species is classed as a Special Protection Area (SPA), and an area designated for other protected species and habitats is classed as a Special Area of Conservation (SAC). Birds listed in Annex I of the Birds Directive in SPAs and habitats and species listed in Annexes I and II, respectively, of the Habitats Directive in SACs in which they are designated features have full European protection. Species listed on Annex IV of the Habitats Directive are strictly protected wherever they occur, whether inside or outside European sites.

Invasive species are subject to restrictions (Third Schedule) under Regulation 49 of the European Communities (Birds and Natural Habitats) Regulations, 2011

[1] NPWS (2023). Available at: https://www.npws.ie/sites/default/files/files/4th_National_Biodiversity_Action_Plan.pdf

1.3.3 Wildlife Act 1976 as amended

The Wildlife Act 1976 is a series of Irish legislative measures that provide the legal framework for the protection and conservation of wildlife in Ireland. The Wildlife Act 1976 is the principal legislation that aims to protect and conserve wild fauna and flora, regulate the exploitation of game resources, and afford protection to all wild species of fauna. The Wildlife Act 1976 as amended addresses various aspects of wildlife protection and conservation, including the regulation of hunting, the protection of habitats, and the enforcement of wildlife regulations.

The Wildlife Act protects species from injury, disturbance and from damage to breeding and resting sites.

The Flora (Protection) Order, (2022) implemented under the Wildlife Act gives legal protection to certain species of wild flora. Under the Order, it is an offence to uproot, damage, alter, or interfere with any species listed species listed within the Order, or to damage or alter their supporting habitats.

Sites of national importance (NHAs) for nature conservation are afforded protection under planning policy and the Wildlife Acts. NHAs are sites that are designated under statute for the protection of flora, fauna, habitats and geological interest. Proposed NHAs (pNHAs) are published sites identified as of similar conservation interest but have not been statutorily proposed or designated.

1.3.4 Fisheries (Consolidation) Act 1959

Section 171 of the Fisheries (Consolidation) Act 1959 creates the offence of throwing, emptying, permitting or causing to fall onto any waters deleterious matter. Deleterious matter is defined as not only as any substance that is liable to injure fish but is also liable to damage their spawning grounds or the food of any fish or to injure fish in their value as human food or to impair the usefulness of the bed and soil of any waters as spawning grounds or other capacity to produce the food of fish.

1.3.5 Local Government (Water Pollution) Act 1976

The Local Government (Water Pollution) Act 1976 is an Irish piece of legislation that aims to protect and improve water quality in Ireland. The act provides for the regulation of wastewater treatment and discharge, as well as the management of water resources. Under Section 3 of the Local Government (Water Pollution) Act, 1977 (as amended by Sections 3 and 24 of the 1990 Act) it is an offence to cause or permit any polluting matter to enter waters.

1.3.6 Donegal County Development Plan 2024 - 2030

The 2024-2030 County Donegal Development Plan was adopted on 16th May 2024 and came into effect 26th June 2024.

This plan contains a number of biodiversity policies, relative to the Proposed Development, which are listed in the following Table 1-1:

Table 1-1: Donegal County Development Plan 2024-2030 Biodiversity Policies

Policy No.	Policy Description
BIO-P-1	To require all developments to comply with the requirements of the EU Habitats Directive and EU Bird Directive, including ensuring that development proposals:
	a. Do not adversely affect the integrity of any European/Natura 2000 site (i.e. Special Areas of Conservation and Special Protection Areas) including effects on ex-situ but functionally linked habitats, and species (e.g. Pearl Mussel) save where a plan must be carried out for imperative reasons of overriding public interest (IROPI).
	b. Provide for the protection of animal and plant species listed in Annex IV of the EU Habitats Directive and the Flora Protection Order.
	c. Protect and enhance features of the landscape (such as rivers, riverbanks, field boundaries, ponds and small woods) which are of major importance for wild fauna and flora and the ecological coherence of the Natura 2000 network.
BIO-P-2	Ensure that all developments seek to conserve/protect the qualifying interests of Ramsar Sites, Nature Reserves, Natural Heritage Areas (NHA), proposed Natural Heritage Areas (pNHA), the Cró na mBroanáin Red Grouse Sanctuary and any species protected under the Wildlife Act save to the extent necessary to provide for strategic infrastructure projects including but not restricted to the TEN-T Priority Route Improvement Project, Donegal, the Bridgend to County border project scheme, the Buncrana Inner Relief Road and Greenways, subject to such projects being in accordance with all relevant statutory and regulatory provisions. Otherwise, where no statutory or regulatory provisions apply this policy will be implemented by the Council in so far as same can be practicably and reasonably achieved within the context of such projects.
BIO-P-3	a. Protect features of local biodiversity value (e.g. hedgerows/field boundaries, trees, woodlands, wetlands, water bodies, riverbanks and peatlands) which make a significant contribution to the biodiversity, biodiversity/ecosystem services, ecological connectivity, and associated visual amenity and/or rural character of the area.
	b. Require that developments otherwise maximise the retention of and suitably integrate such features and provide new ecological corridors where appropriate. In this regard proposals for the removal of existing roadside hedgerows/field boundaries for new developments in rural areas will only be permitted in so far as is necessary to safeguard public safety and any remaining portion of those features identified above not so required shall be retained.
	c. Require that development proposals provide biodiversity enhancement measures (e.g. native tree and hedgerow planting, and nature-based water management solutions).
	d. Require that large-scale developments result in no net biodiversity loss and include a site-specific comprehensive Biodiversity Management Plan (BMP), as part of any planning proposal.
	This policy will be implemented by the Council in so far as same can be practicably and reasonably achieved within the context of Strategic Infrastructure Projects including, but not restricted to, the TEN-T Priority Route Improvement Project, Donegal, the Bridgend to County border project scheme, the Buncrana Inner relief Road and Greenways.

Policy No.	Policy Description
BIO-P-4	Ensure that any development proposals do not lead to the introduction or spread of invasive species. Where invasive species are present, development proposals will be required to be submit an appropriate control and management programme for the particular invasive species as part of the planning process and to comply with the provisions of the European Communities Birds and Habitats Regulations 2011 (S.I. 477/2011).
BIO-P-5	a. Ensure that new developments do not have a significant adverse impact on pollinator habitat and species, including protecting rare pollinators and maximizing the retention of habitats and providing biodiversity enhancement within development proposal where feasible.
	b. Require native pollinator friendly planting and management regimes as part of planting/landscaping schemes for new public development including green infrastructure, large scale residential and transport development.
	c. Manage road verges to enhance biodiversity in accordance with the All-Ireland Pollinator Plan.

2. METHODS

2.1 Scope

2.1.1 Study Area and Zone of Influence

As per CIEEM guidelines (2018)[2], the study area for the Proposed Development has been defined having regard to the spatial and temporal scale of potential biophysical changes in the environment which might occur as a result of the development and throughout its lifetime. Consideration is given to whether there could be landscape[3] or ecological connectivity[4] to any sensitive ecological receptor. As such the study area extends beyond the footprint of the works and considers potential direct and indirect links to sensitive ecological receptors and associated ecological structure and function.

"Zones of Influence" (ZOI) for individual ecological receptors refers to the zone within which potential effects are anticipated. ZOIs differ depending on the sensitivities of particular habitats and species and were assigned in accordance with best available guidance and through adoption of a precautionary approach.

The zone of influence for this Proposed Development was identified through a review of the nature, size and location of the Proposed Development, the sensitivities of the ecological features, known impacts and effects likely to arise as a result of the type of Proposed Development and the potential for in combination effects.

CIEEM (2018) defines the Zone of Influence (ZoI) as

> *"… the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities."*

Each ecological feature will have different Zones of Influence, depending on its ecological characteristics (CIEEM, 2018); best practice guidance and professional judgement were used to define the Zone of Influence for each ecological feature

The 'Source-Pathway-Receptor' (s-p-r) model was used to determine effects on ecological features , aided by the EPA's mapping tool (https://gis.epa.ie/EPAMaps/AAGeoTool). In order for an impact to be established, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism is sufficient to conclude that a potential effect is not of any relevance or significance.

[2] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2. Chartered Institute of Ecology and Environmental Management, Winchester
[3] Landscape connectivity is a combined product of structural and functional connectivity, i.e. the effect of physical landscape structure and the actual species use of the landscape.
[4] Connectivity is defined as a measure of the functional availability of the habitats needed for a particular species to move through a given area. Examples include the flight lines used by bats to travel between roosts and foraging areas or the corridors of appropriate habitat needed by some slow colonising species if they are to spread.

2.2 Baseline Data Collection

2.2.1 Desk Study

The desktop assessment consulted the following material for the purposes of ecological appraisal:

- OSI Aerial photography and 1:50000 mapping;
- National Parks and Wildlife Service (NPWS) Floral Protection Order (FPO) map viewer - Bryophytes (http://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=71f8df33693f48edbb70369d7fb26b7e accessed 29/08/2024);
- NPWS FPO map viewer - Vascular Plants (https://heritagedata.maps.arcgis.com/apps/webappviewer/index.html?id=a41ef4e10227499d8de17a8abe42bd1e accessed 29/08/2024);
- NPWS Habitats Directive - Article 17 GIS and Metadata map viewer (https://storymaps.arcgis.com/collections/1a721520030d404f899d658d5b6e159a accessed 29/08/2024);
- NPWS Birds Directive - Article 12 GIS and Metadata map viewer (https://www.npws.ie/maps-and-data/habitat-and-species-data/article-12-data accessed 29/08/2024);
- Geological Survey Ireland (GSI) area maps (https://www.gsi.ie/en-ie/data-andmaps/Pages/default.aspx accessed April 2024);
- EPA website datasets (soil, surface water quality, ground water quality, designated sites) (https://gis.epa.ie/EPAMaps/ accessed 29/08/2024);
- Geological Survey Ireland (GSI) area maps;
- National Biodiversity Data Centre (NBDC) maps (https://maps.biodiversityireland.ie/Map%20accessed%20April%202024 accessed 29/08/2024)
- European Breeding Bird Atlas (https://ebba2.info/ accessed 29/08/2024)
- Botanical Society of Britain and Ireland 10 square hectads (https://bsbi.org/maps accessed 29/08/2024)
- Ireland's Wetlands and their Waterbirds: Status and Distribution (Crowe 2005);
- The Atlas of Wintering Birds in Britain and Ireland (Lack, 1986);
- The Atlas of Breeding Birds in Britain and Ireland (Sharrock, 1976);
- Bird Atlas 2007-2011: The breeding and wintering birds of Britain and Ireland (Balmer et al., 2013);
- Birds of Conservation Concern in Ireland 2020-2026 (Gilbert et al., 2021).

Botanical species were assessed in accordance with their occurrence on the Flora Protection Order (2022) and The Ireland Red List No. 10: Vascular Plants (Wyse et al. 2016). Other species records were assessed according to the Irish Red Data Lists.

2.2.2 Field Surveys

Field surveys were carried out on three dates in 2024 within the land ownership boundary of the Proposed Development, on February 21st and 22nd, and August 15th, 2024, by Flynn Furney Environmental Consultants (FFEC). The purposes of these assessments were to examine the habitats present within and surrounding the Proposed Development, and record any activity from mammals, avifauna and other species.

The three ecological walkovers conducted by FFEC involved the appraisal of habitats with regard to 'Best Practice Guidance for Habitat Survey and Mapping' (Smith et., al, 2011) and were classified according to 'A Guide to Habitats in Ireland' (Fossitt, 2000).

During these walkovers, the land ownership boundary of the Proposed Development was surveyed for the presence of mammal species; including badgers (*Meles meles*), otters (*Lutra lutra*), pine marten (*Martes martes*), and red squirrel (*Sciurus vulgaris*) in accordance with the NRA (2009) guidelines[5].

In addition, during the three ecological walkovers, the ecologists surveyed for and recorded any birds that were heard or seen.

The three field assessments involved walkovers of the study area during daylight hours. As such, the FFEC ecologists visually assessed the landscape features within the land ownership boundary for potential use as bat roosting habitats and commuting and foraging habitats. This occurred in accordance with the BCT Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn.) (Collins, 2023), which identifies a grading protocol for assessing bat structures, trees and commuting and foraging habitats. Trees within the study area were assessed via a ground level inspection of the exterior of each tree to identify potential roost features that could be used for roosting bats.

There were no survey limitations. Additionally, the weather 24 hours in advance of and during each of the field assessments that were carried out were appropriate for field surveys.

2.2.3 Limitations

No limitations were encountered during the desk study or field surveys.

2.3 Assessment Approach

The ecological evaluation and impact assessment approach used in this report is based on Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland ("CIEEM guidelines") (CIEEM, 2018).

2.3.1 Important Ecological Features

Ecological features can be important for a variety of reasons and the rationale used to identify them is explained in the text. Importance may relate, for example, to the quality or extent of the site or habitats therein; habitat and/ or species rarity; the extent to which such habitats and/ or species are threatened throughout their range, or to their rate of decline.

[5] National Roads Authority. (2009). Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes. Accessible: https://www.tii.ie/media/4nthqz3a/ecological-surveying-techniques-for-protected-flora-and-fauna-during-the-planning-of-national-road-schemes.pdf. Accessed: August 2024.

2.3.2 Determining Importance

The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference has been used in this case, relying on known/ published accounts of distribution and rarity where available, and professional experience:

- International;
- National (i.e. Ireland);
- Regional (i.e. Ulster, the Western and Northern Region of Ireland);
- County (i.e. Donegal); and
- Local (i.e. within c. 5km).

The above frame of reference is applied to the ecological features identified during the desk study and surveys to inform this report.

The value of habitats has been measured against published selection criteria where available. Examples of relevant criteria include descriptions of habitats listed on Annex 1 of the Habitats Directive etc. In assigning a level of value to a species, it is necessary to consider its distribution and status, including a consideration of trends based on available historical records. Reference has therefore been made to published lists and criteria where available. Examples of relevant lists and criteria include: species of European conservation importance (as listed on Annexes II, IV and V of the Habitats Directive or Annex 1 of the Birds Directive) and Birds of Conservation Concern in Ireland[6], and IUCN Red List Categories and Criteria[7].

For the purposes of this report ecological features of Local Importance or greater and/or subject to legal protection have been subject to detailed assessment. Effects on other ecological features are considered unlikely to be significant in legal or policy terms.

2.3.3 Impact Assessment

The impact assessment process involves the following steps:

- identifying and characterising potential impacts;
- incorporating measures to avoid and mitigate (reduce) these impacts;
- assessing the significance of any residual effects after mitigation;
- identifying appropriate compensation measures to offset significant residual effects (if required); and
- identifying opportunities for ecological enhancement.

[6] https://birdwatchireland.ie/birds-of-conservation-concern-in-ireland/ (last accessed 4 September 2024)
[7] Rita Mansfield: https://www.iucnredlist.org/resources/categories-and-criteria
sent on Monday, 9 September 2024 10:03

When describing impacts, reference has been made to the following characteristics, as appropriate:

- Positive or negative;
- Extent;
- Magnitude;
- Duration;
- Timing;
- Frequency; and
- Reversibility.

The impact assessment process considers both direct and indirect impacts: direct ecological impacts are changes that are directly attributable to a defined action, e.g. the physical loss of habitat occupied by a species during the construction process. Indirect ecological impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process or feature, e.g. the creation of roads which cause hydrological changes, which, in the absence of mitigation, could lead to the drying out of wet grassland.

Consideration of conservation status is important for evaluating the effects of impacts on individual habitats and species and assessing their significance:

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

2.3.4 Significant Effects

Significance is always context-specific and tailored criteria should, thus, be developed for each Proposed Development and its settings.

The concept of ecological significance is addressed in paragraphs 5.24 through to 5.28 of CIEEM guidelines. Significance is a concept related to the weight that should be attached to effects when decisions are made. For the purpose of EcIA, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local and the scale of significance of an effect may or may not be the same as the geographic context in which the feature is considered important.

2.3.5 Cumulative Effects

Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a Proposed Development results in individually insignificant impacts that, when considered in-combination with impacts of other proposed or permitted plans and projects, can result in significant effects.

The cumulative impact of the Proposed Development is assessed by discussing the impact of the Proposed Development in terms of other developments that have planning permission, that are under construction or are in existence in the area. The cumulative impacts of neighbouring developments, forestry, and agriculture in the greater area are also considered. Refer to Section 8.11 for the assessment of cumulative impacts.

2.3.6 Avoidance, Mitigation, and Enhancement

When seeking mitigation, efforts should be consistent with the geographical scale at which an effect is significant. For example, mitigation for effects on a species population significant at a county scale should ensure no net loss of the population at a county scale. The relative geographical scale at which the effect is significant will have a bearing on the required outcome which must be achieved.

Where potentially significant effects have been identified, the mitigation hierarchy has been applied, as recommended in the CIEEM Guidelines. The mitigation hierarchy sets out a sequential approach beginning with the avoidance of impacts where possible, the application of mitigation measures to minimise unavoidable impacts. Once avoidance and mitigation measures have been applied, residual effects are then identified, and incorporation of opportunities for enhancement.

It is important for the EcIA to clearly differentiate between avoidance mitigation, and enhancement and these terms are defined here as follows:

- Avoidance is used where an impact has been avoided, e.g. through changes in scheme design;
- Mitigation is used to refer to measures to reduce or remedy a specific negative impact in situ;
- Enhancement is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

3. BASELINE ECOLOGY

3.1.1 Sites Designated for Nature Conservation

3.1.1.1 Sites of International and National Importance

A report to inform the Screening for Appropriate Assessment has been prepared in support of the planning application. This report assessed whether the Proposed Development, alone or in-combination with other plans or projects, is likely to have a significant effect on any European site(s).

Within 15km of the Proposed Development, there are two SACs identified: Lough Swilly SAC (002287) and North Inishowen Coast SAC (002012). There are three SPAs within 15km of the Proposed Development, namely Lough Swilly SPA (004075), Lough Foyle SPA (004087), and Horn Head to Fanad Head SPA (004194) (Table 3-1).

The Appropriate Assessment Screening Report concluded beyond reasonable scientific doubt that there are no likely significant effects associated with the Proposed Development on any European site, alone or in-combination with other plans or projects.

3.1.1.2 Natural Heritage areas and proposed Natural Heritage Areas (NHAs and pNHAs)

Six proposed Natural Heritage Areas (pNHAs) and four Natural Heritage Areas (NHAs) are located within 15km of the Proposed Development (Table 3-1).

None of the NHAs or pNHAs identified in the table below have meaningful pathways for impacts to arise due to the Proposed Development. Pathways for impact are described in full below:

- Lough Swilly Including Big Isle, Blanket Nook & Inch Lake pNHA (000166) is located 2.7km north-west of the Proposed Development, and is comprised of estuarine and lake waterbodies. The Mill River, located at an average distance of over 150m to the east of the Proposed Development, discharges into this pNHA. However, a stand of coniferous trees exists between this river and the Proposed Development, acting as a natural swale. As such, there is no surface water pathway between the Proposed Development and this pNHA. Due to the absence of a hydrological connection and separation distance of 2.7km, there is no potential for effect.
- Umrycam Bog NHA (002406) is situated 5.1km to the north of the Proposed Development, and is a mosaic of habitats comprising blanket bog, dry heath and wet heath. Annex II Marsh fritillary (*Euphydryas aurinia*) is also recorded within this NHA. This NHA and the Proposed Development are within the same groundwater body, Lough Swilly (NW_G_059). Due to the groundwater-dependent terrestrial habitats present at this designated site, impacts via the groundwater body were assessed. As the area of the groundwater body (910 km2) is far greater than that of the Proposed Development (0.11 km2), coupled with the distance to the NHA, there is no pathway via groundwater. Additionally, due to the separation distance of 5.1km between the Proposed Development and this NHA, there is no potential for effect.
- Illies Hill Bog NHA (001127) is located 7.8km to the north-east of the Proposed Development, and is comprised of blanket bogs and wet heaths. This NHA is situated within the same groundwater body as the Proposed Development. However, as the area of the groundwater body (910 km2) is far greater than that of the Proposed Development (0.11 km2), coupled with the distance to the NHA, there is no pathway via groundwater. Additionally, due to the separation distance of 7.8km between the Proposed Development and this NHA, there is no potential for effect.

- Canowen River Bog NHA (002405) is located 8.1km to the north-east of the Proposed Development, and comprises blanket bogs and wet heaths. This NHA is situated within the same groundwater body as the Proposed Development. However, as the area of the groundwater body (910 km2) is far greater than that of the Proposed Development (0.11 km2), coupled with the distance to the NHA, there is no pathway via groundwater. Additionally, due to the separation distance of 8.1km between the Proposed Development and this NHA, there is no potential for effect.
- Slieve Snaght Bogs NHA (002322) is located 10.8km to the north of the Proposed Development. This site is comprised of blanket bog, wet heath and dry heath habitats, and is situated within a different groundwater body (East Inishowen Groundwater Body (NW_G_050)). Therefore, there is no pathway via groundwater. Additionally, due to the separation distance of 10.8km between the Proposed Development and this NHA, there is no potential for effect.
- Bulbin Mountains pNHA (000120) is located 10.8km to the north of the Proposed Development, and is comprised of groundwater dependent habitats including blanket bogs. This pNHA is partially located within the same groundwater body as the Proposed Development. However, the area of the groundwater body (910 km2) is far greater than that of the Proposed Development (0.11 km2), and there is a large separation distance between the Proposed Development, and this designated site. In addition, the majority of this pNHA is located within a different groundwater body (East Inishowen Groundwater Body (NW_G_050)). As a result, there is no pathway for effect.
- North Inishowen Coast pNHA (002012) is located 12.5km to the north of the Proposed Development. This pNHA is comprised of marine habitats, including large shallow inlets and bays, tidal mudflats and sandflats. In addition, otter frequent this area. There is no connection via surface water or ecological features between the Proposed Development and this pNHA, due to the separation distance of 12.5km between the Proposed Development and this pNHA, as well as the separation of the two sites via the Lough Swilly coastal body. Therefore, there is no potential for effects.
- Lough Fad West pNHA (001161) is situated 12.8km to the north of the Proposed Development. This pNHA is proposed for the population of Arctic Char (*Salvelinus alpinus*) that resides within this acidic lake. There is no connection via surface water or ecological features between the Proposed Development and this pNHA, due to the separation distance of 12.8km and absence of hydrological connectivity. Therefore, there is no potential for effect.
- Port Lough pNHA (000180) is located 13.1km to the south of the Proposed Development, and is comprised of a lake habitat. There is no connection via surface water or ecological features between the Proposed Development and this pNHA, due to the separation distance of 13.1km and absence of hydrological connectivity. Therefore, there is no potential for effect.
- Ballymackoster Dunes pNHA (001089) is located 14.4km to the north of the Proposed Development, and comprises sand dunes. There is no connection via surface water or ecological features between the Proposed Development and this pNHA, due to the separation distance of 14.4km and absence of hydrological connectivity. Therefore, there is no potential for effect.

Table 3-1: European Conservation Sites and National Conservation Sites within the ZoI of the Proposed Development

Site (code)	List of Qualifying Interest/Special Conservation Interest	Distance from Proposed Development (km)
European Sites		
Lough Swilly SAC (002287)	Otter (*Lutra lutra*) [1355], *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410], Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0], Coastal lagoons [1150], Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330], Estuaries [1130]	2.78
Lough Swilly SPA (004075)	Sandwich Tern (*Sterna sandvicensis*) [A191], Mallard (*Anas platyrhynchos*) [A053], Great Crested Grebe (*Podiceps cristatus*) [A005], Greenshank (*Tringa nebularia*) [A164], Wigeon (*Anas penelope*) [A050], Black-headed Gull (*Chroicocephalus ridibundus*) [A179], Knot (*Calidris canutus*) [A143], Redshank (*Tringa totanus*) [A162], Shelduck (*Tadorna tadorna*) [A048], Red-breasted Merganser (*Mergus serrator*) [A069], Common tern (*Sterna hirundo*) [A193], Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395], Wetland and Waterbirds [A999], Shoveler (*Anas clypeata*) [A056], Goldeneye (*Bucephala clangula*) [A067], Common Gull (*Larus canus*) [A182], Oystercatcher (*Haematopus ostralegus*) [A130], Dunlin (*Calidris alpina*) [A149], Grey Heron (*Ardea cinerea*) [A028], Teal (*Anas crecca*) [A052], Coot (*Fulica atra*) [A125], Greylag Goose (*Anser anser*) [A043], Whooper Swan (*Cygnus cygnus*) [A038], Scaup (*Aythya marila*) [A062], Curlew (*Numenius arquata*) [A160]	3.49
Lough Foyle SPA (004087)	Red-throated Diver (*Gavia stellata*) [A001], Lapwing (*Vanellus vanellus*) [A142], Light-bellied Brent Goose (*Branta bernicla hrota*) [A046], Curlew (*Numenius arquata*) [A160], Teal (*Anas crecca*) [A052], Oystercatcher (*Haematopus ostralegus*) [A130], Black-headed Gull (*Chroicocephalus ridibundus*) [A179], Red-breasted Merganser (*Mergus serrator*) [A069], Shelduck (*Tadorna tadorna*) [A048], Golden Plover (*Pluvialis apricaria*) [A140], Redshank (*Tringa totanus*) [A162], Common Gull (*Larus canus*) [A182], Wetland and Waterbirds [A999], Herring Gull (*Larus argentatus*) [A184], Bar-tailed Godwit (*Limosa lapponica*) [A157], Whooper Swan (*Cygnus cygnus*) [A038], Mallard (*Anas platyrhynchos*) [A053], Bewick's Swan (*Cygnus columbianus bewickii*) [A037], Great Crested Grebe (*Podiceps cristatus*) [A005], Dunlin (*Calidris alpina*) [A149], Wigeon (*Anas penelope*) [A050], Greylag Goose (*Anser anser*) [A043], Eider (*Somateria mollissima*) [A063], Knot (*Calidris canutus*) [A143]	10.95
North Inishowen Coast SAC (002012)	European dry heaths [4030], Mudflats and sandflats not covered by seawater at low tide [1140], Fixed coastal dunes with herbaceous vegetation - grey dunes [2130], Machairs * in Ireland [21A0], Narrow-mouthed whorl snail (*Vertigo angustior*) [1014], Perennial vegetation of stony banks [1220], Vegetated sea cliffs of the Atlantic and Baltic coasts [1230], Otter (*Lutra lutra*) [1355]	12.25

Site (code)	List of Qualifying Interest/Special Conservation Interest	Distance from Proposed Development (km)
Horn Head to Fanad Head SPA (004194)	Barnacle goose (*Branta leucopsis*) [A045], Fulmar (*Fulmarus glacialis*) [A009], Cormorant (*Phalacrocorax carbo*) [A017], Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395], Razorbill (*Alca torda*) [A200], Guillemot (*Uria aalge*) [A199], Shag (*Phalacrocorax aristotelis*) [A018], Peregrine falcon (*Falco peregrinus*) [A103], Kittiwake (*Rissa tridactyla*) [A188], Chough (*Pyrrhocorax pyrrhocorax*) [A346]	12.31
Designated Sites		
Lough Swilly Inlcluding Big Isle, Blanket Nook & Inch Lake pNHA (000166)	No site synopsis. See SPA 004075 and SAC 002287.	2.9
Umrycam Bog NHA (002406)	No site synopsis. Blanket bog, dry heath, wet heath, marsh fritillary.	5.1
Illies Hill Bog NHA (001127)	No site synopsis. Blanket bog, wet heaths.	8.0
Canowen River Bog NHA (002405)	No site synopsis. Blanket bog, wet heaths.	8.3
Slieve Snaght Bogs NHA (002322)	No site synopsis. Blanket bogs, wet heaths and dry heaths.	10.9
Bulbin Mountains pNHA (000120)	Area of 250 ha, comprised of grasslands on peaty soils, grasslands on mineral soils, vegetation on exposed rock which supports many rare alpine plants and blanket bog within the site.	10.8
North Inishowen Coast pNHA (002012)	No site synopsis. Large shallow inlets and bays, tidal mudflats and sandflats and otter are located here.	12.9
Lough Fad West pNHA (001161)	Medium-sized acidic lake, that holds a population of vulnerable Arctic Char (*Salvelinus alpinus*).	13.2
Port Lough pNHA (000180)	No site synopsis. Lake, common frog nearby.	13.1
Ballymastocker Dunes pNHA (001089)	Dune complex, comprising stable grey and fixed dunes.	14.4

3.1.2 Habitats

The habitats within the land ownership boundary of the Proposed Development were assessed by Flynn Furney Environmental Consultants (FFEC) on three occasions, February 21st and 22nd, and August 15th, 2024. The study area comprises WD4 Conifer Plantation, WD1 Mixed Broadleaved Woodland, WS1 Scrub, GS1 Dry Calcareous Neutral Grassland, and a mosaic of GM1/GS4 Marsh/Wet Grassland. However, the habitats within the red line boundary of the Proposed Development predominantly comprise WD4 Conifer Plantation, as well as a small area of PB4 Cutover Bog. A public road, classified as BL3 Buildings and Artificial Surfaces, is located within the northern portion of the red line boundary, which will be used to access the Proposed Development. Figure 3-1 details the habitat map produced by FFEC.

No Annex I habitats were detected within or surrounding the study area. Additionally, no rare, threatened or protected species of plants as per the Red Data List (Wyse Jackson et al., 2016) or species listed in the Flora Protection Order (2022) were identified.

The field assessment determined that, immediately to the southern portion of the red line boundary of the Proposed Development, exists WD4 Conifer Plantation and a mosaic of WS1/WD1 Scrub/(Mixed) Broadleaved Woodland. To the west of the red line boundary, lies GM1/GS1 Marsh/Wet Grassland. Immediately to the north of the red line boundary, GS1 Dry Calcareous Neutral Grassland can be found.

3.1.2.1 WD4 Conifer Plantation

The eastern portion of the Proposed Development comprises WD4 Conifer Plantation, which is dominated by Sitka Spruce (*Picea sitchensis*). Lodgepole Pine (*Pinus contorta*) was also found throughout the study area, as well as occasional stands of Silver Birch (*Betula pendula*), Grey Willow (*Salix cinerea*), Rowan (*Sorbus aucuparia*), Heather (*Calluna* sp.) and Bilberry (*Vaccinium myrtilis*). The field assessments determined that the ground flora primarily consisted of occasional Bracken (*Pteridium aquilifolium*) and Broad Buckler Fern (*Dryopteris dilata*), as well as some sphagnum mosses in the centre of the study area. The ecologists judged that the Sitka Spruce plantation is of varying ages, but likely less than 30 years established. Within the gaps between plantation blocks, Purple Moor-grass (*Molinea caerula*) was found abundantly. In more open areas, Purple Moor-grass, Wild Angelica (*Angelica sylvestris*) and occasional Lodgepole Pine were found.

The western portion of the Proposed Development is predominantly comprised of WD4 Conifer Plantation. The conifer plantation habitats within this portion of the Proposed Development are of a similar composition as that in the eastern portion of the Proposed Development, dominated by Sitka Spruce.

This habitat is of low value in terms of biodiversity, as they are transient man-made habitats that commonly occur throughout the county and country.

Woodcock winter in this habitat type. However, the Proposed Development will not lead to a loss of the entire habitat. Approximately 14 ha of conifer plantation will be retained within the land ownership boundary, and 4.7 ha of conifer plantation will be permanently felled. As such, this will not lead to a significant loss in available roosting habitat for Woodcock.

Additionally, while there is suitable habitat for merlin, kestrel, hen harrier and other protected bird species, there is no evidence to suggest they are located within or use the habitats within or surrounding the Proposed Development.

As such, this habitat is evaluated as Local Importance, according to CIEEM Guidelines.

3.1.2.2 PB4 Cutover Bog

The cutover bog habitat in the western portion of the Proposed Development is remnant of bogland that was previously cutover, and subsequently drained and afforested which have since been cleared. The flora in the cutover bog habitat comprises purple moor-grass, as well as frequent Bog Myrtle (*Myrica gale*), Heather (*Calluna vulgaris*) and Soft Rush (*Juncus* effusus), and occasional Tormentil (*Potentilla erecta*) and Bramble (*Rubus fruticosus*). The uneven ground in this area contains some hummocks of sphagnum mosses. Approximately 0.14 Ha of this habitat will be permanently removed during the construction phase of the Proposed Development.

Due to the poor floral species diversity, and small, dry, degraded nature of the area, this habitat is of low biodiversity value. As such, this habitat is evaluated as Local Importance, according to CIEEM Guidelines.

3.1.2.3 BL3 Buildings and Artificial Surfaces

This habitat is located along the northern border of the red line boundary of the Proposed Development, whereby a local road lies.

Due to the man-made, artificial nature of this habitat, it is evaluated as Local Importance, according to CIEEM Guidelines.

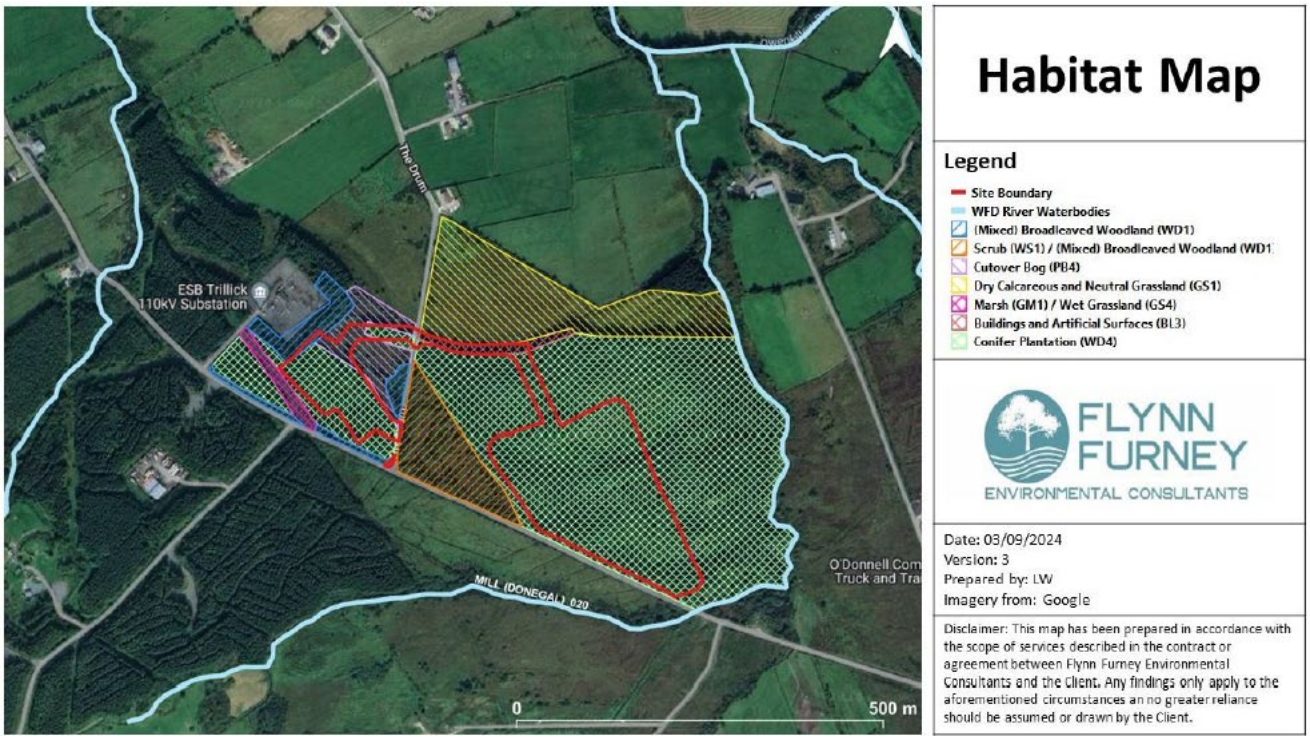

Figure 3-1: Map of the habitats within the land ownership boundary of the Proposed Development, carried out by Flynn Furney Environmental Consultants

3.1.3 Species

3.1.3.1 Plants

The National Biodiversity Data Centre (NBDC) database, accessed 28/08/2024, holds no records of rare or protected floral species within the 2km Grid Squares C33Q, C33V, and C32Z surrounding the Proposed Development. The NBDC also holds no records of rare or protected species within the 1km Grid square C3729 that overlaps the Proposed Development.

The NPWS Flora Protection Order (FPO) MapViewer holds no records of species protected under the FPO.

No invasive non-native floral species have been recorded within 2km grids C33Q, C33V or C32Z that overlap or are adjacent to the Proposed Development.

Additionally, no rare or protected species, or invasive non-native species were recorded during field surveys.

3.1.3.2 Birds

According to the NBDC database, 16 bird species have been recorded within the 2km grid squares C33Q, C33V and C32Z surrounding the Proposed Development (see Table 3-2 below). A total of seven red-listed species were recorded, namely Common Kestrel (*Falco tinnunculus*), Common Snipe (*Gallinago gallinago*), Common Swift (*Apus apus*), Eurasian Curlew (*Numenius arquata*), Eurasian Woodcock (*Scolopax rusticola*), Northern Lapwing (*Vanellus vanellus*), and Yellowhammer (*Emberiza citrinella*). Additionally, seven amber-listed species were recorded, namely Barn Swallow (*Hirundo rustica*), Common Linnet (*Carduelis cannabina*), Common Starling (*Sturnus vulgaris*), Hen Harrier (*Circus cyaneus*), House Sparrow (*Passer domesticus*), Sand Martin (*Riparia riparia*), and Sky Lark (*Alauda arvensis*).

Habitat suitability for red-listed species

Common Snipe inhabit upland, marine and intertidal, farmland, wetland and grassland habitats. Common Swift can be found in urban and suburban areas, farmland, wetland and grassland habitats. Eurasian Curlew habituate upland, marine and intertidal, wetland, bog and grassland habitats. Northern Lapwing inhabit upland, marine and intertidal, farmland, wetland and grassland habitats. Although there are some wet habitats within the Proposed Development including wet grassland and cutover bog, these habitats are small in size and sub-optimal for Common Snipe, Common Swift, Eurasian Curlew, and Northern Lapwing. As the Proposed Development is predominantly comprised of coniferous plantations, there are no suitable habitats for these species within the red line boundary of the Proposed Development.

Eurasian Woodcock can be found in woodland, upland, urban and suburban, and farmland habitats. Common Kestrel prefer open habitats such as grassland, farmland, heathland, and moorland. However, they can also be found within woodland habitats. Yellowhammer can be found in woodlands, hedgerows, heathland and farmland habitats. Due to the wooded nature of the Proposed Development, there is potential for Woodcock, Kestrel, and Yellowhammer to use the habitats within the red line boundary.

Habitat suitability for amber-listed species

Barn Swallow inhabit a variety of habitats, including meadows, pastures, woodlands and grasslands. Common Linnet is typically found within urban and suburban areas, as well as farmland, heathland and grassland habitats. Common Starling are found in a wide variety of habitats, including grassland, heathland, farmland, marine and intertidal, wetland, and woodland habitats. Hen Harrier typically inhabit upland, marine and intertidal, farmland, wetland, grassland and woodland habitats. House Sparrow typically inhabit grassland, farmland, woodland, and urban and suburban habitats. Due to the predominant habitat type within the Proposed Development comprising coniferous plantations, there is potential for Barn Swallow, Common Linnet, Common Starling, Hen Harrier, and House Sparrow to occur within the red line boundary.

Sand Martin favour rural areas and can be found in farmland and wetland habitats. Sky Lark inhabit upland, marine and intertidal, farmland, heathland and grassland habitats. As there are no such habitats within or surrounding the Proposed Development, there is no potential for Sand Martin or Sky Lark to occur within the red line boundary of the Proposed Development.

Habitat suitability for additional species

Additionally, Merlin (*Falco columbarius*), a red-list species protected under Annex I, and Buzzard (*Buteo buteo*), a green list species, have been recorded within 10km of the Proposed Development. Merlin and Buzzard can be found to nest within woodland habitats, and forestry plantations. As such, there is potential for these species to occur within the red line boundary of the Proposed Development.

During the winter ecological walkovers, which were conducted on February 21st and 22nd 2024, the following birds were heard and seen by FFEC ecologists:

- Chaffinch (*Fringilla coelebs*)
- Wren (*Troglodytes troglodytes*)
- Song Thrush (*Turdus philomelos*)
- Woodpigeon (*Columba palumbus*)
- Goldcrest (*Regulus regulus*)
- Coal Tit (*Periparus ater*)
- Great Tit (*Parus major*)
- Rook (*Corvus frugilegus*)
- Jackdaw (*Coloeus monedula*)
- Robin (*Erithacus rubecula*)
- Woodcock (*Scolopax rusticola*)

During the breeding ecological walkover, which was conducted on August 15th, 2024, the following birds were heard and seen by FFEC ecologists:

- Chaffinch
- Wren
- Song Thrush
- Woodpigeon
- Goldcrest

- Coal Tit
- Great Tit
- Rook
- Jackdaw
- Robin
- Magpie (*Pica pica*)

Woodcock was detected within the land ownership boundary of the Proposed Development on two occasions during the winter field assessments (see Figure 3-2). This species was recorded to the east of the red line boundary of the Proposed Development, and to the west of and within the western portion of the Proposed Development. Although the FFEC ecologists determined that there are potential suitable nesting habitats within the Proposed Development, no nests were observed during the field assessments and woodcock were not detected during the breeding season. As such, it is likely that the woodcock observed are a wintering population.

3.1.3.3 Mammals

According to the NBDC database, there are twelve species of mammals within 10km of the Proposed Development. Of which, six are either rare or protected, namely Eurasian Badger (*Meles meles*), Eurasian Pygmy Shrew (*Sorex minutus*), Eurasian Red Squirrel (*Sciurus vulgaris*), European Otter (*Lutra lutra*), Pine Marten (*Martes martes*), and West European Hedgehog (*Erinaceus europaeus*); and three are considered invasive, namely American Mink (*Mustela vison*), Eastern Grey Squirrel (*Sciurus carolinensis*), and European Rabbit (*Oryctolagus cuniculus*). A further three native, but not rare or protected, mammals were recorded within 10km of the Proposed Development, namely Irish Hare (*Lepus timidus* subsp. *hibernicus*), Irish Stoat (*Mustela erminea* subsp. *Hibernica*), and Red Fox (*Vulpes vulpes*). Due to the wooded landscape of the Proposed Development and the presence of hedgerows and treelines surrounding the Proposed Development, and the consequent linear connectivity of the Proposed Development to the wider environment, there is potential for these mammal species to utilise the Proposed Development.

Evidence of two mammal species was identified during field surveys of the Proposed Development, namely Badger and Otter.

Tracks and trails associated with badgers were located across all three surveys, however no setts were found. A dead male badger was also recorded near the local road to the south-east of the Proposed Development. No breeding or resting place for badger was detected within or adjacent to the red line boundary of the Proposed Development, and no latrines or indicators of territorial behaviour was identified. As such, it is likely that badger only utilize the habitats within the Proposed Development for commuting purposes.

Otter spraint was located over 150m to the east of the Proposed Development, alongside the Mill River, and to the west of the red line boundary of the Proposed Development during the first two surveys that were conducted in February, 2024. No evidence of otter activity was detected during the latest field assessment, which took place in August of 2024, and no breeding or resting places were detected during any of the field assessments. It is likely that this species uses the riparian zone along the Mill River, which is located at an average distance of over 150m to the east of the red line boundary of the Proposed Development.

No other mammal tracks or signs were found within the Proposed Development (Figure 3-2).

3.1.3.4 Bats

Five bat species, namely Common Pipistrelle (*Pipistrellus pipistrellus sensu stricto*), Daubenton's Bat (*Myotis daubentonii*), Lesser Noctule (*Nyctalus leisleri*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), and Pipistrelle (*Pipistrellus pipistrellus sensu lato*) were identified within the 10km grid square C33 surrounding the Proposed Development, according to the NBDC online database. Both Lesser Noctule and Soprano Pipistrelle were also recorded within the 2km grid square (C33V) that surrounds the Proposed Development.

The field assessments concluded that there are no tree features within the red line boundary of the Proposed Development of moderate or high suitability for bats, and no bats were identified.

3.1.3.5 Amphibians and Reptiles

There are no rare or protected amphibious or reptilian species recorded within 1km or 2km squares surrounding the Proposed Development.

However, frog spawn of the Common Frog (*Rana temporaria*) was found within the study area during the two ecological walkovers that occurred in February 2024. However, both sightings are located outside of the red line boundary of the Proposed Development (see Figure 3-2).

3.1.4 Invertebrates

There are two records of rare or protected invertebrates within the 2km grid squares (C32U and C22Q) that overlap the site.

Marsh Fritillary (*Euphydryas aurinia*) has been recorded 300m to the north, and 280m to the west of the Proposed Development, respectively.

Annex II species Marsh Fritillary is typically found within low, open swards of short, tussocky vegetation abundant with Devil's-bit-Scabious (*Succisa pratensis*). It is often found in areas cutover raised bog, wet heath, scrub and unimproved wet grassland. Devil's bit-Scabious was recorded within grassland habitats in small abundances within the landownership boundary of the Proposed Development. As the habitats within the Proposed Development predominantly comprise coniferous forestry and there are no dense stands of Devils-bit-Scabious within the Proposed Development, it is unlikely that this species utilizes the habitats within the Proposed Development.

Near threatened Small Heath is typically situated in areas of fine grass, and dry, well-drained habitats such as heathland and coastal dunes, as well as road verges, moorland and woodland rides. As the Proposed Development lacks such features, it is unlikely that Small Heath will use this site.

No evidence of rare or protected invertebrate species was detected during the field assessments.

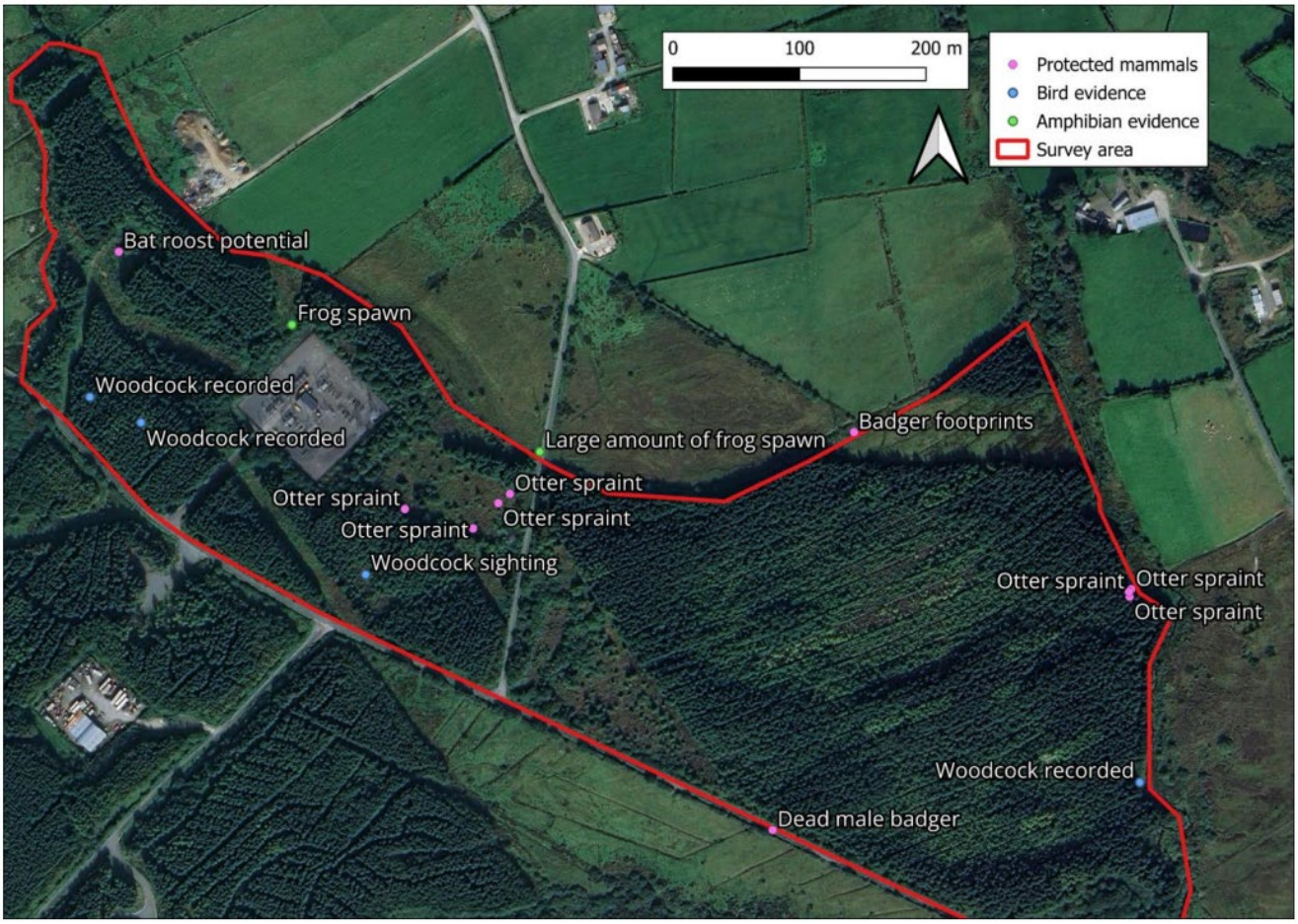

Figure 3-2: **Locations of protected species that were recorded during field assessments conducted by Flynn Furney Environmental Consultants in February 2024.**

3.2 Summary of Important Ecological Features

Table 3-2 details a summary of important ecological features identified within the red line boundary of the Proposed Development.

Table 3-2: Summary of Important Ecological Features Subject to Detailed Assessment

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and/or Importance
Habitats		
WD4 Conifer Plantation	Local	Not Protected Not part of Donegal County Biodiversity Action Plan
PB4 Cutover Bog	Local	Not Protected Not part of Donegal County Biodiversity Action Plan
BL3 Buildings and Artificial Surfaces	Local	Not Protected Not part of Donegal County Biodiversity Action Plan
Species		
Badger	Local	Protected under the Wildlife Acts
Bats	Local	Protected under the Wildlife Acts
Common Frog	Local	Protected under the Wildlife Acts
Otter	Local	Protected under the Wildlife Acts and Annex II and Annex IV of the EU Habitats Directive
Woodcock	Local	Protected under the Wildlife Acts and Annex II and Annex III of the EU Birds Directive Breeding population red-listed, however only wintering population within Proposed Development. Wintering population amber-listed.

4. ASSESSMENT OF EFFECTS AND MITIGATION MEASURES

4.1 European Sites

4.1.1 Potential Effects

A report to inform the Screening for Appropriate Assessment has been prepared in support of the planning application. This report assessed whether the Proposed Development, alone or in-combination with other plans or projects, is likely to have a significant effect on any European site(s).

The Appropriate Assessment Screening Report concluded that there are no likely significant effects associated with the Proposed Development on any European site, alone or in-combination with other plans or projects.

As the Proposed Development will not impact on any European site, the Proposed Development is in accordance with BIO-P-1 of the Donegal County Development Plan, whereby developments are required to not negatively impact any European site.

4.1.2 Mitigation Measures

Mitigation measures are not required.

4.1.3 Significance of Residual Effects

There are no residual effects.

4.2 Natural Heritage Areas, proposed Natural Heritage Areas, and Nature Reserves

4.2.1 Potential Effects

There is no potential for the Proposed Development to impact the NHAs, NHAs and Nature Reserves within the ZoI.

4.2.2 Mitigation Measures

Mitigation measures are not required.

4.2.3 Significance of Residual Effects

There will be no residual effects.

4.3 Habitats and Flora

4.3.1 Potential Effects

The habitats within the Proposed Development were not selected as Key Ecological Receptors, and as such there is no potential for the Proposed Development to effect these habitats. The design of the Proposed Development has ensured the maximum amount of coniferous habitat has been retained, to ensure there is sufficient available habitat for species such as woodcock and badger. This is in line with BIO-P-3 of the Donegal County Development Plan, whereby features of local biodiversity value that contribute to the biodiversity of the area are protected.

Additionally, no rare, protected, or invasive flora were recorded within the Proposed Development, and therefore there are no impacts in this regard.

In line with BIO-P-4 of the Donegal County Development Plan, the Proposed Development will not lead to the introduction or spread of invasive species. The Proposed Development will also involve management of the landscape features of the site so as to encourage pollinator friendly vegetation. This will have a positive effect on the local biodiversity, and is in line with BIO-P-3 and BIO-P-5 of the Donegal County Development Plan.

4.3.2 Mitigation Measures

General mitigation for site clearance is prescribed hereunder:

Article 19 of the Wildlife Act 1976 (as amended) provides for the protection of wild birds, their nests and eggs. It is an offence to wilfully take or remove the eggs or nest of a protected wild bird; to wilfully destroy, injure or mutilate the eggs or nest of a protected wild bird; and to wilfully disturb a protected wild bird on or near a nest containing eggs or unflown young. The nesting season for breeding birds in Ireland is between the 1st of March and 31st of August.

Under Article 22 of the Wildlife Act, 1976 (as amended) it is not an offense to unintentionally to kill or to injure a protected wild bird or to destroy, injure or mutilate the eggs or nest of a protected wild bird while carrying out building/construction works.

In the event that vegetation clearance is required during the bird breeding season, a pre-site clearance survey will be carried out by an ornithologist immediately prior to any vegetation clearing to identify any active nests within the site and avoid any contraventions of the Wildlife Act. Survey methodology will be as follows:

Ground-level transects through the areas to be cleared will be walked, searching for nests and nesting activity. Survey will be conducted in the morning as there is generally an increase in bird activity (e.g., territorial singing and foraging) during morning hours. While the composition and diversity of all bird species present on site will be recorded, the aim of the survey will be to identify any active nests / nesting behaviour. The survey area to be considered will be all lands to be cleared plus 50m beyond.

Nesting behaviour might include adults bringing food, adults carrying faecal sacs, sounds of young begging for food, adults giving alarm calls or exhibiting agitated behaviour.

In the event that a nest or suspected nest is observed, a nest buffer where no site clearance is permitted will be established. A minimum 30m buffer will be established. However, there may be cause to increase the size and shape of the buffer depending on type and amount of surrounding vegetation cover, species' sensitivity to disturbance, rareness of the species in the local/regional area, location relative to site topography, and the type and extent of clearing activities that will be occurring next to the buffer.

Any nests encountered will be documented as follows:

- The nest location (ITM co-ordinate)
- Habitat in which it occurs
- Bird species
- Number of eggs / young
- Nest status – active or inactive (i.e. birds have fledged)
- Adult behaviour at the nest e.g. incubating, building, distraction displays, alarm calls etc.

No clearing activities within the established buffer areas will be permitted to occur until after the Ornithologist has determined that nesting and fledging are complete, or if the status of the nest has been changed from active to inactive.

4.3.3 Significance of Residual Effects

There will be no residual effects.

4.4 Badgers

4.4.1 Potential Effects

Whilst there are no badger setts within the Proposed Development, under a precautionary basis, mitigation is prescribed below.

The below mitigation will be implemented, and is in line with BIO-P-2 of the County Donegal Development Plan, whereby species protected under the Wildlife Act - in this case, badgers - will be protected.

4.4.2 Mitigation Measures

A mammal survey will be carried out prior to construction works to reconfirm the findings of the ecology surveys.

In the event that a new badger sett should be encountered at any point, the NPWS will be informed and NRA Guidelines for the Treatment of Badgers Prior To the Construction of National Road Schemes will be followed. The sett will be assessed by an ECoW, and the type of sett will be determined. If badgers are to be excluded from a sett, the ECoW must ensure that there are alternative setts nearby that badgers can relocate to. One-way badger gates will then be installed at the sett entrance for at least 21 days from the last sign of badgers accessing the sett. Once the ECoW confirms that the badgers have been excluded from the sett, the sett should be destroyed immediately and securely proofed against re-entry.

4.4.3 Residual Effects

There will be no residual effects.

4.5 Bats

4.5.1 Potential Effects

Bats were not identified as a Key Ecological Receptor, and will not be effected by the Proposed Development.

4.5.2 Mitigation Measures

Mitigation measures are not required.

4.5.3 Significance of Residual Effects

There are no residual effects.

4.6 Common Frog

4.6.1 Potential Impacts

Removal of forestry drains could result in reduction of available habitat for common frog. However, the construction of a large wetland attenuation system as part of the Proposed Development Design will ensure no net loss of available habitat.

Potential for effect is most significant in the event that forestry drains are removed during spawning season which could result to removal of spawn, with a knock on effect on frog populations. It is of note that during field survey no spawning site were observed within the Proposed Development site, and that the two field records related to drains outside of the site boundary.

The Proposed Development has ensured the protection of this species, and is in accordance with BIO-P-2 of the Donegal County Development Plan, whereby species protected under the Wildlife Acts - in this case, common frog - are protected. Additionally, the biodiversity enhancement measure to create a wetland pond that may be used by this species is in line with BIO-P-3, whereby biodiversity enhancement measures are implemented.

4.6.2 Mitigation Measures

Where forestry drain removal or site clearance is to occur within the frog spawning season (February - March) or during the period where tadpoles may be in the drains (March – June) a pre-works survey will be carried out in accordance with the Herpetofauna Workers' Manual[8] to determine frog activity on the site. Where spawn or tadpoles are observed in the drains, the drains will be retained intact until froglets have moved away. If due to design/programme constraints, it is not feasible to delay drain removal, the spawn or tadpoles as the case may be will be translocated under licence from NPWS into suitable alternative habitat.

[8] Gent,T. & Gibson, S. (eds). 2003. Herpetofauna Workers' Manual (revised reprint), JNCC, Peterborough, ISBN 1 86107 450 6.

4.6.3 Significance of Residual Effects

Positive residual effect relating to habitat enhancement for common frog due to the proposed on-site wetland/pond.

4.7 Woodcock

4.7.1 Potential Impacts

The Proposed Development requires the clearance of c. 4.7 ha of conifer forestry out of a land bank of c.14 ha. This is located within a local context of adjoining conifer plantations c. 50 ha in area ranging in maturity from c. 20 years to 30 years and adjacent agricultural grasslands to the north and wet heath habitat to the south associated with nearby Mouldy Hill.

Woodcock have been recorded during winter field survey at the site and are likely wintering at this location. Woodcock use different habitats diurnally and nocturnally. At night they are associated with meadow / grassland type habitat where they feed. In the day they use scrub and forestry sites for cover and feeding. As such the mosaic of scrub/forestry and adjacent neutral grassland and heath at and adjacent to the Proposed Development provides suitable habitat for Woodcock.

Hoodles et al, 2020[9] identified that Woodcock show a strong site fidelity to winter (and breeding) sites. As such it is likely that this species will be present wintering in this area annually.

The effect of permanently removing 4.7 ha of conifer forestry from the Proposed Development site will likely not have a significant effect on wintering Woodcock at this location given the availability of alternative feeding and roosting habitat in the local environment.

There is potential for site clearance and construction stage activities to result in disturbance to wintering Woodcock. Having regard to '*Disturbance Distances in selected Scottish Bird Species – NatureScot Guidance*' a 500m potential disturbance zone is used (using disturbance distances for similar birds as a guide i.e. nightjar and corncrake). The habitats within 500m of the site comprise lands that are suitable to support Woodcock.

During the daytime Woodcock are most commonly associated with scrub / woodland habitat, whereas at night they move to more open habitats to feed. The Proposed Development has potential to cause disturbance to Woodcock from diurnal and nocturnal habitats given that working hours will be 07:00 to 19:00 Monday to Friday and 07:00 to 16:00 on Saturday, meaning that in Winter staff will be working in hours of darkness under artificial light.

As such there is potential for temporary disturbance to this species during the works as caused by noise, human presence and artificial lighting whereby site clearance and construction were to coincide with wintering season.

The significance of such an effect would likely be slight given that there is ample alternative available habitat for Woodcock in the immediate environs, particularly to the south of the Proposed Development site. However, mitigation is required in order to limit the potential for disturbance to Woodcock.

[9] 'Migration and movements of Woodcocks wintering in Britain and Ireland' (Hoodles et al, 2020). British Birds 113:256-278

4.7.2 Mitigation Measures

In the event that site clearance is to occur during Winter the following approach is required:

Site clearance will be carried out by a soft start such that Woodcock are encouraged to vacate the area in advance. This will ensure avoidance of accidental injury to birds.

All construction phase lighting will be directed to the works areas only and will be cowled away from adjacent lands (in particular the grassland to the north of the site) such that lighting spill at night does not splay into suitable Woodcock feeding areas. This will be advised by the EcOW as needed. This is particularly pertinent during construction of the access road given proximity to adjacent neutral grassland, whereas for the other areas of the site adjacent forestry will provide a level of natural screening.

4.7.3 Significance of Residual Effects

There will be no residual effects on Woodcock.

The site clearance at the Proposed Development will result in increased forestry edge and will include native woodland planting (c. 3350 sqm) along the 'cut and fill' embankments along the proposed site compound which will provide understory and fringe vegetation which is optimal habitat to act as cover for Woodcock.

4.8 Cumulative Effects

Cumulative impacts depend on species present, number and frequency of occurrence of fauna observed at the Proposed Development and at adjacent proposed and existing developments. The timing of the construction phase can also have a bearing on the magnitude of the impact. It is also dependent on distance from the proposed works in to other existing and proposed developments and the habitats present between same or their linkage to the Proposed Development site.

A cumulative impact arises from incremental changes caused by other past, present, or reasonably foreseeable actions together with the Proposed Development. The surrounding environment consists of coniferous forestry agricultural land and residential dwellings. The main damaging operations and threats to the greater region's ecological resources is (potentially) other developments.

4.8.1 Other Developments

A planning search was carried out (within the past five years) using the online planning enquiry system (https://www.eplanning.ie/DonegalCC/SearchTypes) of small-scale developments within 1 km of the Proposed Development. A full list of these projects is included in the below Table 4-2. These projects include single dwelling houses, and demolition of existing structures. None of these projects have any notable environmental effects beyond standard construction work.

An assessment was undertaken of all large-scale developments located within 15 km of the subject site, which concluded that there are no large-scale developments within 15km of the Proposed Development.

Therefore, there is no potential for cumulative impacts as a result from these developments.

Table 4-1: Planning applications for developments within 15km of the Proposed Development.

Planning Refernece	Status	Overview
1451065	Unconditional	ERECTION OF A DWELLING HOUSE WITH INTEGRATED GARAGE AND A SEWAGE TREATMENT SYSTEM AND ALL ASSOCIATED SITEWORKS
2150351	Conditional	(1) DEMOLITION OF EXISTING STONE WALL STEADS (2) ERECTION OF A DWELLING WITH WASTEWATER TREATMENT SYSTEM & PERCOLATION AREA, CONNECTION TO PUBLIC SERVICES AND ALL ASSOCIATED WORKS
2351003	Conditional	CONSTRUCTION OF A NEW ONE AND A HALF STOREY DETACHED DWELLING WITH ATTACHED GARAGE, PROPOSED NEW WASTEWATER TREATMENT PLANT AND PERCOLATION AREA, TOGETHER WITH ASSOCIATED SITEWORKS AND CONNECTION TO EXISTING SERVICES
2150444	Conditional	(1) DEMOLITION OF EXISTING DWELLING DUE TO DEFECTIVE MICA BLOCKWORK GRANTED UNDER PLANNING PERMISSION REF:10/70147 (2) ERECTION OF A REPLACEMENT DWELLING WITH CONNECTION TO EXISTING EFFLUENT TREATMENT PLANT AND SERVICES AND ALL ASSOCIATED SITE DEVELOPMEN
2151186	Conditional	DEMOLITION OF EXISTING DWELLING DUE TO DEFECTIVE MICA BLOCKWORK, ERECTION OF REPLACEMENT DWELLING WITH CONNECTION TO EXISTING SERVICES AND ALL ASSOCIATED SITE WORKS

4.8.2 Plans

County Donegal Development Plan 2024- 2030

The County Donegal Development Plan 2018-2024 includes numerous objectives and policies for the protection of wildlife and European sites, encouraging the appropriate assessment of potential effects from developments. The implementation of the policies and objectives of the County Development Plan in-combination with the design of the Proposed Development would have a positive effect for biodiversity in the local area.

The Development Plan has also included a dedicated Buncrana Area Plan, that includes the zoning of lands for various purposes including residential, business and enterprise, the environment, and community infrastructure. However, all zoned lands are located at a distance of over 2km to the north-east of the Proposed Development and are all small-scale developments. As such, the Proposed Development will not have any in-combination effects with such lands.

5. PROPOSED BIODIVERSITY ENHANCEMENTS

The following biodiversity enhancement measures shall be implemented.

5.1.1 Bird Boxes

Passerine Bird boxes will be placed at locations along the forestry/woodland periphery as per the instruction of the EcOW. Bird boxes that would attract birds of prey will not be used as that could increase Woodcock predation.

5.1.2 Wetland Pond

A wetland pond will be constructed within the southern portion of the Proposed Development, and will be used as a natural treatment system for the drainage system.

Surrounding the wetland, structures will be placed that will act as refuge sites for common frog during the winter period. Additionally, the wetland area itself will act as a spawning ground and habitat for this species, and other aquatic or amphibious species.

6. CONCLUSIONS

This Ecological Impact Assessment concludes that, given the scale and nature of the potential sources, there are no likely significant effects identified to any European sites. However, there will be likely significant effects to woodcock, whereby construction generated noise and lighting is likely to temporarily disturb woodcock from foraging and roosting habitats. Mitigation has been prescribed for this ecological feature, and there will be no residual effects as a result. Mitigation has also been prescribed for badger, under a precautionary basis as it is uncertain if there will be significant effects to this species. Additionally, biodiversity enhancement measures have been provided, including the implementation of bird boxes and a wetland pond.

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