

Ecological Impact Assessment Report

Neighbourhood 7 Longview

Ballyvolane

Cork

Report Prepared for Longview Estates Ltd

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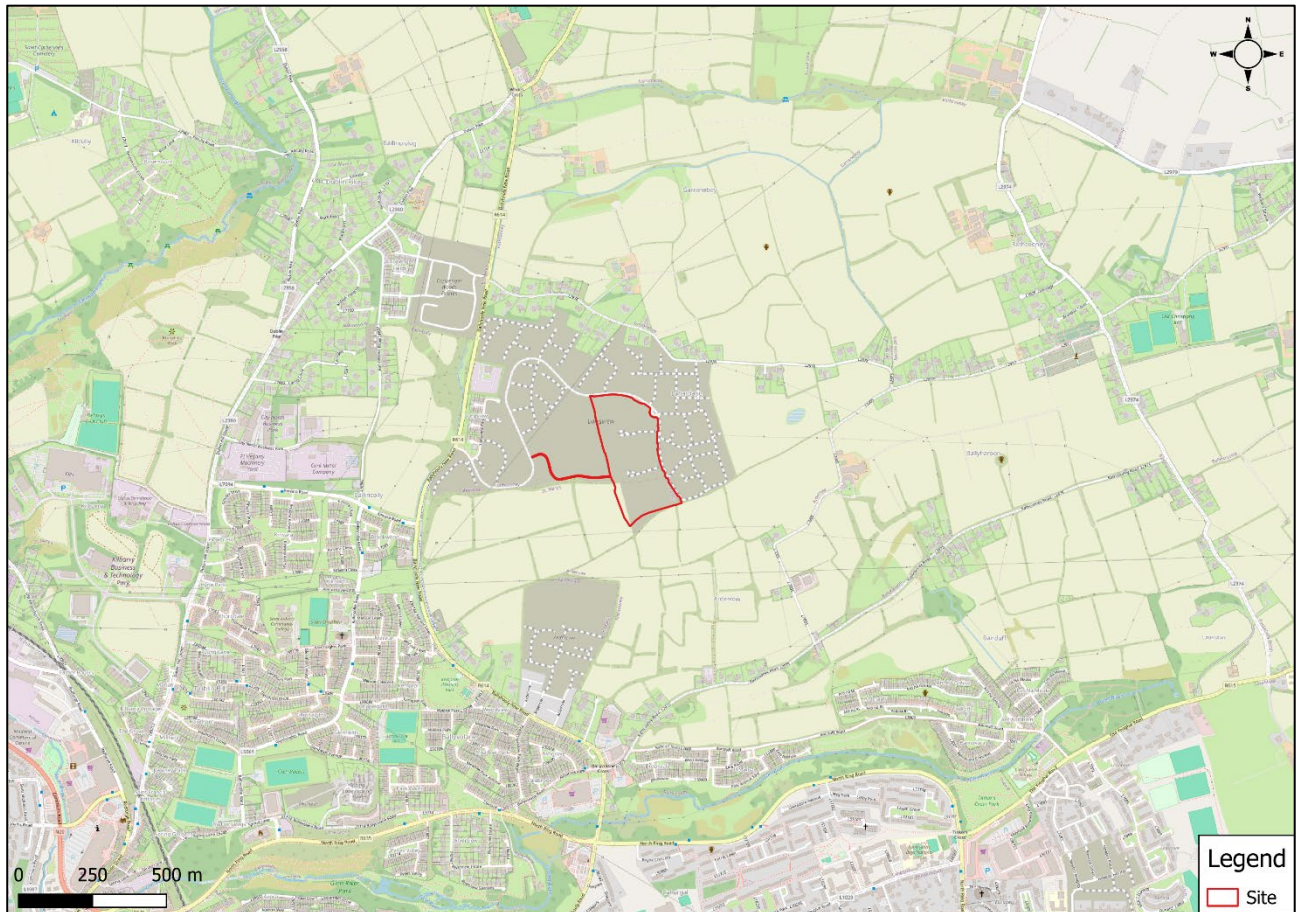
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1 Introduction

Greenleaf Ecology was commissioned by Longview Estates Ltd to undertake an Ecological Impact Assessment (EcIA) of the proposed Neighbourhood 7 Longview, Ballyvolane, Cork (hereafter referred to as the proposed development). The location of the proposed development is illustrated in Figure 1-1.

Figure 1-1: Site location map



The aims of this ecological impact assessment are to:

- Establish baseline ecological data for the proposed development site;
- Determine the ecological value of the identified ecological features;
- Identify, describe and assess the likely significant effects of the proposed development on biodiversity;
- Propose effective mitigation measures to avoid, prevent or reduce and, if possible, offset adverse effects on biodiversity; and
- Identify any residual effects predicted to arise after mitigation.

1.1 Statement of Competence

This ecological impact assessment was undertaken by Karen Banks, MCIEEM. Karen is an ecologist with Greenleaf Ecology and has 19 years' experience in the field of ecological assessment (terrestrial ecology). Karen holds a BSc (Hons) in Environment and Development from Durham University and is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Karen has extensive experience in the production of Ecological Impact Assessments (EcIA) including those for solar farms, transport

infrastructure, small to large scale housing and mixed-use developments, flood alleviation schemes and wind farms.

1.2 Description of the Proposed Development

Longview Estates Ltd. intend to apply for planning permission for a Large Scale Residential Development (LRD) at a site of c. 7.61 ha located at Laherdane, Ballyhooley Road, Cork City.

The development will provide for the construction of 262 no residential units (total GFA c. 22,860.5 sqm), comprising:

- i. 2 no. 4 storey apartment buildings (Blocks A & B) comprising 54 no. apartments (33 no. 1 bedroom & 21 no. 2 bedroom);
- ii. 3 no. 2-storey apartment buildings (Blocks C, D & E) comprising 14 no. 2-bedroom duplex apartments;
- iii. 194 no. houses in a mixture of 2-storey terraced, semi detached and mews end of terrace units (34 no. 4-bedroom, 136 no. 3-bedroom, 24 no. 2-bedroom); and
- iv. A proposed creche (c. 452.7m²)

The development will also include: vehicular access points to the east and north of the proposed site connecting to the constructed distributor road to the adjoining Longview Estates (permitted under ABP-306325-20 as amended by CCC Reg Ref 23/42409 / ABP-318904-24 and CCC Reg Ref 25/43863); all associated car parking, EV charging points, cycle parking and bin storage facilities; associated internal roads, pedestrian and cycle paths; public lighting; public open space (c. 12,637 sqm); communal amenity space; landscaping and boundary treatments; connection to public utilities; drainage and surface water management works including attenuation and swales; all ancillary site infrastructure; ESB sub stations and site development and excavation works above and below ground. The proposed development will be constructed in one phase or a series of phases in accordance with construction management plans.

1.2.1 Background

Presently under construction, the existing Longview Estates residential development consisting of 6 neighbourhoods was granted planning permission in 2020 and is located to the north, east and west of the proposed development.

1.2.2 Surface Water

The proposed development will include a number of SuDS measures where possible, including swales, and tree-pits. These measures will be backed by a series of concrete attenuation tanks providing a hard drainage solution for the development. Together, these elements provide conveyance, interception storage, and attenuation storage for rainwater runoff.

All surface water runoff from the paved development will be directed away from the site. The attenuation tanks are specifically designed to handle a 100-year storm event with 20% climate change. The maximum discharge from the attenuation tanks will be restricted to less than the calculated permissible runoff (QBAR) for the site.

Surface water collected on the building roofs will discharge via down pipes and underground pipes to the public stormwater network which will discharge to attenuation tanks.

Surface water runoff from paved surfaces will be collected by swales/tree pits or by drainage channels where it will be directed via road gullies to underground pipes/attenuation tanks before discharging off site.

The surface water drainage system for the proposed development will be separate to the foul water system.

Where possible, surface water will be drained by gravity directly to SuDs measures such as swales and tree pits located in public areas. These SuDs measures will be suitably sized using infiltration results. The remainder of runoff from roofs as well as the paved areas, roads etc will discharge to attenuation systems via a bypass interceptor or similar approved.

Runoff from the swales/tree pits will discharge directly into the ground during normal weather conditions with these measures incorporating a piped outflow connection to the attenuated drainage network where necessary for storm events. It is proposed to discharge the attenuated surface water flow by gravity into the constructed Longview Estates surface water network (present on the main distributor road) where it will ultimately discharge into the stream located to the west side of Ballyhooly Rd.

1.2.3 Foul Water

The foul network required for Neighbourhood 7 will tie into the Longview development foul network and be gravity fed to the new Irish Water pumping station. Uisce Éireann have confirmed feasibility of connection.

2 Methodology

2.1 Relevant Planning Policy and Legislation

This report has been prepared with regards to the following legislation, policy documents and guidelines as relevant:

- CIEEM (2017) Guidelines for Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester;
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester;
- DoEHLG (2010) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government;
- European Communities (2000) Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission;
- EC (2021) European Commission Notice Brussels C(2021) 6913 final 'Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC';
- EC (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission. European Commission;
- EC (2013) Interpretation Manual of European Union Habitats. Version EUR 28. European Commission;
- EPA (2022) Guidelines on the information to be contained in Environmental Impact Assessment Reports. Environmental Protection Agency;
- Fossitt, J., 2000. A Guide to Habitats in Ireland. The Heritage Council, Kilkenny;
- National Parks and Wildlife Service (NPWS) (2019) The Status of EU Protected Habitats and Species in Ireland. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht;
- NRA (2003) Guidelines for assessment of ecological impacts of National Road schemes. Revision 1 National Roads Authority, Dublin;
- NRA (2009) Guidelines for the Assessment of Ecological Impacts of National Road Schemes Rev. 2. National Roads Authority;
- NRA (2009) NRA Guidelines on Ecological Surveying Techniques for Protected Flora and Fauna on National Road Schemes). National Roads Authority; and
- NRA Environmental Assessment and Construction Guidelines (both adopted and draft versions)

Studies were also carried out in accordance with the following legislation:

- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) and Directive 2009/147/EC (codified version of Directive (79/409/EEC as amended (Birds Directive)) – transposed into Irish law as European Communities (Birds and Natural Habitats) Regulations 2011;
- European Communities (Environmental Impact Assessment) Regulations, 1989 to 2006;
- European Communities (Environmental Liability) Regulations, 2008 (S.I. No. 547 of 2008);
- European Communities (Quality of Salmonid Waters) Regulations, 1988 (S.I. No. 84 of 1988);
- Flora Protection Order, 2022;
- Planning and Development Act, 2000 (as amended);
- Water Framework Directive (2000/60/EC); and
- Wildlife Act 1976, as amended.

2.2 Desk Study

The sources of published material that were consulted as part of the desk study for the purposes of the ecological appraisal are as follows:

- Review of the National Parks & Wildlife Service (NPWS) natural heritage database for designated areas of ecological interest and sites of nature conservation importance within the site and its environs;
- Review of Ordnance Survey maps and ortho-photography;
- Review of the National Biodiversity Data Centre (NBDC) database for records of rare and protected species within a 0.5km radius of the site, including:
 - Annex I habitats, Annex II species and their habitats, and Annex IV species and their breeding sites and resting places (wherever they occur) as identified in the EU Habitats Directive;
 - The presence of species of flora and fauna as identified and strictly protected under the European Communities (Birds and Natural Habitats) Regulations, 2011;
 - Species of fauna and flora which are protected under the Wildlife Acts (Revised), ‘Protected species and natural habitats’ as defined in the Environmental Liability Directive (2004/35/EC) and European Communities (Environmental Liability) Regulations, 2008;
- Review of the NBDC database of records of bats within a 4km radius of the site ¹;
- 1:50,000 Ordnance Survey (OS) Map; Discovery Series; and
- Environmental Protection Agency mapping (<http://gis.epa.ie/Envision>).

2.3 Field Survey

A walkover survey of the proposed site was carried out by ecologist Ms. Karen Banks on 15th May 2024. Areas highlighted during the desktop assessment were investigated further, and a habitat survey was carried out. Habitats on site were classified in accordance with the Heritage Council publication ‘A Guide to Habitats in Ireland’ (Fossitt, 2000). The classification is a standard scheme for identifying, describing and classifying wildlife habitats in Ireland. The classification is hierarchical and operates at three levels, using codes to differentiate habitats based on the plant species present. Species recorded in this report are given both their Latin and common names, following the nomenclature as given in the ‘New flora of the British Isles’ (Stace, 2021).

Survey for invasive species was conducted during the habitat and botanical survey undertaken on 15th May 2024. This survey included the identification and mapping of Invasive Alien Species (IAS). This survey was conducted in accordance with the NRA publication “*Guidelines for the Management of Noxious Weeds and Non- Native Invasive Plant Species on National Roads*”.

The walkover survey conducted on 15th May 2024 included an assessment of the presence, or likely presence, of protected species. The survey was conducted in accordance with the standard protected species survey guidelines contained in the National Roads Authority (now Transport Infrastructure Ireland (TII)) publication ‘Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes’ (2008). The surveys were conducted for areas of habitat that might support protected mammals in addition to recording any field signs, such as well-used pathways, droppings, places of shelter and features or areas likely to be of particular value as foraging resources. Any badger setts present were recorded during the site walkover, along with potential pine marten den sites. In addition, the suitability of the habitat for pygmy shrew, hedgehog, hares, Irish stoat, pine marten, amphibians and invertebrates were recorded.

¹ A 4km radius search distance was selected to encompass records of bat roosts within Core Sustainance Zones (CSZ) of the site for Irish species of bat. A CSZ refers to the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the conservation status of the colony using the roost (Collins, 2016).

Following the results of the site walkover targeted mammal surveys were undertaken as detailed in Sections 2.3.1 to 2.3.3 below.

2.3.1 Badger Survey

A badger survey was conducted within the site on 15th May 2024 and 5th October 2024. The badger survey was conducted in accordance with Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (NRA, 2009).

Field signs of badger activity are characteristic and sometimes quite obvious and can include tufts of hair caught on barbed wire fences and scrub, conspicuous badger paths, footprints, small excavated pits or latrines in which droppings are deposited, scratch marks on trees, and snuffle holes, which are small scrapes where badgers have searched for insects and plant tubers (NRA, 2009).

Notes were made on signs of other mammals in order to deduce the likelihood of faint tracks and/or feeding signs belonging to badgers. The objectives of the badger survey were to:

- Confirm whether or not badger setts occur within the area surveyed.
- Confirm where possible the status of any setts identified in survey.
- Describe field signs of badger activity.

2.3.2 Bat Survey

Bat survey of the site was undertaken in May, July and October 2024 in accordance with the following guidelines:

- Andrews, H. (2018) *Bat Roosts in Trees*. A guide to identification and assessment for tree-care and ecology professionals. Pelagic Publishing.
- Collins, J. (ed.) (2023). *Bat Surveys for Professional ecologists: Good Practice Guidelines* (4th ed.). The Bat Conservation Trust, London; and
- Marnell, F., Kelleher, C. & Mullen, E. (2022) *Bat mitigation guidelines for Ireland v2*. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.

2.3.2.1 Preliminary Ecological Appraisal

A walkover survey of areas within the proposed site identified as potential roosting, foraging and commuting habitats during the desk top study was undertaken on 15th May 2024. Potential bat habitat was assessed using the criteria outlined in Table 2-1²

Table 2-1: Suitability of Habitats for Bats

Suitability	Description	
	Roosting habitats in structures	Potential flight paths and foraging habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/ suitable shelter at all ground/ underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/ protection for flight-lines, or generate/ shelter insect populations available to foraging bats).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however,

² Collins, J. (ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edn). The Bat Conservation Trust, London.

	element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats).	Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation- the categorisation described in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts e.g. maternity or classic cool/ stable hibernation site.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

2.3.2.2 Bat Roost Inspection Survey

A detailed inspection of the exterior of trees was undertaken during the site walkover undertaken on 15th May 2024 to ascertain whether any features that bats could use for roosting (Potential Roost Features, or PRFs) were present. The objective of the survey was to determine the actual or potential presence of bats to carry out an impact assessment and determine the need for further survey and/or mitigation.

A detailed inspection of each potential tree roost within the site was undertaken. The inspection was carried out in daylight hours from ground level, and information was compiled on the tree, PRFs and evidence of bats. Where PRFs were recorded, the tree was numbered and marked on a map and a description of each PRF observed was recorded. PRFs that may be used by bats include:

- Rot holes;
- Hazard beams;
- Other horizontal or vertical cracks or splits (e.g. frost cracks) in stems or branches;
- Lifting bark;

- Knotholes arising from naturally shed branches or branches previously pruned back to the branch collar;
- Man-made holes (e.g. flush cuts) or cavities created by branches tearing out from parent stems;
- Cankers in which cavities have developed;
- Other hollows or cavities;
- Double leaders forming compression forks with included bark and potential cavities;
- Gaps between overlapping stems or branches;
- Partially detached ivy with stem diameters in excess of 50mm; and
- Bat or bird boxes.

Signs of a bat roost (excluding the actual presence of bats), include:

- Bat droppings in, around or below a PRF;
- Odour emanating from a PRF;
- Audible squeaking at dusk or in warm weather; and
- Staining below the PRF.

It should be noted that bats or bat droppings are the only conclusive evidence of a roost and many roosts have no external signs. In the current survey, potential roost sites were viewed by a bat specialist working from ground level. Trees were categorised according to the highest suitability PRF present.

Structures

There are no buildings present within the proposed site.

2.3.2.3 Activity Survey

Bat surveys within the site were conducted by an experienced and licenced bat ecologist (Karen Banks) with cognisance of good practice guidelines, as noted in Section 2.4.3. Three dusk bat activity transects were conducted across the site on 23rd May, 16th July and 1st October 2024 using an Anabat Walkabout detector, which records bat echolocation calls directly on to an internal SD memory card. Anabat Swift static bat detectors were left in two different locations within habitat of high suitability for bats at the site for seven nights per transect survey to supplement the activity transect survey. The location of passive monitoring undertaken in 2024 is illustrated in Figure 2-1.

Figure 2-1: Ballyvolane LRD Amendment Application- location of passive monitors recording in May, July and October 2024



2.3.3 Bird Survey

A breeding bird survey of the study area was undertaken on 15th May and 2nd July 2024. A transect was walked around the perimeter of field boundaries at the site to take in to account suitable habitat areas as previously identified in the desktop study. All species that were seen or heard were recorded. All bird locations, numbers and behaviour were recorded by annotating field maps and taking notes. Breeding evidence such as singing males, agitated behaviour, carrying food and recently fledged young was recorded. The breeding status of all species encountered during surveys were classified into four categories: Confirmed (Br), Probable (Pr), Possible (Po) and Nonbreeder (N), based on British Trust for Ornithology (BTO) categories of breeding evidence, as detailed in Table 2-2. The survey was conducted under dry, calm and light weather conditions.

The conservation status of bird species recorded was considered in respect of the following: Birds of Conservation Concern in Ireland (BoCCI) Red, Amber and Green lists (see Gilbert *et al*, 2021) and EU Birds Directive Annex I list.

Table 2-2: BTO Categories of Breeding Bird Evidence

Breeding Status	Confirmed Breeder (Br)	Probable Breeder (Pr)	Possible Breeder (Po)	Non-Breeder (N)
Observed behaviours	Distraction display or injury feigning (DD)	Pair in suitable nesting habitat (P)	Observed in suitable nesting habitat (H)	Flying Over (F)
	Used nest or eggshells found from current season (UN)	Permanent Territory (T)	Singing Male (S)	Migrant (M)
	Recently fledged young or downy young (FL)	Courtship and Display (D)		Summering non-breeder (U)
	Adults entering or leaving nest site indicating occupied nest (ON)	Visiting probable nest site (N)		
	Adult carrying faecal sac or food for young (FF)	Agitated Behaviour (A)		
	Nest containing eggs (NE)	Brood patch of incubating bird (I)		
	Nest with young seen or heard (NY)	Nest Building or excavating nest hole (B)		

2.4 Impact Assessment Criteria

The information gathered from desk study and survey has been used to make an ecological impact assessment (EclA) of the proposed development upon the identified ecological features. The EclA has been undertaken following the methodology set out in CIEEM (2018). EclA is based upon a source-pathway-receptor model, where the source is defined as the individual elements of the proposed development that have the potential to affect identified ecological features. The pathway is defined as the means or route by which a source can affect the ecological features. An ecological feature is defined as the species, habitat or ecologically functioning unit of natural heritage importance. Each element can exist independently, however, an effect is created where there is a linkage between the source, pathway and feature.

A significant effect is defined in CIEEM (2018) as:

“an effect that either supports or undermines biodiversity conservation objectives for ‘important ecological features’.... or for biodiversity in general”.

Further, BS 42020:2013 states that if an effect is sufficiently important to be given weight in the planning balance or to warrant the imposition of a planning condition, e.g. to provide or guarantee necessary mitigation measures, it is likely to be “significant” in that context at the level under consideration. The converse is also true: insignificant effects would not warrant a refusal of permission or the imposition of conditions.

In relation to terrestrial ecology, the geographical reference used for ecological valuation follows NRA (2009) *Guidelines for the Assessment of Ecological Impacts of National Road Schemes Rev. 2.*, as detailed in Table 2-3.

Table 2-3: Geographical reference for ecological assessment

Ecological Valuation
International Importance: ‘European Site’ including Special Area of Conservation (SAC), Site of Community Importance (SCI), Special Protection Area (SPA) or proposed Special Area of Conservation. Proposed Special Protection Area (pSPA). Site that fulfils the criteria for designation as a ‘European Site’ (see Annex III of the Habitats Directive, as amended). Features essential to maintaining the coherence of the Natura 2000 Network. Site containing ‘best examples’ of the habitat types listed in Annex I of the Habitats Directive. Resident or regularly occurring populations (assessed to be important at the national level) of the following: Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or Species of animal and plants listed in Annex II and/or IV of the Habitats Directive. Ramsar Site (Convention on Wetlands of International Importance Especially Waterfowl Habitat 1971). World Heritage Site (Convention for the Protection of World Cultural & Natural Heritage, 1972). Biosphere Reserve (UNESCO Man & the Biosphere Programme). Site hosting significant species populations under the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals, 1979). Site hosting significant populations under the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats, 1979). Biogenetic Reserve under the Council of Europe. European Diploma Site under the Council of Europe. Salmonid water designated pursuant to the European Communities (Quality of Salmonid Waters) Regulations, 1988, (S.I. No. 293 of 1988).
National Importance: Site designated or proposed as a Natural Heritage Area (NHA). Statutory Nature Reserve. Refuge for Fauna and Flora protected under the Wildlife Acts. National Park. Undesignated site fulfilling the criteria for designation as a Natural Heritage Area (NHA); Statutory Nature Reserve; Refuge for Fauna and Flora protected under the Wildlife Act; and/or a National Park. Resident or regularly occurring populations (assessed to be important at the national level) of the following: Species protected under the Wildlife Acts; and/or Species listed on the relevant Red Data list. Site containing ‘viable areas’ of the habitat types listed in Annex I of the Habitats Directive.
County Importance: Area of Special Amenity. Area subject to a Tree Preservation Order. Area of High Amenity, or equivalent, designated under the County Development Plan. Resident or regularly occurring populations (assessed to be important at the County level) of the following: Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; Species protected under the Wildlife Acts; and/or Species listed on the relevant Red Data list. Site containing area or areas of the habitat types listed in Annex I of the Habitats Directive that do not fulfil the criteria for valuation as of International or National importance.

County important populations of species or viable areas of semi-natural habitats or natural heritage features identified in the National or Local BAP, if this has been prepared. Sites containing semi-natural habitat types with high biodiversity in a county context and a high degree of naturalness, or populations of species that are uncommon within the county. Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.
Local Importance (higher value): Locally important populations of Priority species or habitats or natural heritage features identified in the Local BAP, if this has been prepared; Resident or regularly occurring populations (assessed to be important at the Local level) of the following: Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; Species protected under the Wildlife Acts; and/or Species listed on the relevant Red Data list. Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality; Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value.
Local Importance (lower value): Sites containing small areas of semi-natural habitat that are of some local importance for wildlife; Sites or features containing non-native species that are of some importance in maintaining habitat links.

2.5 Survey Constraints

All surveys were conducted within the optimal survey period. No constraints on survey information gathered to inform this EclA are noted.

3 Receiving Environment

3.1 Designated Sites

A review of European designated sites within a 15km radius of the application site was undertaken (www.npws.ie). Special Areas of Conservation (SACs) are sites of international importance due to the presence of Annex I habitats and/or Annex II species listed under the EU Habitats Directive. Special Protection Areas (SPAs) are designated for birds based on the presence of internationally significant populations of listed bird species.

A review of nationally designated sites within a 10km radius of the application site was also undertaken. Natural Heritage Areas (NHAs) are sites deemed to be of national ecological importance and are afforded protection under the Wildlife Acts. Proposed Natural Heritage Areas (pNHA) have not been statutorily proposed or designated; however, they do have some protection under agri-environmental farm planning schemes such as Rural Environment Protection Scheme (REPS 3 and 4) and Agri Environmental Options Scheme (AEOS), Forest Service requirement for NPWS approval for afforestation grants in pNHA lands and recognition of the value of pNHAs by Planning and Licensing Authorities.

There are three European Sites within 15km of the proposed development. The proposed development boundary is located c.3.0km north-west of Cork Harbour SPA, c.7.0km north-west of Great Island Channel SAC and c.11.9km south of Blackwater River (Cork/Waterford) SAC. A review of nationally designated sites indicates that there are no Natural Heritage Areas within 10km of the proposed development. There are twelve pNHAs within 10km of the proposed development, four of which are also designated as European sites.

A list of European sites recorded within 15km of the proposed development is presented in Table 3-1 and a list of nationally designated sites within 10km of the proposed development is presented in Table 3-2.

European Sites are illustrated in Figure 3-1 and nationally designated sites are illustrated in Figure 3-2.

A Report to Inform Screening for Appropriate Assessment (Greenleaf Ecology, 2025), has been completed as a separate report and will be included as part of the planning application.

Table 3-1: European sites within 15km of the proposed development

Site Name and Code	Qualifying Interests	Distance from Proposed Development (km) ³	Connectivity
Great Island Channel SAC and pNHA (001058)	Annex I Habitats Mudflats and sandflats not covered by seawater at low tide (1140) Atlantic salt meadows (Glauco-Puccinellietalia maritimae) (1330)	7.0	There is potential remote connectivity during the operational phase via surface water outfall to the Ballincolly stream to the west of the site, which discharges into the Glen River, which in turn ultimately drains into the open waters of Cork Harbour.
Blackwater River SAC (002170)	Annex I Habitats Estuaries [1130]	11.8	There is no connectivity via surface water, groundwater or any other pathway.

³ Straight line distance from site boundary

	Mudflats and sandflats not covered by seawater at low tide [1140] Perennial vegetation of stony banks [1220] <i>Salicornia</i> and other annuals colonising mud and sand [1310] Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>) [1330] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260] Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) [91E0] Annex II Species <i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029] <i>Austropotamobius pallipes</i> (White-clawed Crayfish) [1092] <i>Petromyzon marinus</i> (Sea Lamprey) [1095] <i>Lampetra planeri</i> (Brook Lamprey) [1096] <i>Lampetra fluviatilis</i> (River Lamprey) [1099] <i>Alosa fallax fallax</i> (Twaiite Shad) [1103] <i>Salmo salar</i> (Salmon) [1106] <i>Lutra lutra</i> (Otter) [1355] <i>Trichomanes speciosum</i> (Killarney Fern) [1421]		
Cork Harbour SPA (004030)	Bird Species: Little grebe (<i>Tachybaptus ruficollis</i>) [wintering] Great crested Grebe (<i>Podiceps cristatus</i>) [wintering] Cormorant (<i>Phalacrocorax carbo</i>) [wintering] Grey heron (<i>Ardea cinerea</i>) [wintering] Shelduck (<i>Tadorna tadorna</i>) [wintering] Wigeon (<i>Anas penelope</i>) [wintering] Teal (<i>Anas crecca</i>) [wintering] Pintail (<i>Anas acuta</i>) [wintering] Shoveler (<i>Anas clypeata</i>) [wintering]	3.0km	There is potential remote connectivity during the operational phase via surface water outfall to the Ballincolly stream to the west of the site, which discharges into the Glen River, which in turn ultimately drains into the open waters of Cork Harbour.

	Red-breasted Merganser (<i>Mergus serrator</i>) [wintering] Oystercatcher (<i>Haematopus ostralegus</i>) [wintering] Golden Plover (<i>Pluvialis apricaria</i>) [wintering] Grey Plover (<i>Pluvialis squatarola</i>) [wintering] Lapwing (<i>Vanellus vanellus</i>) [wintering] Dunlin (<i>Calidris alpina</i>) [wintering] Black-tailed Godwit (<i>Limosa limosa</i>) [wintering] Bar-tailed Godwit (<i>Limosa lapponica</i>) [wintering] Curlew (<i>Numenius arquata</i>) [wintering] Redshank (<i>Tringa totanus</i>) [wintering] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [wintering] Common Gull (<i>Larus canus</i>) [wintering] Lesser Black-backed Gull (<i>Larus fuscus</i>) [wintering] Common Tern (<i>Sterna hirundo</i>) [breeding] Wetlands		
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Table 3-2: Nationally designated sites within 10km of the proposed development

Site Name and Code	Qualifying Features (Annex I Habitats/Annex II Species)	Distance from proposed works	Connectivity
Rockfarm Quarry, Little Island pNHA (001074)	Rock Farm Quarry is located c. 9km west of Cork City on Little Island in the River Lee estuary. The area is of considerable interest botanically because of its species diversity and the presence of 'rarities' for the region, such as the dense-flowered orchid and the Portland Spurge.	7.0km	There is no connectivity via surface water, groundwater or any other pathway.
Cork Lough pNHA (001081)	This small lake is situated in the north-west of Cork City, 1km. north of the River Lee. The site is a N.H.A. of local important for its bird community.	4.8km	There is no connectivity via surface water, groundwater or any other pathway.
Blarney Lake pNHA (001798)	This site is situated approximately 1km south west of Blarney, close to Blarney Castle. This site contains an interesting wetland community which is one of three closely situated rich and varied sites.	8.3km	The proposed site and this pNHA are situated in the same Groundwater Body ⁴ . However, review of local topography and WFD sub-catchment boundaries indicates that groundwater

⁴ <https://gsi.ie/Mapping.htm>

			would not flow from the site towards this pNHA. There is no connectivity via surface water, groundwater or any other pathway.
Ardamadane Wood pNHA (001799)	Ardamadane Wood is situated north of Blarney along the banks of the River Martin. This site comprises mainly dry deciduous woodland of Sessile Oak (<i>Quercus petraea</i>) and Downy Birch (<i>Betula pubescens</i>).	7.9km	The proposed site and this pNHA are situated in the same Groundwater Body. However, review of local topography and WFD sub-catchment boundaries indicates that groundwater would not flow from the site towards this pNHA. There is no connectivity via surface water, groundwater or any other pathway.
Dunkettle Shore pNHA (001082)	This site is located at the mouth of Glashaboy River, where it meets the Lee estuary, on the eastern edge of Cork city. It is adjacent to Glanmire Wood, N.H.A., and is an integral part of Cork harbour, which contains several other N.H.A.'s. The site is of value because its mudflats provide an important feeding ground for waterfowl and it acts as a significant roost for birds in the upper harbour. Furthermore, it is an integral part of Cork harbour which is an internationally important wetland, regularly holding flocks of over 20,000 waterfowl.	3.9km	There is potential remote connectivity during the operational phase via surface water outfall to the Ballincolly stream to the west of the site, which discharges into the Glen River, which in turn ultimately drains into the open waters of Cork Harbour.
Blarney Castle Woods pNHA (001039)	This site is situated approximately 1km south west of Blarney, in the grounds of Blarney Castle. The base rich woodland is an example of a habitat not widely found in Cork where acid uplands predominate.	8.2km	The proposed site and this pNHA are situated in the same Groundwater Body ⁵ . However, review of local topography and WFD sub-catchment boundaries indicates that groundwater would not flow from the site towards this pNHA. There is no connectivity via surface water, groundwater or any other pathway.
Blarney Bog pNHA (001857)	Blarney Bog is an area of fen situated in the flat valley floor of the River Blarney. The main habitats of the area are lowland wet grassland and freshwater marsh/ fen. The area as a whole is used by a variety of bird species.	5.6km	The proposed site and this pNHA are situated in the same Groundwater Body ⁶ . However, review of local topography and WFD sub-catchment boundaries indicates that groundwater

⁵ <https://gsi.ie/Mapping.htm>⁶ <https://gsi.ie/Mapping.htm>

			would not flow from the site towards this pNHA. There is no connectivity via surface water, groundwater or any other pathway.
Douglas River Estuary pNHA (001046)	This is a large site situated in the north-west corner of Cork Harbour, stretching from Blackrock to Passage West. It is an integral part of Cork Harbour, which contains several other N.H.A.'s. This site occurs within the upper harbour and consists of extensive mudflats, formed from fine silts, bisected by the Douglas River. Damp grassland occurs on part of the southern side, extending to some low islands which are inundated in extreme tides. This site is of interest because it is an essential part of the Cork Harbour complex and contains much higher densities of waders than would be expected from its relative size. It is ranked as the second most important area within the harbour.	3.7km	There is potential remote connectivity during the operational phase via surface water outfall to the Ballincolly stream to the west of the site, which discharges into the Glen River, which in turn ultimately drains into the open waters of Cork Harbour.
Glanmire Wood pNHA (001054)	Glanmire Wood occurs on the east bank of the Glashaboy River, immediately south of Glanmire village. The main habitat of interest is mixed broad-leaved woodlands dominated by oak (<i>Quercus</i> sp.), beech (<i>Fagus sylvatica</i>) and sycamore (<i>Acer pseudoplatanus</i>) with a few conifers. This site is of interest because this type of woodland is rare in east Cork.	3.0km	There is no connectivity via surface water, groundwater or any other pathway.
Lee Valley pNHA (000094)	This site occupies five separate sections of the valley of the River Lee, immediately to the west of Cork City. The diverse range of intact semi-natural habitats in the Lee Valley makes this a site of regional conservation importance.	6.2km	The proposed site and part of this pNHA are situated in the same Groundwater Body ⁷ . However, review of local topography and WFD sub-catchment boundaries indicates that groundwater would not flow from the site towards this pNHA. There is no connectivity via surface water, groundwater or any other pathway.
Shournagh Valley pNHA (000103)	This site includes two lower sections of the lower Shournagh River c. 8km west of Cork City. The woods along the Shournagh Valley included in this site are recommended for conservation and are noted to be of regional importance.	10.2km	The proposed site and this pNHA are situated in the same Groundwater Body ⁸ . However, review of local topography and WFD sub-catchment boundaries indicates that groundwater would not flow from the site towards this pNHA.

⁷ <https://gsi.ie/Mapping.htm>⁸ <https://gsi.ie/Mapping.htm>

				There is no connectivity via surface water, groundwater or any other pathway.
Great Channel (001058)	Island pNHA	See Great Island Channel SAC	6.7km	There is potential remote connectivity during the operational phase via surface water outfall to the Ballincolly stream to the west of the site, which discharges into the Glen River, which in turn ultimately drains into the open waters of Cork Harbour.

Figure 3-1: European sites within 15km of the proposed development

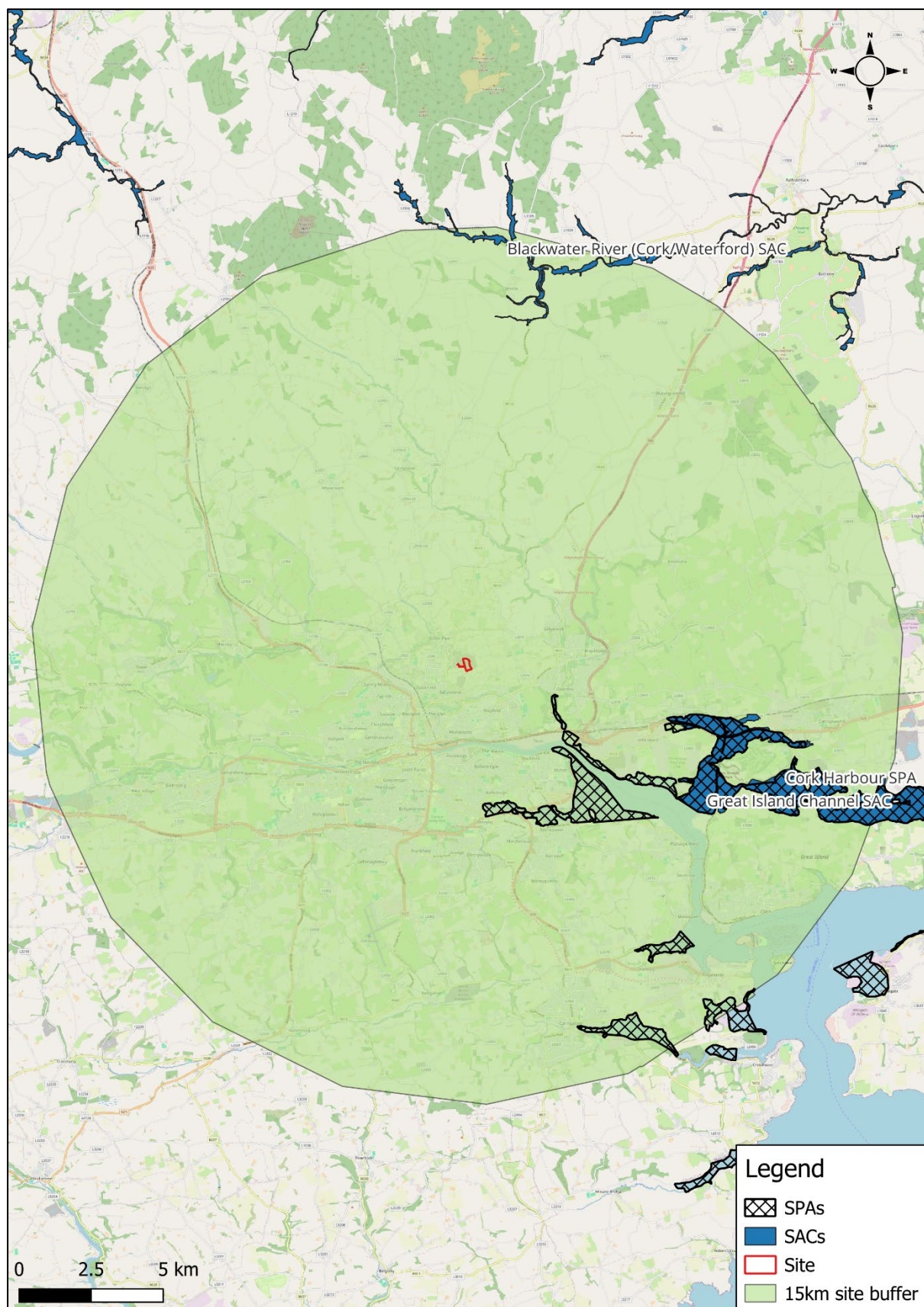
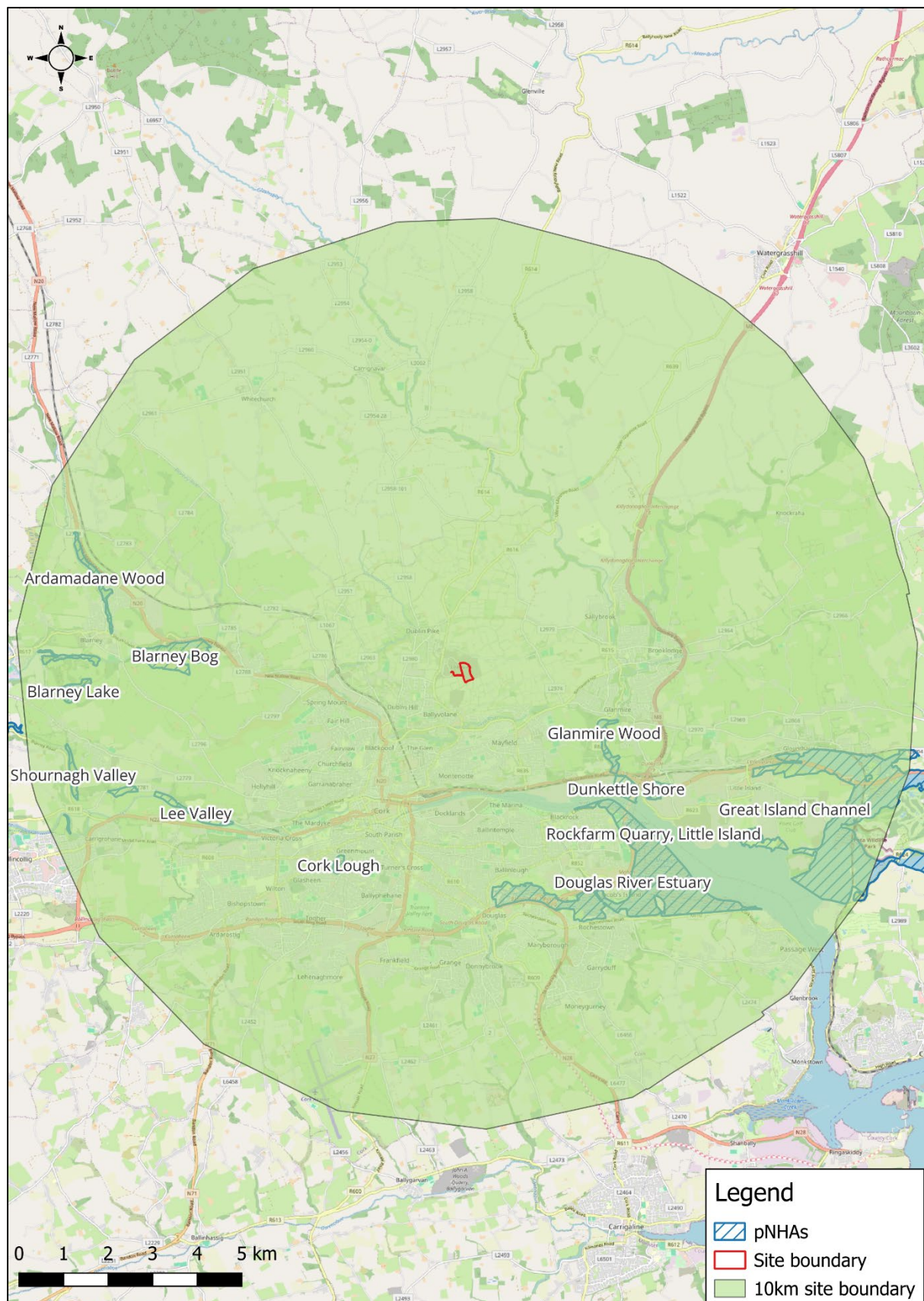


Figure 3-2: Nationally designated sites within 10km of the proposed development



3.2 Terrestrial Ecology

3.2.1 Habitats

Arable Crops (BC1)

An area of arable crops (BC1) comprising field beans is present at the south-west of the site. Common arable 'weed' species growing amongst the crop included False Oat-grass (*Arrhenatherum elatium*), Ragwort (*Senecio jacobaea*), Rosebay Willowherb (*Chamaenerion Angustifolium*), Annual Meadow-grass (*Poa annua*), Prickly Sow-thistle (*Sonchus asper*), Purple Ramping-fumituary (*Fumaria purpurea*), Field Pansy (*Viola arvensis*), Spear Thistle (*Cirsium vulgare*), Creeping Thistle (*C. arvense*), Scarlet Pimpernel (*Lysimachia arvensis*) and Dead Nettle (*Lamium purpureum*).

Spoil and bare ground (ED2)

Much of the site has been cleared and comprised bare ground at the time of survey.

Buildings and artificial surfaces (BL3)

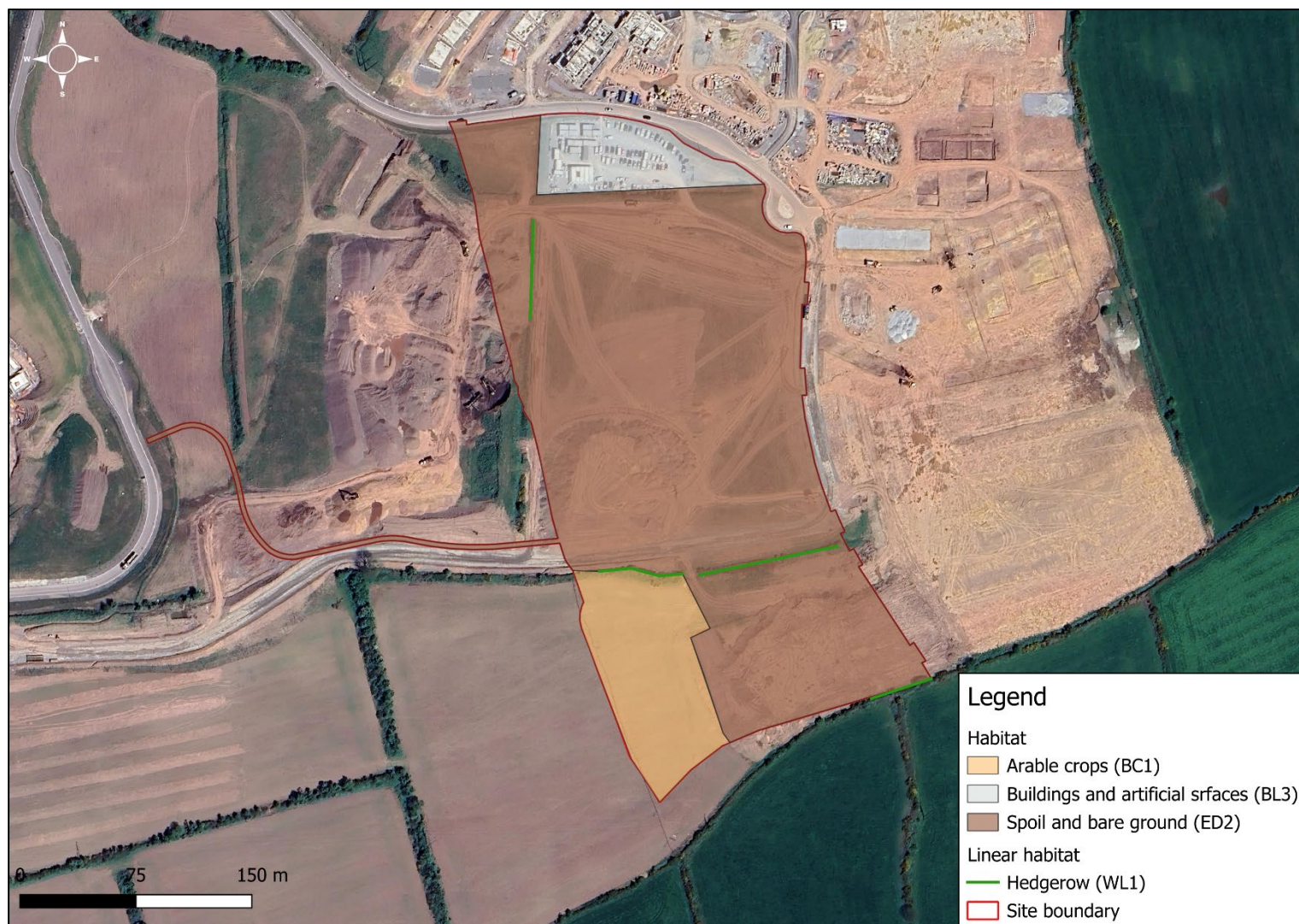
Buildings and artificial surfaces are present within the existing site compound at the north of the site.

Hedgerows (WL1)

The hedgerows at the proposed site are associated with earth and stone banks vegetated with species including Bramble (*Rubus fruticosus*), Honeysuckle (*Lonicera periclymenum*), Ivy (*Hedera helix*), grasses, Navelwort (*Umbilicus rupestris*), Wood Sage (*Teucrium scorodonia*) and mosses. The hedgerows are predominantly comprised of Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*) and Gorse (*Ulex europeaus*), with occasional Elder (*Sambucus nigra*). The hedgerows are of low species diversity and support several gaps.

The habitats recorded within the site are illustrated in Figure 3-3.

Figure 3-3: Neighbourhood 7 Longview: Habitat Map



3.2.2 Species

This section describes the species that have been recorded historically within 0.5km of the proposed development, presents results from site surveys and identifies the potential for the application site to support protected species. Species records extracted from the NBDC database are included in Appendix A.

3.2.2.1 Amphibians and Reptiles

The NBDC holds general records of common frog and smooth newt from the 10km OS grid square within which the site is located (W67), last recorded in 2003. However, there is no suitable habitat for breeding amphibians within the proposed site.

3.2.2.2 Avifauna

The NBDC hold records of sixteen species included in Annex I of the EU Bird's Directive from the environs of the study area, namely Bar-tailed Godwit, Kingfisher, Common Tern, Corn Crake, Dunlin, Golden Plover, Great Northern Diver, Hen Harrier, Little Egret, Little Gull, Mediterranean Gull, Merlin, Peregrine Falcon, Red-throated Diver, Short-eared Owl and Whooper Swan. Twelve BoCCI Red List species (Gilbert, G. *et al* (2021)) have been recorded from the environs of the study area: Barn Owl, Black-headed Gull, Common Redshank, Corn Crake, Eurasian Curlew, Golden Plover, Grey Partridge, Herring Gull, Northern Lapwing, Northern Shoveler, Red Knot and Yellowhammer.

The findings of the breeding bird survey completed within the site on 15th May and 2nd July 2024 are presented in Table 3-2. A total of nineteen bird species were recorded during the breeding bird survey. Three species considered to be of highest conservation priority (Red Listed), were observed during the surveys: Kestrel, Meadow Pipit and Yellowhammer. Two species of lesser conservation priority (Amber listed) were observed, namely Linnet and Swallow. The remaining fourteen species recorded are all of least conservation priority. Of the species recorded, none were confirmed as breeding within the proposed site or were considered to be probably breeding (as defined in Table 2-2).

The proposed development is located c.3.0km to the north-west of Cork Harbour SPA; no species of Special Conservation Interest (SCIs) for this SPA were recorded within the site during the breeding bird surveys undertaken in 2024.

Table 3-3: Summary of Bird Species Recorded and their Breeding and Conservation (BoCCI) Status

Common Name	Scientific Name	Conservation Status ⁹	Breeding Evidence
Black-backed Gull	<i>Larus marinus</i>	Green	N (F)
Blackbird	<i>Turdus merula</i>	Green	Po(H & S)
Blue Tit	<i>Cyanistes caeruleus</i>	Green	Po (H)
Chaffinch	<i>Fringilla coelebs</i>	Green	Po (H)
Dunnock	<i>Prunella modularis</i>	Green	Po(H & S)
Goldfinch	<i>Carduelis carduelis</i>	Green	Po (S)
Hooded Crow	<i>Corvus cornix</i>	Green	N (F)
Kestrel	<i>Falco tinnunculus</i>	Red	N (F)
Linnet	<i>Linaria cannabina</i>	Amber	Po (H)

⁹ Follows status attributed within Gilbert, G., Stanbury, A. & Lewis, L. (2021) Birds of Conservation Concern in Ireland 4: 2020–2026. Irish Birds 43, 1-22.

Meadow Pipit	<i>Anthus pratensis</i>	Red	Po (H)
Pheasant	<i>Phasianus colchicus</i>	Green	Po (H)
Robin	<i>Erithacus rubecula</i>	Green	Po (S)
Rook	<i>Corvus frugilegus</i>	Green	N (F)
Song Thrush	<i>Turdus philomelos</i>	Green	Po (H & S)
Stonechat	<i>Saxicola rubicola</i>	Green	Po (S)
Swallow	<i>Hirundo rustica</i>	Amber	N (F)
Wood Pigeon	<i>Columba palumbus</i>	Green	Po (H)
Wren	<i>Troglodytes troglodytes</i>	Green	Po (H & S)
Yellowhammer	<i>Emberiza citrinella</i>	Red	Po (H & S)

3.2.2.3 Flora

The NBDC database holds a historical record of the Flora Protection Order (FPO) species Meadow Barley (*Hordeum secalinum*) to the east of the proposed site in 10km Grid Square W77. This species grows in meadows and pastures, along roadsides and in river valley floodplains—it prefers sticky, clay soils¹⁰ and is unlikely to be present in the habitats present at the proposed site.

The FPO Section B (mosses) species *Entosthodon muhlenbergii*, *Scleropodium tourettii*, *Bryum intermedium* and *Orthotrichum pallens* have been recorded historically in the environs of the site. However, the intensively managed and disturbed habitats at the proposed site are unsuitable to support these species.

No rare or protected species of vascular plant, bryophyte or liverwort were recorded on the proposed site during the site walkovers or habitat survey.

3.2.2.4 Invasive Species

The NBDC database does not hold any records of invasive plant species from the proposed site and no invasive species were recorded during the site survey.

3.2.2.5 Invertebrates

The NBDC holds general records of Marsh Fritillary (*Euphydryas aurinia*) from 10km OS grid square W67, last recorded in 1990. Marsh Fritillary inhabits a range of different habitat types, but is mainly associated with wet grassland and heath habitat in Ireland. The habitats present on site are not suitable to support this species and no Devil's-bit Scabious (*Succisa pratensis*), which is the food plant of the caterpillar larvae, is present on site.

3.2.2.6 Bats

The review of existing records of bat species in the environs of the study area indicates that six of the ten known Irish species of bat have been recorded within a 4km radius of the study area (last checked November 2025). These bats include common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*P. pygmaeus*), Leisler's bat (*Nyctalus leisleri*), brown long-eared bat (*Plecotus auritus*), Daubenton's bat (*Myotis daubentonii*) and Natterer's bat (*M. nattereri*) as shown in Table 3-4 below. Of these species, Pipistrelle species and Leisler's bat have been recorded roosting within a 4km radius of the study area, outside of the planning application boundary.

¹⁰ Preston et al (2002) Species Status No. 7: The Vascular Plant Red Data List for Great Britain. JNCC.

Table 3-4: NBDC bat records from within a 4km radius of the study area.

Common Name	Scientific Name	Present	Known Roost (to OS 1km grid square)	Date of Last Record
Pipistrelle sp.	<i>Pipistrellus pipistrellus sensu lato</i>	✓	W7275	02/05/2014
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	✓	None	11/06/2021
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	✓	None	11/06/2021
Nathusius's Pipistrelle	<i>Pipistrellus nathusii</i>	x	n/a	n/a
Leisler's Bat	<i>Nyctalus leisleri</i>	✓	W6772	11/06/2021
Brown Long-eared Bat	<i>Plecotus auratus</i>	✓	None	11/06/2021
Daubenton's Bat	<i>Myotis daubentonii</i>	✓	None	11/06/2021
Whiskered Bat	<i>Myotis mystacinus</i>	x	n/a	n/a
Natterer's Bat	<i>Myotis nattereri</i>	✓	None	11/06/2021
Lesser Horseshoe Bat	<i>Rhinolophus hipposideros</i>	x	n/a	n/a
Brandt's Bat	<i>Myotis brandtii</i>	x	n/a	n/a

The bat landscape association model (Lundy et al, 2011) suggests that the proposed site is part of a landscape that is of moderate to high suitability for bats including common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*P. pygmaeus*), brown long-eared (*Plecotus auratus*), Leisler's (*Nyctalus leisleri*), Daubenton's (*Myotis daubentonii*), natterer's (*M. nattereri*) and whiskered bat (*M. mystacinus*). The proposed site and its environs are of low suitability for Nathusius' pipistrelle (*Pipistrellus nathusii*) and is outside of the distribution range for lesser horseshoe bat (*Rhinolophus hipposideros*) (Roche et al, 2014).

Bat Survey Results

No potential roosting habitat for bats was recorded within trees and shrubs at the proposed site. There are no structures present within the proposed site.

A total of four species were recorded on passive monitors (PMs) deployed in two different locations (Figure 2-1) within the site in 2024. The most frequently recorded species at the site was common pipistrelle; a similar amount of activity from soprano pipistrelle and Leisler's bat was recorded. A single Natterer's bat call was also recorded at the southern site boundary in July.

The highest level of activity was recorded at the southern site boundary across the seasons. A relatively high level of activity at the site was recorded in spring, however, a low level of activity was recorded in summer and autumn.

Table 3-5: Ballyvolane LRD amendment application- summary of bat passes recorded during monitoring undertaken in May, July and October 2024

Species	Spring (16th May -22nd May 2024)		Summer (2nd- 8th July 2024)		Autumn (1st- 5th October 2024)		Total
	PM1	PM2	PM3	PM4	PM5	PM6	
Common Pipistrelle	8,658	4,858	882	337	1,022	691	16,448 (57%)
Soprano Pipistrelle	2,147	3,679	223	122	419	133	6,723 (23%)
Pipistrelle Species							
Leisler's Bat	1,984	1,834	464	569	483	477	5,811 (20%)
Natterer's	0	0	1	0	0	0	1 (0%)
Total	12,789	10,371	1,570	1,028	1,924	1,301	28,983 (100%)

Bat Activity Survey

Three of the ten species of Irish bat were recorded in the site during the activity surveys undertaken in May, July and October 2024. Leisler's bat was the most frequently recorded species, followed by soprano and common pipistrelle in similar numbers. These species were recorded foraging and commuting primarily along the southern site boundary, with a lower level of activity recorded along a hedgerow running east-west across the site.

Evaluation of Survey Results

No potential roosting features were recorded within trees at the proposed site.

The survey results indicate that three species of bat regularly commute to the site to forage, namely soprano pipistrelle, common pipistrelle and Leisler's bat. A relatively high level of activity from these species was recorded at the site in spring, however activity levels in summer and autumn were low. The highest level of activity was recorded along the hedgerow at the southern site boundary. Overall, the site supports a moderate level of activity from a low diversity of bats.

3.2.2.7 Badger

The National Biodiversity Data Centre (NBDC) hold records of badger from c.0.6km to the north-east of the site, last recorded in 2007. No badger setts were recorded within the site during surveys undertaken for the permitted Ballyvolane Residential Development, however, badger droppings were recorded c.60m to the east of the site in 2018 indicating use of the site as part of the badger foraging territory. No evidence of badger was recorded within the proposed site during surveys undertaken between March and October 2024.

3.2.2.8 Other Mammals

Hedgehog, otter, sika deer, fallow deer and red squirrel have been recorded in the environs of the proposed site but there are no records of these species from within the footprint of the site. The habitats present on site are not suitable to support red squirrel, otter and deer; and would provide limited shelter for hedgehogs.

3.3 Summary of Ecological Evaluation

Table 3-6 summarises all identified ecological features within the study area. Ecological features have been identified as being at risk of potentially significant impacts via a source-pathway-receptor link. Important ecological features are valued as being of local ecological importance (higher value) or above as per the criteria set out in Table 2-3.

Table 3-6: Ecological Evaluation Summary

Site/Habitat/Species	Ecological Value ¹¹	Important Ecological Feature
European Site	International	Yes
Natural Heritage Area	National	Yes
Buildings and artificial surfaces (BL3)	Negligible. The built land present within the site is of little value to wildlife.	No
Arable crops (BC1)	Local importance (lower value). This habitat is not of botanical importance, however it does provide potential habitat for mammals and avifauna.	No
Spoil and bare ground (ED2)	Negligible. This habitat is highly disturbed and is of little value to wildlife.	No
Hedgerow (WL1)	Local importance (higher value). The hedgerows at the site are of low species diversity and are gappy. Nonetheless, this habitat provides connectivity within the landscape and potential foraging and shelter for avifauna and commuting and foraging areas for ground mammals and bats.	Yes
Amphibians & Reptiles	There no suitable habitat for breeding amphibians within the proposed site.	No
Avifauna	Three BoCCI Red list and two Amber list species have been recorded at the proposed site. Avifauna as they occur within the application site are considered to be of local importance (higher value)	Yes
Bats	The site supports a moderate level of activity from a low diversity of bats. Bats, as they occur within the proposed site, are considered to be of Local Importance (higher value).	Yes
Otter	The habitats at the proposed site are not suitable to support otter.	No
Badger	No evidence of badger setts or badger activity has been recorded within the proposed site and the habitats at the proposed site are of limited value for badger.	No
Other mammal species	No evidence of other mammal species was recorded within the proposed site and the habitats at the proposed site are not suitable to provide sustained support for protected mammal species.	No

¹¹ In accordance with NRA (2009) Guidelines for the Assessment of Ecological Impacts of National Road Schemes Rev. 2. National Roads Authority

4 Potential Impacts of the Proposed Development

This section identifies in detail the potential impact of the proposed development on habitats and species of conservation value (i.e. important ecological features as identified in Table 3-6) that have been identified as present, or that have the potential to be present, at the application site and its environs.

4.1 Construction Phase

The important ecological features that, in the absence of mitigation, may potentially be impacted by the construction phase of the proposed development and the significance of these impacts are set out in the following sections.

4.1.1 Designated Sites

As indicated in Table 3-1, there are three European Sites within 15km of the proposed development. The proposed development is located c.7.0km north-west of Great Island Channel SAC, c.11.8km from Blackwater River SAC and 3.0km from Cork Harbour SPA. A review of nationally designated sites indicates that there are twelve proposed Natural Heritage Area (pNHA)s within 10km of the proposed development.

An Appropriate Assessment Screening Report has been completed for the proposed development considering impacts to European Sites (SACs and SPAs) within the likely zone of influence (15km). The AA screening was informed by ecological site surveys (as detailed in Section 3 of this report) and desktop study. From the findings of the Screening exercise, it was concluded that:

“The proposed Neighbourhood 7 Longview, Ballyvolane, either alone or in-combination with other plans and/or projects, does not have the potential to significantly affect any European site, in light of their conservation objectives. Therefore, a Stage 2 Appropriate Assessment is deemed not to be required”.

Four of the pNHAs within 10km of the proposed development are also designated as part of European sites and so are considered within the Appropriate Assessment Screening Report. There are no connecting pathways between the proposed development and the remaining eight pNHAs, therefore there will be no significant effects on pNHAs as a result of the proposed development.

4.1.2 Habitats

4.1.2.1 Hedgerows

The proposed development will require the removal of 175 linear metres of hedgerow to facilitate the development; these proposals would result in a significant adverse effect on hedgerow habitat in the short-term. However, the landscaping proposals include the retention of 127 linear metres of hedgerow; these hedgerows are of low species diversity and contain a number of gaps, so it is proposed to enhance these hedgerows with in-planting of native species (as detailed in the landscaping plan accompanying the planning application). It is further proposed to plant 758 linear metres of hedgerow comprised of native species, resulting in a net gain of 583 linear metres in the medium to long-term as the planting matures.

It is further noted that the landscaping includes for the planting of native tree species within open space areas, street trees and ornamental pollinator trees; rain garden planting and wildflower meadow planting, to be comprised of native species of Irish origin is also proposed.

4.1.3 Species

4.1.3.1 Avifauna

There is potential for the loss of hedgerow species during construction of the proposed development to result in a reduction in nesting and foraging opportunities for nineteen species of bird recorded at the site, including three species of High Conservation Concern and two species of Moderate Conservation Concern and fourteen species that are of Least Conservation Concern as they are widespread and common in Ireland. However, the landscaping proposals include the planting of 758m hedgerow comprised of native species, which will provide a net gain of 583m hedgerow habitat in the medium to long-term as the planting matures.

If the hedgerow and tree removal is not timed appropriately, nests containing eggs or young chicks could be destroyed. This would be a short-term adverse effect, however it would not have an adverse effect at the population level (i.e. it would not be significant).

4.1.3.2 Bats

No potential roosting features for bats were recorded at the proposed site. Three species of bat commute to the site on a regular basis to forage i.e. soprano pipistrelle, common pipistrelle and Leisler's bat, Natterer's bat forages at the site occasionally. The loss of hedgerows and trees during construction can impact on commuting and foraging bats and may reduce the available insect prey species and reduce the feeding area available for bats. As detailed in Section 4.1.2.1, there will be removal of 175m hedgerow during construction. However, 127m hedgerow will be retained and enhanced, including the hedgerow to the south of the site where most of the bat activity was recorded. In view of these factors, it is considered that the removal of hedgerow would result in a short-term minor adverse effect on foraging and commuting bats at the local geographic scale. Further, as noted previously, the proposed landscaping will result in a net gain of 583m hedgerow habitat in the medium to long-term as the planting matures.

Temporary lighting required during the construction phase may cause disturbance to bats commuting through or feeding at the proposed site. In the absence of mitigation, disturbance of bats due to lighting would have a temporary significant adverse effect at the local geographic scale.

4.2 Operational Phase

The important ecological features that, in the absence of mitigation, may potentially be impacted by the operational phase of the proposed development and the significance of these impacts are set out in the following sections.

4.2.1 Designated Sites

During the operational phase, surface water will discharge to the Ballincolly stream, which ultimately flows into the open waters of Cork Harbour and Cork Harbour SPA and Great Island Channel SAC. However, the proposed development includes a number of SuDS measures and hard drainage solutions and treatment solutions (bypass interceptor) before discharge to Ballincolly stream. Feasibility of connection to the existing foul sewer network has been confirmed by Irish Water. No potential for likely effects on European or Nationally designated sites has been identified during the operational phase.

4.2.2 Habitats

No significant adverse impacts on habitats are anticipated during the operational phase.

As noted in Section 4.1.2.2, with the successful implementation of the landscape plan, there will be a net gain of 70m hedgerow in the medium to long term as the planting matures, plus planting of native tree species, wildflower meadow and rain gardens.

4.2.3 Species

4.2.3.1 Avifauna

No significant effects on avifauna are anticipated during the operational phase.

4.2.3.2 Bats

The street and domestic lighting proposed for the development will increase light levels within the proposed development area. Increased lighting may reduce the availability of feeding sites for bats and would be a long-term significant adverse effect at the local geographic scale, in the absence of mitigation.

5 Mitigation

5.1 Construction Phase

5.1.1 General

A Preliminary Construction Environment Management Plan (PCEMP) has been prepared for the proposed development (MHL, 2025). The Contractor appointed by Longview Estates Ltd to undertake the construction works shall be responsible for developing and managing the project specific CEMP, incorporating the methodologies described in the PCEMP. The project specific CEMP will detail how implementation of the environmental management and mitigation measures will be monitored.

A project ecologist will be appointed to advise on all ecological monitoring requirements.

The control measures for the proposed development will be in accordance with the following current best practice guidelines:

- H. Masters-Williams et al (2001) Control of water pollution from construction sites. Guidance for consultants and contractors (C532). CIRIA; and
- Murnane *et al* (2002) Control of Water Pollution from Construction Sites- Guide to Good Practice. SP156.

5.1.1.1 Control of Surface Water Run-off

The following measures are proposed during the construction phase to mitigate against potential risks to underlying soils and groundwater:

- All oils, solvents and paints used during construction will be stored within temporary bunded areas. Oil and fuel storage tanks will be stored in designated areas, and these areas will be bunded to a volume of 110% of the capacity of the largest tank/ container within the bunded area(s) (plus an allowance of 30 mm for rainwater ingress). Drainage from the bunded area(s) will be diverted for collection and safe disposal.
- Refueling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in a designated area. In the event of a machine requiring refueling outside of this area, fuel will be transported in a mobile double skinned tank. An adequate supply of spill kits and hydrocarbon adsorbent packs will be stored in this area. All relevant personnel will be fully trained in the use of this equipment.
- All ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline wastewaters or contaminated storm water to surface water and the underlying subsoil. The pouring of concrete will take place within a designated area using a geo-synthetic material to prevent concrete runoff into the soil/ groundwater media. Wash down and washout of concrete transporting vehicles will take place at an appropriate facility off site.
- Discharge from any vehicle wheel wash areas will be directed to on-site settlement ponds and will pass through a hydrocarbon interceptor prior to discharge.
- The construction compound will include adequate staff welfare facilities including foul drainage and potable water supply. Foul drainage discharge from the construction compound will be tankered off-site to a licensed facility if necessary, until a connection to the public foul drainage network has been established.
- The construction compound's potable water supply will be protected from contamination by any construction activities or materials in the instance that a temporary well has to be sunk.

- Spill Kits to be kept in designated areas.

5.1.2 Habitats

5.1.2.1 Hedgerows and Treelines

No hedgerow clearance or tree felling will occur during the bird breeding season from 1st March to 31st August.

Where any construction is required within close proximity of these trees, construction work will be undertaken in accordance with relevant guidelines in BS 5837:2012 “Trees in relation to design, demolition and construction” to ensure that is undertaken without significant impact. Retained trees will be adequately protected from damage throughout construction works.

It is further noted that where hedgerows are to be retained, they will be enhanced and augmented by planting with native species. It is also proposed to plant 758m of native hedgerows plus trees, with flowering varieties for pollinators.

5.1.3 Species

5.1.3.1 Avifauna

No hedgerow clearance or tree felling will occur during the bird breeding season from 1st March to 31st August.

Retained trees will be protected as detailed in Section 5.1.2.1. Loss of trees will be mitigated by the design of the proposed landscaping as summarised in Section 5.1.2.1 and detailed within the landscaping plan.

Bird boxes shall be installed in open space areas. These shall comprise of a mixture of box types to attract different species as follows:

- C. 7 no. bird boxes suitable for species such as tits.
- C. 7 no. open nest boxes suitable for wren, robin, blackbird and song thrush.

5.1.3.2 Bats

To minimise disturbance to bats and other fauna that are roosting/resting or active at night, construction operations during the hours of darkness will be kept to a minimum. If construction lighting is required during the bat activity period (April to September), lighting shall be directed away from all hedgerow/ treeline habitats to be retained. This can be achieved by using directional lighting (i.e. lighting which only shines on the proposed works and not nearby countryside) to prevent overspill. This shall be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only.

5.1.3.3 Invasive Species

No invasive species were identified on site during the site walkover. However, the following are recommended:

- Undertake further invasive species survey prior to the commencement of construction;
- In the event that any such species are identified an Invasive Species Management Plan shall be prepared and implemented by the Contractor. This shall include plant specific control measures for any invasive species identified; and

- Biosecurity measures will be undertaken to prevent the importation of invasive species from contaminated areas into the study area.
 - For any material entering the site, the supplier must provide an assurance that it is free of invasive species.
 - Machinery or plant to be inspected upon arrival and departure from site and cleaned when necessary.
 - Ensure all site users are aware of invasive species management plan and treatment methodologies. This can be achieved through “toolbox talks” before works begin on the site.
 - Adequate site hygiene signage should be erected in relation to the management of non-native invasive species material.

5.2 Operational Phase

5.2.1 Habitats

5.2.1.1 Hedgerows

No significant adverse effects on treelines have been identified during the operational phase, therefore no specific mitigation measures are required.

5.2.2 Species

5.2.2.1 Avifauna

No significant adverse effects on avifauna have been identified during the operational phase, therefore no specific mitigation measures are required.

5.2.2.2 Bats

The protection of dark refuges is essential for bats, particularly in urban and suburban areas. Careful design of the lighting will be important to ensure that the residential development does not create barriers for bats commuting and foraging at the site, while maintaining health and safety requirements for human use. This is particularly important for bat foraging/commuting habitat within, and at the edge of, retained hedgerow habitats at the site.

The following general principals will be followed in relation to the overall lighting plan for the proposed development site:

- Lighting design will be flexible and be able to fully take into account the presence of protected species. Therefore, appropriate lighting shall be used within the proposed development and adjacent areas with more sensitive lighting regimes deployed in wildlife sensitive areas, including the foraging areas for bats along hedgerows.
- Dark buffer zones will be used to separate habitats or features from lighting by forming a dark perimeter around them. This shall be used for habitat features noted as foraging and commuting areas for bats. Light spill onto foraging habitat (i.e. hedgerows) shall be avoided.
- Buffer zones will be used to protect dark buffer zones and rely on ensuring light levels (levels of illuminance measured in lux) within a certain distance of a feature do not exceed certain defined limits. The buffer zone can be further subdivided into zones of increasing illuminance limit radiating away from the feature or habitat that requires to be protected. This will apply along foraging habitat.

Luminaire design is extremely important to achieve an appropriate lighting regime. Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following will be considered when choosing luminaires. This is taken from the most recent BCT Lighting Guidelines (BCT, 2023).

- All luminaires used will lack UV elements to reduce impact.
- LED luminaires will be used due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (<2700 Kelvins) is recommended to reduce the blue light component.
- Light sources shall feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges.
- Column heights shall be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01.
- Luminaires shall always be mounted horizontally, with no light output above 90° and/or no upward tilt.
- Where appropriate, external security lighting shall be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate.
- The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.

For the proposed development, light spill onto the retained hedgerow to the south of the site will be avoided; this is the area with the highest level of recorded bat activity. Light spill onto other retained hedgerows and areas of woodland planting will be minimised as far as is practicable while maintaining health and safety requirements.

5.3 Residual Impacts

Hedgerows are considered to be of local importance (higher value) given their value to wildlife and biodiversity. The proposed development will require the removal of 175m hedgerow to facilitate the development. The hedgerow removal will result in a significant adverse effect in the short-term, however with the effective implementation of the landscaping proposals, including enhancement planting of retained hedgerows and the planting of 758m hedgerow, there will be a net gain of 583m hedgerow and native tree species at the site in the medium to long-term.

In the absence of mitigation, the proposals have the potential to impact on protected/notable species, through disturbance during the construction phase. However, with the successful implementation of

landscaping proposals for the site and the specific mitigation measures outlined in Section 5, no significant adverse residual impacts to fauna are anticipated.

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Appendix A

NBDC Records from within 0.5km of the proposed site

Species name	Date of last record	Designation
Common Frog (Rana temporaria)	05/02/2003	Annex V, Wildlife Acts
Smooth Newt (Lissotriton vulgaris)	30/06/1975	Wildlife Acts
Barn Owl (Tyto alba)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Red List
Barn Swallow (Hirundo rustica)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Bar-tailed Godwit (Limosa lapponica)	31/12/2011	Wildlife Acts, Annex I Bird Species, Birds of Conservation Concern - Amber List
Black-headed Gull (Larus ridibundus)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Red List
Black-legged Kittiwake (Rissa tridactyla)	29/02/1984	Wildlife Acts, Birds of Conservation Concern - Amber List
Black-tailed Godwit (Limosa limosa)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Brent Goose (Branta bernicla)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Canada Goose (Branta canadensis)	31/12/2011	High Impact Invasive Species, Invasive Species Regulation S.I. 477 (Ireland), Wildlife Acts
Common Coot (Fulica atra)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Common Goldeneye (Bucephala clangula)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Common Grasshopper Warbler (Locustella naevia)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Common Greenshank (Tringa nebularia)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Common Kestrel (Falco tinnunculus)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Common Kingfisher (Alcedo atthis)	31/12/2011	Wildlife Acts, Annex I Bird Species, Birds of Conservation Concern - Amber List
Common Linnet (Carduelis cannabina)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Common Pheasant (Phasianus colchicus)	31/12/2011	Wildlife Acts
Common Pochard (Aythya ferina)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Common Redshank (Tringa totanus)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Red List
Common Sandpiper (Actitis hypoleucos)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Common Shelduck (Tadorna tadorna)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Common Snipe (Gallinago gallinago)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List

Common Starling (Sturnus vulgaris)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Common Swift (Apus apus)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Common Tern (Sterna hirundo)	31/12/2011	Wildlife Acts, Annex I Bird Species, Birds of Conservation Concern - Amber List
Common Wood Pigeon (Columba palumbus)	31/12/2011	Wildlife Acts
Corn Crane (Crex crex)	31/07/1972	Wildlife Acts, Annex I Bird Species, Birds of Conservation Concern - Red List
Dunlin (Calidris alpina)	31/12/2011	Wildlife Acts, Annex I Bird Species, Birds of Conservation Concern - Amber List
Eurasian Curlew (Numenius arquata)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Red List
Eurasian Oystercatcher (Haematopus ostralegus)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Eurasian Teal (Anas crecca)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Eurasian Wigeon (Anas penelope)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Eurasian Woodcock (Scolopax rusticola)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
European Golden Plover (Pluvialis apricaria)	31/12/2011	Wildlife Acts, Annex I Bird Species, Birds of Conservation Concern - Red List
Gadwall (Anas strepera)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Garganey (Anas querquedula)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Goosander (Mergus merganser)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Great Black-backed Gull (Larus marinus)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Great Cormorant (Phalacrocorax carbo)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Great Crested Grebe (Podiceps cristatus)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Great Northern Diver (Gavia immer)	31/12/2011	Wildlife Acts, Annex I Bird Species
Greater Scaup (Aythya marila)	29/02/1984	Wildlife Acts, Birds of Conservation Concern - Amber List
Grey Partridge (Perdix perdix)	31/07/1991	Wildlife Acts, Birds of Conservation Concern - Red List
Grey Plover (Pluvialis squatarola)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Greylag Goose (Anser anser)	31/12/2011	Invasive Species Regulation S.I. 477 (Ireland), Wildlife Acts, Birds of Conservation Concern - Amber List
Hen Harrier (Circus cyaneus)	31/12/2011	Wildlife Acts, Annex I Bird Species, Birds of Conservation Concern - Amber List
Herring Gull (Larus argentatus)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Red List
House Martin (Delichon urbicum)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
House Sparrow (Passer domesticus)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Jack Snipe (Lymnocyptes minimus)	31/12/2001	Wildlife Acts

Lesser Black-backed Gull (Larus fuscus)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Little Egret (Egretta garzetta)	31/12/2011	Wildlife Acts, Annex I Bird Species
Little Grebe (Tachybaptus ruficollis)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Little Gull (Larus minutus)	29/02/1984	Wildlife Acts, Annex I Bird Species
Long-tailed Duck (Clangula hyemalis)	31/12/2011	Wildlife Acts
Mallard (Anas platyrhynchos)	31/12/2011	Wildlife Acts
Mediterranean Gull (Larus melanocephalus)	31/12/2011	Wildlife Acts, Annex I Bird Species, Birds of Conservation Concern - Amber List
Merlin (Falco columbarius)	29/02/1984	Wildlife Acts, Annex I Bird Species, Birds of Conservation Concern - Amber List
Mew Gull (Larus canus)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Mute Swan (Cygnus olor)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Northern Lapwing (Vanellus vanellus)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Red List
Northern Shoveler (Anas clypeata)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Red List
Northern Wheatear (Oenanthe oenanthe)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Peregrine Falcon (Falco peregrinus)	31/12/2011	Wildlife Acts, Annex I Bird Species
Red Kite (Milvus milvus)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Red Knot (Calidris canutus)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Red List
Red-breasted Merganser (Mergus serrator)	31/12/2011	Wildlife Acts
Red-throated Diver (Gavia stellata)	31/12/2011	Wildlife Acts, Annex I Bird Species, Birds of Conservation Concern - Amber List
Ringed Plover (Charadrius hiaticula)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Rock Pigeon (Columba livia)	31/12/2011	Wildlife Acts
Ruddy Duck (Oxyura jamaicensis)	31/12/2011	High Impact Invasive Species, Invasive Species EU Regulation No. 1143/2014, Invasive Species Regulation S.I. 477 (Ireland)
Sand Martin (Riparia riparia)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Short-eared Owl (Asio flammeus)	29/02/1984	Wildlife Acts, Annex I Bird Species, Birds of Conservation Concern - Amber List
Sky Lark (Alauda arvensis)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Spotted Flycatcher (Muscicapa striata)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Stock Pigeon (Columba oenas)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Tufted Duck (Aythya fuligula)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Water Rail (Rallus aquaticus)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Amber List
Whooper Swan (Cygnus cygnus)	31/12/2001	Wildlife Acts, Annex I Bird Species, Birds of Conservation Concern - Amber List

Yellowhammer (Emberiza citrinella)	31/12/2011	Wildlife Acts, Birds of Conservation Concern - Red List
Meadow Barley (Hordeum secalinum)	31/12/1845	Flora Protection Order
Marsh Fritillary (Euphydryas aurinia)	31/12/1990	Annex II
Entosthodon muhlenbergii	31/12/1835	Flora Protection Order 2015 Schedule B (Mosses)
Glass-wort Feather-moss (Scleropodium tourettii)	31/01/1876	Flora Protection Order 2015 Schedule B (Mosses)
Many-seasoned Thread-moss (Bryum intermedium)	31/12/1880	Flora Protection Order 2015 Schedule B (Mosses)
Pale Bristle-moss (Orthotrichum pallens)	31/12/1880	Flora Protection Order
Wilson's Pottia (Tortula wilsonii)	31/12/1872	Flora Protection Order
American Mink (Mustela vison)	31/12/1989	High Impact Invasive Species, Invasive Species Regulation S.I. 477 (Ireland)
Bank Vole (Myodes glareolus)	24/04/1990	Medium Impact Invasive Species
Brown Rat (Rattus norvegicus)	31/12/1968	High Impact Invasive Species, Invasive Species Regulation S.I. 477 (Ireland)
Eurasian Badger (Meles meles)	01/02/2007	Wildlife Acts
Eurasian Red Squirrel (Sciurus vulgaris)	24/04/1990	Wildlife Acts
European Otter (Lutra lutra)	24/04/1990	Annex II, Annex IV, Wildlife Acts
European Rabbit (Oryctolagus cuniculus)	31/12/1968	Medium Impact Invasive Species
Fallow Deer (Dama dama)	31/12/2008	High Impact Invasive Species, Invasive Species Regulation S.I. 477 (Ireland), Wildlife Acts
House Mouse (Mus musculus)	31/12/1968	High Impact Invasive Species
Sika Deer (Cervus nippon)	31/12/2008	High Impact Invasive Species, Invasive Species Regulation S.I. 477 (Ireland), Wildlife Acts
West European Hedgehog (Erinaceus europaeus)	31/12/1968	Wildlife Acts