

Old Connaught Phase A1 LRD

Ecological Impact Assessment (EclA)

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linClient:

Castlethorn Old Connaught UCL

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1 Introduction

Castlethorn Old Connaught UCL (hereafter referred to as “the Applicant”) proposes the development of lands at Old Connaught, located to the west of the M11 motorway, north of Old Connaught Avenue, within the administrative area of Dún Laoghaire-Rathdown County Council. The subject lands form part of the Central Character Area as identified in the Old Connaught Local Area Plan 2025 and comprise predominantly agricultural lands with associated hedgerows, treelines, woodland and local drainage ditches.

The potential for any impacts on sites designated as European (Natura 2000) sites, under the EU Habitats and Birds Directives was also appraised, and the results of that study are presented in a separate report (Appropriate Assessment Screening Report).

Brady Shipman Martin was appointed by the applicant to prepare this Ecological Impact Assessment report (EclA) in relation to the proposed development.

The Chartered Institute of Ecology and Environmental Management (CIEEM) defines EclA as follows (2022, p. 8):

“EclA is a process of identifying, quantifying and evaluating potential effects of development-related or other proposed actions on habitats, species and ecosystems¹. The findings of an assessment can help competent authorities understand ecological issues when determining applications for consent. EclA can be used for the appraisal of projects of any scale including the ecological component of Environmental Impact Assessment (EIA). When undertaken as part of an EIA, EclA is subject to the relevant EIA Regulations. Unlike EIA, EclA on its own is not a statutory requirement. It is an evaluation process undertaken to support a range of assessments.”

1.1 Expertise and Qualifications

This report has been prepared by Siddharth Sonny, Ecologist and Environmental Consultant at Brady Shipman Martin. He holds a bachelor’s degree in Zoology from the Sacred Heart College, Thevera, India and a master’s degree in Coastal and Marine Environment Science Policy and Practice from National University of Galway. He is an Associate Member of the Chartered Institute of Ecology and Environmental Management and is experienced in drafting and reviewing AA Screening Reports, EIA Screening Reports and SEA Screening Reports. He is also experienced in undertaking ecological surveys and preparing Ecological Impact Assessments Reports (EclA).

A technical review of this document has been completed by Senior Ecologist and Associate, Matthew Hague BSc MSc Adv. Dip. Plan. & Env. Law CEnv MCIEEM of Brady Shipman Martin. Matthew is a highly experienced and qualified ecologist, with a master’s degree in Ecosystem Conservation and Landscape Management. He has over 20 years of experience in ecological and environmental consultancy, across a wide range of sectors. Matthew is a Chartered Environmentalist (CEnv) and a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). Matthew has also completed an Advanced Diploma in Planning and Environmental Law, at King’s Inns and is a member of the Irish Environmental Law Association (IELA).

2 Methodology

2.1 Appraisal methodology

A comprehensive biodiversity assessment was undertaken by the author and other specialist ecologists between October 2025 and September 2026 of the proposed development site and its environs.

¹ Adapted from the definition originally published in Trewick (1999), *Ecological Impact Assessment* (Blackwell).

2.1.1 Biodiversity surveys

An initial site walkover (ecological survey) for the proposed development was undertaken by the author Siddharth Sonny and Ecologist Sadye Goldfarb of Brady Shipman Martin on 17 October 2025. This comprised a habitat survey as well as a survey for rare and/or protected plants, invasive species, mammals and bird survey. In addition, a preliminary bat and large mammal survey (suitability study) was undertaken by specialist bat ecologist Mr Brian Keeley and his team from Wildlife Surveys Ireland (WSI).

Since the initial walkover surveys were carried out additional, comprehensive biodiversity surveys have been undertaken, including a number of winter bird surveys, breeding bird surveys and a habitat and botanical survey, including a hedgerow classification survey (specialist botanist Mr Alexis Fitzgerald of Fitzgerald Ecology), as well as bat detector surveys, and large mammal surveys (WSI).

Since the initial walkover survey, comprehensive biodiversity surveys have been undertaken as follows:

Winter Bird Surveys (vantage point and transect walks):

- ☐ 28 November 2025
- ☐ 13 January 2026
- ☐ 10 February 2026
- ☐ 4 March 2026

Breeding Bird Surveys (vantage point and transect walks):

- ☐ 16 April 2026
- ☐ 15 May 2026
- ☐ 19 June 2026

Habitat and Botanical Survey:

- ☐ May 2026 – Hedgerow classification survey undertaken by specialist botanist Mr Alexis Fitzgerald of Fitzgerald Ecology

Bat and Ground Mammal Surveys (Wildlife Surveys Ireland):

Active Bat Transect Surveys:

- ☐ 22 October 2025 (evening transect survey)
- ☐ 23 October 2025 (dawn re-entry survey)
- ☐ 29 October 2025 (evening transect survey)
- ☐ 30 October 2025 (dawn re-entry survey)
- ☐ 11 May 2026 (evening survey)
- ☐ 12 May 2026 (dawn survey)
- ☐ 21 May 2026 (evening survey)
- ☐ 22 May 2026 (dawn survey)

Static Bat Detector Deployments:

- ☐ 22–30 October 2025 (nine nights of continuous monitoring)
- ☐ 21 May – 1 June 2026 (twelve nights of continuous monitoring)

Ground mammal field sign surveys were conducted concurrently during all bat survey visits between October 2025 and June 2026 to establish baseline conditions and seasonal activity patterns.

These survey reports are appended, and are referred to where appropriate in this report. Reference is also made to the CIEEM *Advice Note on the Validity of Ecological Reports & Surveys*². The surveys undertaken in 2026 provide comprehensive information on the biodiversity value of the site.

2.1.2 Additional desk-based research

This report has been prepared in accordance with the following **publications**:

- EPA Guidelines on the Information to be Contained in Environmental Impact Statements (EPA, 2002).
- EPA Guidelines on the Information to be Contained in Environmental Impact Assessment reports (EPA, 2022).
- Environmental Impact Assessment of Projects – Guidance on Screening (European Commission, 2017).
- OPR Practice Note PN02: Environmental Impact Assessment Screening (Office of the Planning Regulator (OPR) (2021).
- Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (European Commission, 2013).
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, August 2018).
- *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (Transport Infrastructure Ireland (formerly the National Roads Authority, 2009).
- *Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland: Terrestrial, Freshwater, Coastal and Marine* ('the CIEEM Guidelines') published by the Chartered Institute of Ecology and Environmental Management (CIEEM), September 2018, updated in September 2019 (V1.1), further updated in April 2022 (V1.2) and in August 2024 (V1.3).
- Commission of the European Communities (2013). *Interpretation manual of European Union Habitats EUR28*. Directorate-General for the Environment, European Commission.
- Fossitt, J.A. (2000). *A Guide to Habitats in Ireland*. The Heritage Council, Church Lane, Kilkenny, Ireland.
- Foulkes, N., Fuller, J., Little, D., McCourt, S. & Murphy, P. (2013). *Hedgerow Appraisal System: Best Practise Guidance on Hedgerow Surveying, Data Collation and Appraisal*. Report prepared for Woodlands of Ireland, Dublin.
- Kelleher Ecology Services (2021). *Ecological Hedgerow Appraisal & Evaluation of Pedestrian Connection Area Associated with a Proposed Residential Development Site at Ardarostig, Bishopstown, Cork*. Report prepared for HW Planning, on behalf of Ardstone Homes Ltd. Available at: <https://www.ardarostigplanning.ie/custom/public/files/ardarostig-residential-hedge-vegetationappraisal-rev-1-final.pdf>.
- National Roads Authority (2009). *Guidelines for Assessment of Ecological Impacts of National Roads Schemes*. Report for National Roads Authority.
- NPWS (2025). *The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitat Assessments*. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Dublin, Ireland.
- Smith, G.F., O'Donoghue, P., O'Hara, K. & Delaney, E. (2011). *Best Practice Guidance for Habitat Survey and Mapping*. The Heritage Council, Church Lane, Kilkenny, Ireland.
- Stace, C. (2019). *New Flora of the British Isles. 4th Edition*. C&M Floristics.

The proposed development complies with the following **legislative instruments**:

- The Planning and Development Act 2000 as amended (the "Planning Acts").
- The Wildlife Act 1976 to 2023 and the Wildlife (Amendment) Act 2000.
- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the "Habitats Directive").

² <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>

- Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (the “Birds Directive”).
- European Communities (Birds and Natural Habitats) Regulations 2011 as amended.
- Flora (Protection) Order 2022 (SI No. 235 of 2022).

The report has regard to the following **Policies and Plans**:

- Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (Inland Fisheries Ireland, 2016).
- Planning for Watercourses in the Urban Environment (Inland Fisheries Ireland, 2020).
- *All-Ireland Pollinator Plan 2026-2030* (National Biodiversity Data Centre).
- Ireland’s 4th National Biodiversity Action Plan (Department of Housing, Local Government and Heritage, 2024).
- Dún Laoghaire-Rathdown County Development Plan 2022 – 2028, including the accompanying Appropriate Assessment documentation (Natura Impact Report).
- Old Connaught Local Area Plan 2025 (Dún Laoghaire-Rathdown County Council)

Information collated from the sources listed below was also reviewed in the preparation of this report:

- Data on rare and protected plant and animal species contained in the following databases:
 - The National Parks and Wildlife Service (NPWS) of the National Parks and Wildlife Service (NPWS) of the Department of Housing, Local Government and Heritage: www.npws.ie.
 - The National Biodiversity Data Centre (NBDC) www.biodiversityireland.ie.
 - Birdwatch Ireland www.birdwatchireland.ie.
 - Bat Conservation Ireland www.batconservationireland.org.
- Recent aerial photography and photographs taken at the site.
- Recent and historic ordnance survey mapping (www.geohive.ie).
- Information on protected areas, as well as watercourses, catchments and water quality in the area available from EPA, <https://gis.epa.ie/EPAMaps/>.
- Information on soils, geology and hydrogeology in the area available from GSI, www.gsi.ie.
- Information on the Status of EU Protected Habitats and Species in Ireland (Article 17 report) (NPWS, December 2025).
- Information on land-use zoning from the online mapping of the Department of the Environment, Community and Local Government, <http://www.myplan.ie/en/index.html>.

As a result of the biodiversity surveys and research and given the habitats and species known to be present on the site and in the wider area, the amount of information gathered to date is sufficient to allow a comprehensive understanding of the potential impacts of any proposed development at the site on biodiversity and related receptors.

2.2 Evaluation of ecological features

The methodologies used to determine the value of ecological resources, to characterise impacts of the proposed development and to assess the significance of impacts and any residual effects are in accordance with the NRA (TII) *Guidelines for Assessment of Ecological Impacts of National Road Schemes*³. This is consistent with the approach taken in the CIEEM *Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland – Terrestrial, Freshwater, Coastal and Marine*.

³ NRA (TII), 2009. Guidelines for Assessment of Ecological Impacts of National Road Schemes. National Roads Authority

In accordance with the NRA (TII) Guidelines, impact assessment is undertaken of sensitive ecological receptors (Key Ecological Receptors) within the Zone of Influence (Zol) of the proposed project. According to the guidelines, the Zone of Influence is the 'effect area' over which change resulting from the proposed project is likely to occur and the Key Ecological Receptors are defined as features of sufficient value as to be material in the decision-making process for which potential impacts are likely. As noted in the guidelines, the following geographic frames of reference are used when determining ecological value:

- International Importance.
- National Importance.
- County Importance.
- Local Importance (Higher Value).

In the context of the proposed development site, a Key Ecological Receptor is defined as any feature valued between Local Importance (Higher Value), such as sites containing semi-natural habitat types with high biodiversity in a local context, or populations of species that are uncommon in the locality or sites or features containing common or lower value habitats, including naturalised species that are essential in maintaining links and ecological corridors between features of high ecological value, and International Value (such as a European site).

Features of local importance (Lower Value) and features without ecological value are not considered to be Key Ecological Receptors in this context.

3 Baseline environment

3.1 General description of the Study Area and Receiving Environment

The proposed Phase A1 development site is located north of Old Connaught Avenue within the administrative area of Dún Laoghaire Rathdown County Council. The site is bounded by the M11 motorway to the east, Ferndale Road to the west, and Allies River Road to the north.

The lands comprise predominantly agricultural fields in arable use and associated boundary features. Topographically the site rises gradually from east to west.

There is existing residential development adjacent to the site including the Ferndale Court development to the north and Old Connaught House (a Protected Structure) to the west. The Festina Lente lands are located to the southwest of the proposed development site.

Woodland belts, treelines and hedgerows are present along field boundaries and adjoining lands. There are no watercourses as mapped in the EPA database, however there are minor drainage ditches/ streams present along the field boundaries including a ditch referred to as the Old Connaught Tributary in the LAP Document.

The location of the subject site is shown in **Figure 3.1**.



Figure 3.1 The proposed development at Old Connaught (refer to the drawings prepared by OMP, the project architects, for full details)

3.2 Designated conservation areas

This assessment uses a source-pathway-receptor model to assess environmental risk. For the risk of an adverse effect to occur there must be a 'source', such as a construction site; a 'receptor', such as a site designated for nature conservation; and a 'pathway' between the source and the receptor, such as a watercourse that links the construction site to the proposed development site. Although there may be a risk of an impact, it may not necessarily occur, and if it does occur, it may not be significant.

3.2.1 European Sites

The potential for any impacts on European sites from the proposed development site was considered. Full details of that study are presented in a stand-alone report (Appropriate Assessment Screening Report, Brady Shipman Martin, 2026), submitted as part of this application under separate cover.

The site of the proposed development is not under any designation for nature conservation. There are no European sites within the immediate vicinity of the proposed development site at Old Connaught – the closest is just over 1km distant.

The nearest sites are as follows (see also **Figure 3.2**):

- Special Areas of Conservation (SACs)
 - Ballyman Glen SAC (site code 000713), c.1.1km to the west.
 - Bray Head SAC (site code 000714), c.2.8km to the south east.
 - Knocksink Wood SAC (site code 000725), c.2.8km to the west.
 - Rockabill to Dalkey Island SAC (site code 003000), c.4.2km to the north east.
 - Wicklow Mountains SAC (site code 002122), c.5.9km to the west.
 - Glen of the Downs SAC (site code 000719), c.7.3km to the south.
 - South Dublin Bay SAC (site code 000210), c.8.9km to the north.
 - Carriggower Bog SAC (site code 000716), c.11.4km to the south.
 - The Murrough Wetlands SAC (site code 002249), c.11.8km to the south east.
 - North Dublin Bay SAC (site code 000206), c.14.3km to the north.
 - Glenasmole Valley SAC (site code 001209), c.14.4km to the west.
 - Howth Head SAC (site code 000202), c.16.3km to the north east.
 - Baldoyle Bay SAC (site code 000199), c.19.5km to the north.
- Special Protection Areas (SPAs)
 - Wicklow Mountains SPA (site code 004040), c.6.3km to the west.
 - Dalkey Islands SPA (site code 004172), c.6.4km to the north east.
 - South Dublin Bay and River Tolka Estuary SPA (site code 004024), c.8.8km to the north.
 - The Murrough SPA (site code 004186), c.9.7km to the south east.
 - North-west Irish Sea SPA (site code 004236), c.14.1km to the north.
 - North Bull Island SPA (site code 004006), c.14.3km to the north.
 - Howth Head Coast SPA (site code 004113), c.16.6km to the north east.
 - Baldoyle Bay SPA (site code 004016), c.19.5km to the north.

The Conservation Objectives of these sites are to maintain or restore the favourable conservation condition of the QIs / SCIs in question. Where specific conservation objectives have been set out by the NPWS, 'favourable conservation condition' is defined in respect of specific attributes and targets for the habitat or species in question. For further information, to the standalone AA Screening Report.

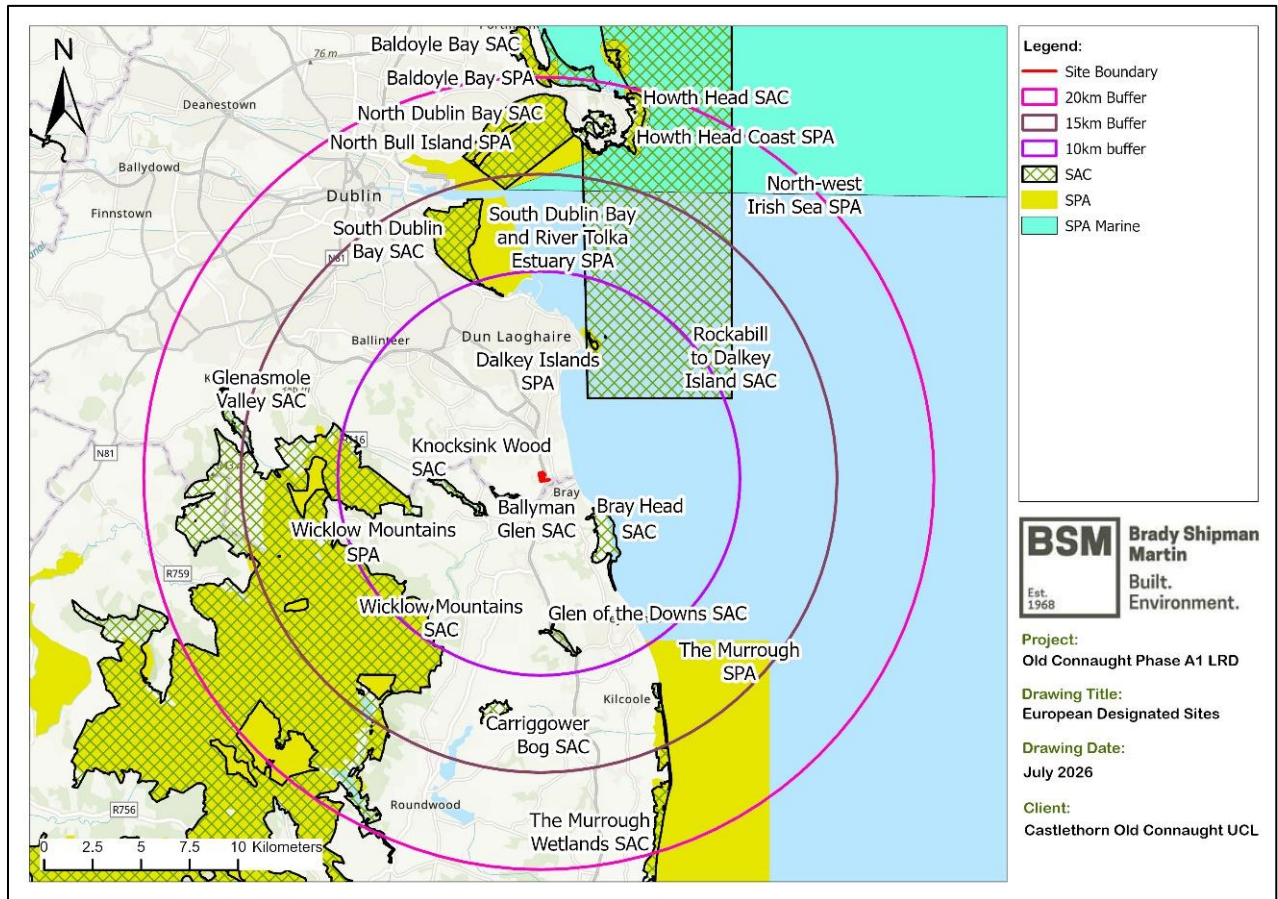


Figure 3.1 - European sites within potential zone of influence of the proposed development at Old Connaught. 15, 10 and 20 km radii are shown for scale.

3.2.2 Other Designated Areas (other than European sites)

Designated Sites other than European sites (i.e. Proposed Natural Heritage Areas (pNHA) and designated Natural Heritage Areas (NHA)) are included in this assessment in order to address their potential to act as supporting sites for the European sites. There are no fully designated NHAs within the zone of influence. The pNHAs within the immediate vicinity include:

- Ballyman Glen pNHA (site code 000713), c.1.1km to the south west.
- Dargle River Valley pNHA (site code 001754), c.2.6km to the south west.
- Bray Head pNHA (site code 000714), c.2.8km to the south east.
- Loughlinstown Woods pNHA (site code 001211), c.2.8km to the north.
- Knocksink Wood pNHA (site code 00725), c.2.8km to the west.
- Powerscourt Woodland pNHA (site code 001768), c.3.3km to the south west.
- Dalkey Coastal Zone and Killiney Hill pNHA (site code 001206), c.3.4km to the north east.
- Dingle Glen pNHA (site code 001207), c.3.8km to the north.
- Great Sugar Loaf pNHA (site code 001769), c.3.9km to the south.
- Ballybetagh Bog pNHA (site code 0012020), c.4.1km to the west.
- Kilmacanoge Marsh pNHA (site code 000724), c.4.7km to the south.
- Glenree Valley pNHA (site code 001755), c.6.3km to the west.
- Powerscourt Waterfall pNHA (site code 001767), c.7.3km to the south west.
- Glen of the Downs pNHA (site code 000719), c.7.4km to the south.
- Fitzsimon's wood pNHA (site code 001753), c.8.7km to the north west.
- South Dublin Bay pNHA (site code 000210), c.8.8km to the north.

Note that the above-listed distances are linear (i.e. 'as the crow flies').

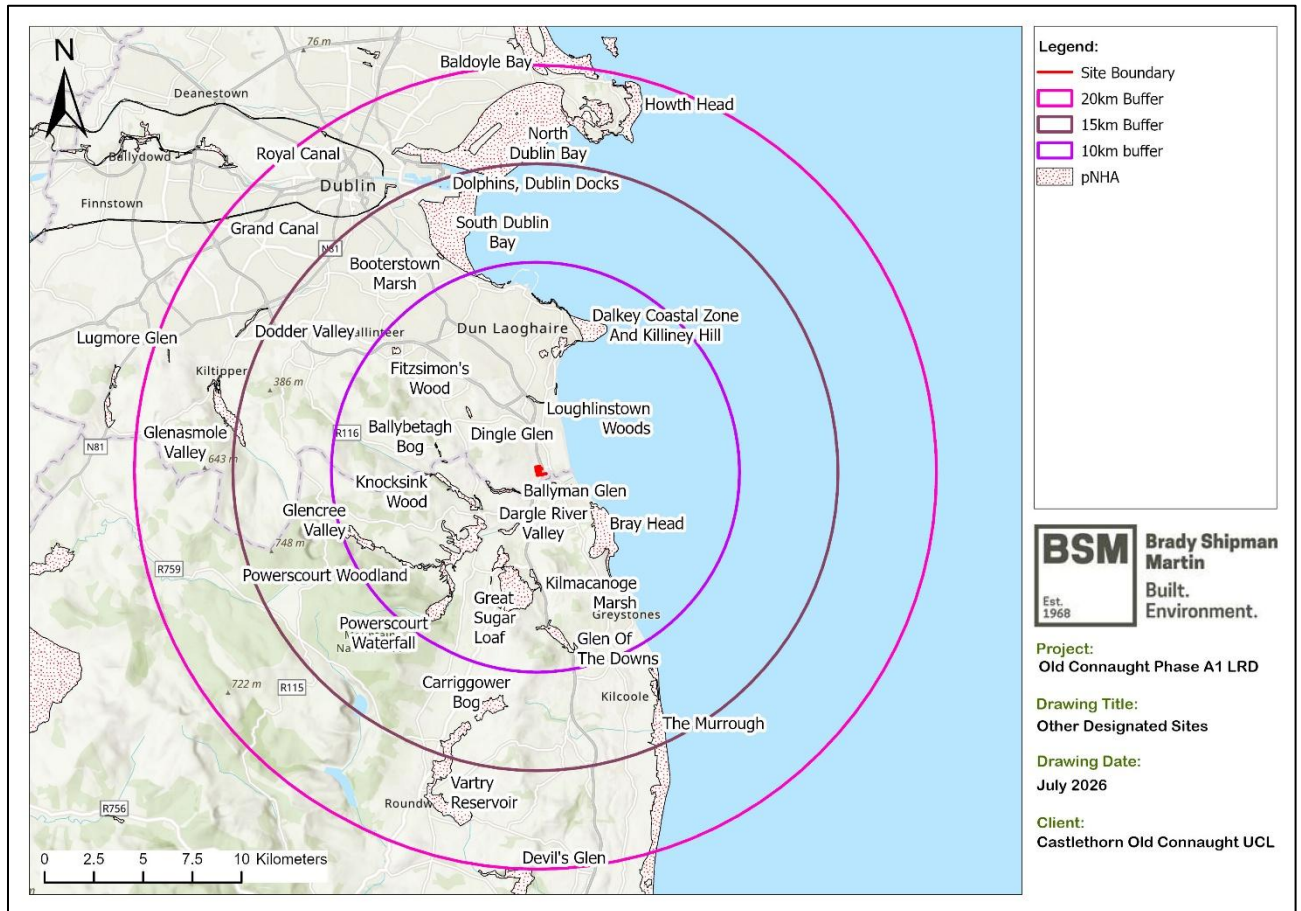


Figure 3.2 pNHA sites within potential zone of influence of the proposed development at Old Connaught, Co. Dublin. 10, 15 and 20 km radii are shown for scale.

3.2.3 Watercourses

A review of the Environmental Protection Agency (EPA) web-tool indicates that there are no mapped surface water features present on the site. The nearest mapped surface water feature is the Rathmichael (Crinken) Stream (IE_EA_10D010300), (see **Figure 3.4**) located approximately 350m east of the site.

There are minor drainage ditches associated with the field boundaries at the site, including a section of a minor stream known as the Old Connaught Tributary as referenced in the Old Connaught Local Area Plan documentation (specifically the Strategic Flood Risk Assessment), which, as mapped, appears to flow along the ditches in the south eastern part of the site. Together with a network of field drains and a culverted connection at the site boundary. It forms part of the local drainage network linking on-site surface water to the wider Shanganagh / Ovoca-Vartry drainage system.

There are no European designated coastal or estuarine sites within the site boundary and the local drainage network discharges ultimately to the Irish Sea via the broader Ovoca-Vartry river system. No local watercourses drain directly into any European sites – Bray Head SAC is approximately 2km to the south and Rockabill to Dalkey Island SAC is approximately 4km to the north of the outfall to the sea.

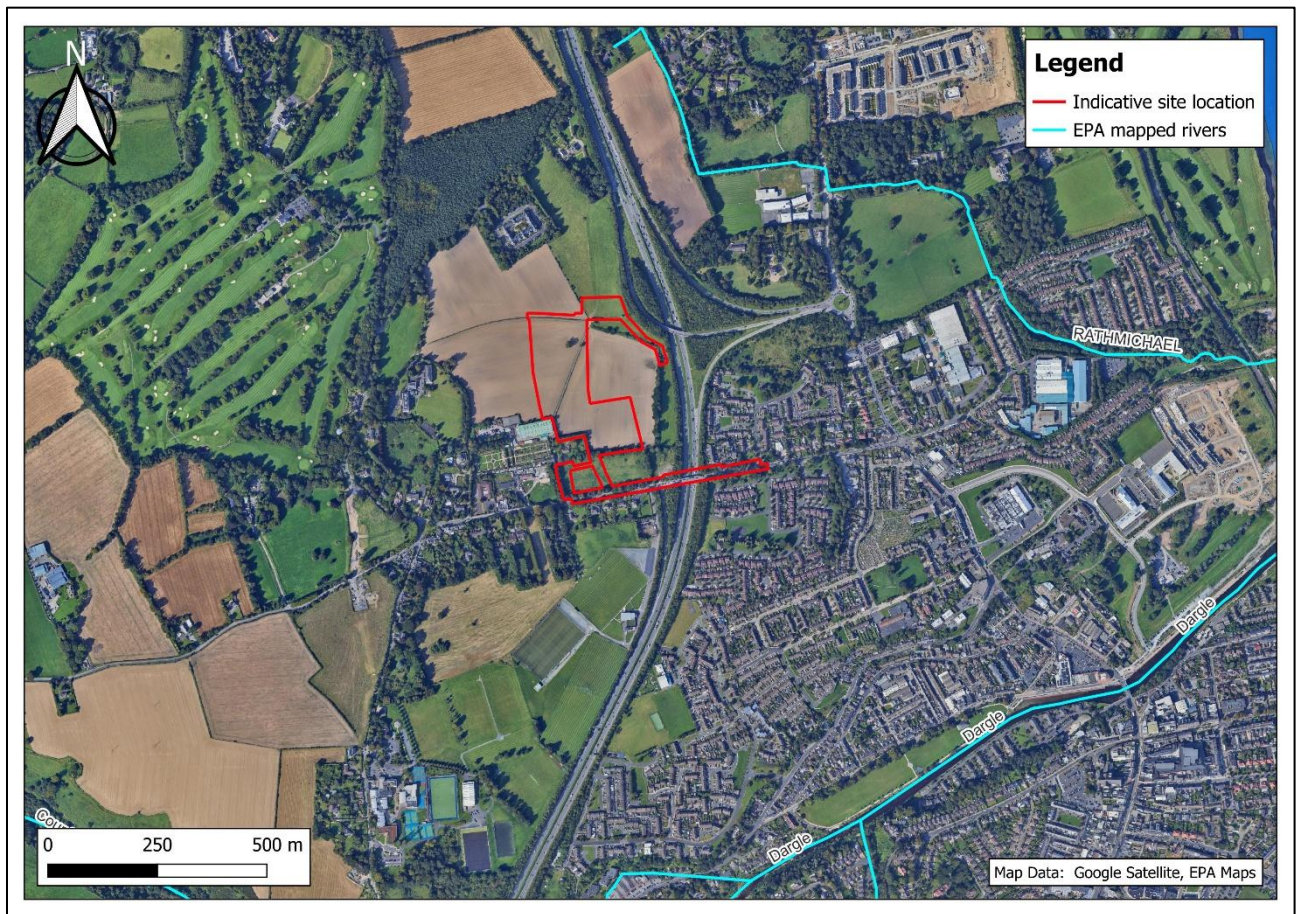


Figure 3.4 EPA mapped waterbodies in the vicinity of the proposed development.

3.3 Ecological Features

The site of the proposed development comprises predominantly agricultural fields in arable use and associated boundary features.

3.3.1 Habitats and Flora

The botanical surveys undertaken by Brady Shipman Martin and FitzGerald Ecology in 2025 and 2026 included a full survey of habitats, rare and legally protected plants and invasive plant species on the site. The habitat types recorded across the site are described below and depicted in **Figure 3.5 – Figure 3.10** (site photographs) and **Figure 3.8 and 3.11** (Hedgerow and habitat map).

A detailed hedgerow survey was undertaken in May 2026 in accordance with the Hedgerow Appraisal System (Foulkes et al. 2013 and Kelleher Ecology Services 2021). This survey assessed eight hedgerow features across the wider study area, comprising a mix of Hedgerows (Fossitt code WL1) and Treelines (WL2), and recorded their species composition, structural condition, and ecological significance. The hedgerow survey identified three Heritage Hedgerows and one hedgerow of County Importance.

Within the red line boundary, seven hedgerow features are present (Hedgerows 1, 3, 4, 5, 6, 7, and 8 – see **Figure 3.8**). Four of these—Hedgerows 1, 3, 5, and 8 are classified as **Local Importance (Higher Value)** due to their native shrub diversity, historical continuity, and role in landscape-scale habitat connectivity. Hedgerow 4 is additionally recognized as a hedgerow of County Importance given its species diversity, habitat connectivity, and historical context. Hedgerows 6 and 7 are classified as **Local Importance (Lower Value)** due to their predominantly non-native tree composition and lack of scrub layer diversity. As detailed in the Appropriate Assessment Screening Report, the

habitats present within the red line do not represent Annex I habitats of European importance, nor do they support populations of species for which nearby European sites are designated. The findings of the hedgerow survey are presented in detail in **Appendix B** and are integrated throughout this Ecological Impact Assessment, with specific reference to impacts within the proposed Phase A1 development footprint.

3.3.1.1 Rare and protected plant species

No rare plant species, and no species listed on the *Flora (Protection) Order 2022*, were recorded during the field surveys carried out in 2025 and 2026.

3.3.1.2 Non-native invasive plant species

Several non-native invasive plant species were recorded during the ecological surveys undertaken in 2025-2026. The detailed hedgerow survey (May 2026) identified the following invasive species within the site:

Three-cornered garlic (*Allium triquetrum*) is listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/2011). It is a species subject to strict control measures. Scattered patches of this species were recorded within the proposed development boundary, particularly below mature treelines. It is a highly invasive woodland ground flora plant that requires management during construction to prevent spread to retained habitats and off-site areas.

Butterfly bush (*Buddleja davidii*) was recorded dominating scrub (WS1) habitat in the southern part of the wider study area, outside the proposed development boundary. While not listed on the Third Schedule, this species is considered to have invasive potential within disturbed habitats.

Japanese knotweed (*Reynoutria japonica*) and winter heliotrope (*Petasites fragrans*) were recorded along the northern boundary of the wider study area, outside the proposed development boundary. Japanese knotweed is listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 and is subject to strict control measures. No evidence of these species was recorded within the subject site itself.

As *Buddleja*, Japanese knotweed, and winter heliotrope are all located outside the red line boundary, they will not be directly affected by the proposed Phase A1 development, and no management or control measures are required as part of this project.

3.3.1.3 Habitats

The following habitat types⁴ (and/or mosaics) were recorded within the study area during the field survey in 2025 and are described in detail below:

- Arable Crops (BC1)
- Buildings and artificial surfaces (BL3)
- Spoil and Bare Ground (ED2)
- Recolonising Bare Ground (ED3)
- Improved Agriculture Grassland (GA1)
- (Mixed) broadleaved woodland (WD1)
- Scrub (WS1)
- Treeline (WL2)
- Hedgerows (WL1)
- Drainage Ditches (FW4)

⁴ Habitat types are named after Fossitt, 2000

(<https://www.npws.ie/sites/default/files/publications/pdf/A%20Guide%20to%20Habitats%20in%20Ireland%20-%20Fossitt.pdf>)

3.3.1.3.1 Arable Crops (BC1)

The majority of the site comprises arable fields. These areas are characterised by low botanical diversity, being dominated by the cultivated crop species with minimal herb layer diversity. The margins of the arable fields support occasional common herb species such as ribwort plantain (*Plantago lanceolata*), creeping buttercup (*Ranunculus repens*), and dandelion (*Taraxacum* sp.). The arable habitat is typical of intensively managed agricultural land and is of low ecological value, being unsuitable for use by protected species.

- This habitat is of **negligible ecological value**.



Figure 3.3 BC1 habitat within the subject site. It is of negligible ecological value.

3.3.1.3.2 Spoil and bare ground (ED2)

An area of spoil and bare ground was recorded running through the central section of the site. This habitat comprises disturbed soil with sparse vegetation, along an access track. Vegetation cover is limited, with only occasional pioneer plant species establishing on the bare substrate.

- This habitat is of **Local Importance (Lower Value)**.



Figure 3.6 ED2 habitat within the site. It is of no more than Local Importance (Lower Value).

3.3.1.3.3 Recolonising Bare Ground (ED3)

An area of recolonising bare ground was recorded in the southern portion of the site. This habitat comprises previously disturbed or exposed ground that is in early stages of vegetation recovery, with early colonist plant species beginning to establish on the bare substrate. Vegetation cover is sparse to moderate, reflecting the early successional stage of habitat recovery. This habitat is of degraded ecological value and does not support any legally protected or rare plant species.

- This habitat is of **Local Importance (Lower Value)**.



Figure 3.7 ED3 habitat in the southern part of the site. It is of no more than Local Importance (Lower Value).

3.3.1.3.4 (Mixed) broadleaved woodland (WD1)

A small area of mixed broadleaved woodland (WD1) is present to the south east of the site boundary, along the M11. The canopy is composed mainly of maple (*Acer* spp), pedunculate oak (*Quercus robur*), and beech (*Fagus sylvatica*), with an understorey of holly (*Ilex aquifolium*), hawthorn (*Crataegus monogyna*), and elder (*Sambucus nigra*). Ground flora includes ivy (*Hedera helix*) and nettle (*Urtica dioica*). These woodlands contribute to structural diversity and provide nesting and foraging opportunities for birds and small mammals.

- This habitat is of **Local Importance (Higher Value)**.

3.3.1.3.5 Improved agricultural grassland (GA1)

Improved agricultural grassland (GA1) habitat was recorded within the site, including an abandoned field to the south and a horse-grazed field at the northernmost point of the site. Although the southern field is no longer actively managed, it remains characteristic of agriculturally improved grassland, with a strong dominance of competitive grass species. The northern horse-grazed field supports a relatively species-rich (and more herb-rich) sward, with frequent *Lolium perenne*, *Ranunculus acris*, *Agrostis capillaris* and *Poa trivialis*, alongside species such as *Plantago major*, *Trifolium repens*, *Achillea millefolium*, *Ranunculus bulbosus*, *Bellis perennis*, *Taraxacum* agg., *Cerastium fontanum*, *Jacobaea vulgaris* and a few plants of *Dactylis glomerata*.

The abandoned southern field is heavily dominated by *Holcus lanatus*, with other frequent grass species including *Alopecurus pratensis*, *Festuca rubra* agg., *Poa trivialis*, *Dactylis glomerata*, *Agrostis* species and *Anthoxanthum odoratum*. An assemblage of herbaceous species was also recorded throughout the field, including *Rumex obtusifolius*, *Cirsium arvense*, *Plantago lanceolata*, *Potentilla reptans*, *Cardamine pratensis*, *Ranunculus acris* and *Taraxacum* agg., alongside occasional legumes such as *Trifolium pratense*, *Trifolium dubium*, *Vicia sepium* and *Vicia sativa* subsp. *segetalis*. Scattered *Quercus robur* saplings were additionally noted, indicating early natural succession in the absence of active management.

Both areas were assessed for potential correspondence with Annex I habitats, particularly the Annex I habitat [6510] Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*). Although the northern field supports a moderately diverse herb assemblage, both grassland areas are dominated by species characteristic of agriculturally improved and grazed systems. The habitats therefore lack the species richness and characteristic floristic composition required to qualify as the Annex I habitat [6510] Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*).

These areas were also assessed for the correspondence to the dry grassland Annex I habitat [6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometea*). However, this habitat is not Annex I, due to the relatively low diversity of positive indicator species for this habitat type which are present here.

- The diversity of this habitat on-site, alongside its relative rarity in the broader area, deem this section to be **Local Importance (Higher Value)**.

3.3.1.3.6 Hedgerows (WL1)

Seven hedgerow features occur within the proposed Phase A1 development boundary, as identified and assessed during the detailed hedgerow survey undertaken in May 2026 (**Appendix B**). These hedgerows comprise a mix of native and non-native woody species of varying age structure and condition. Five of the seven hedgerows within the red line are classified as being of **Local Importance (Higher Value)**, while two are classified as **Local Importance (Lower Value)**. Additionally, two hedgerows are designated as Heritage Hedgerows, with one designated as a hedgerow of County Importance. See **Figure 3.8**.

Hedgerow 1 is located in the north-eastern portion of the study area and comprises a linear internal farm boundary. It is a remnant hedgerow with considerable historical continuity, appearing on Ordnance Survey maps dating from the 1830s-1930s. The tree layer contains sycamore (*Acer pseudoplatanus*). The scrub layer includes bramble (*Rubus fruticosus* agg.), common dogwood (*Cornus sanguinea*), elm (*Ulmus minor*), providing good shrub species diversity. The ground flora is dominated by nutrient-enriched ruderal species (nettle (*Urtica dioica*), cleavers (*Galium aparine*), creeping thistle (*Cirsium arvense*), and hogweed (*Heracleum sphondylium*)), typical of disturbed habitats. This hedgerow is linked to other semi-natural habitats (Treelines (WL2)) and is flanked by arable crops (BC1) on both sides. Despite the presence of ruderal ground flora, the good shrub diversity supports its classification as **Local Importance (Higher Value)**.

Hedgerow 3 is a non-linear farm boundary treeline which occurs within the south-eastern portion of the study area. It appears on first edition Ordnance Survey maps, making it historically significant. The tree layer is composed of sycamore, ash and lime. The scrub layer comprises hawthorn (*Crataegus monogyna*), bramble, elder (*Sambucus nigra*), blackthorn (*Prunus spinosa*) and holly (*Ilex aquifolium*). The ground flora includes Wood Avens (*Geum urbanum*), herb Robert (*Geranium robertianum*), lesser celandine (*Ficaria verna*), germander speedwell (*Veronica chamaedrys*), garlic mustard (*Alliaria petiolata*) and bush vetch (*Vicia sepium*), alongside ruderal species such as cleavers, nettle, creeping thistle and broad-leaved dock (*Rumex obtusifolius*). This hedgerow is connected to Treelines (WL2) habitat at both ends. Hedgerow 3 retains good species diversity, is historically significant and displays important habitat connectivity. Based on the hedgerow appraisal system assessment, Hedgerow 3 is designated as a Heritage Hedgerow and is classified as **Local Importance (Higher Value)**.

Hedgerow 4 is a linear road boundary treeline located along Old Connaught Avenue, which occurs within the southern portion of the study area. This area appears on the first edition OS maps and its location along a thoroughway indicates it may even predate this map. The tree layers are composed of ash, sycamore, chestnut and some mature oak. The scrub layer comprises hawthorn, bramble, elder, blackthorn and a single planted specimen of strawberry tree (*Arbutus unedo*). The ground flora includes multiple semi-natural woodland and positive hedgerow indicator species, namely wood avens, herb Robert, ramsons (*Allium ursinum*) and bush vetch. This hedgerow is connected to Treelines (WL2) habitat at both ends. Based on the hedgerow appraisal system assessment, Hedgerow 4 is designated as a Heritage Hedgerow and is recognized as a hedgerow of **County Importance**, given its impressive species diversity, habitat connectivity and historical context.

Hedgerow 5 is located on the western edge of the development boundary and functions as a linear field boundary treeline. The tree layer is composed solely of sycamore. The scrub layer comprises bramble, and the ground flora includes lesser celandine, cleavers and nettle. This hedgerow is connected to Treelines (WL2) habitat at one end and arable crops (BC1) at the other. While the ground layer is dominated by ruderal species, the presence of positive indicator hedgerow species (lesser celandine) and its connective importance in the landscape support its classification as **Local Importance (Higher Value)**.

Hedgerow 6 is a linear hedgerow which occurs within the northernmost portion of the study area. There is no tree layer present. The shrub layer solely comprises bramble. The ground flora includes nettle and broad-leaved dock. This hedgerow is connected to Improved agricultural grassland (GA1) habitat at one end and Spoil and bare ground (ED2) habitat at the other. Due to its lack of species diversity at the tree and shrub layers, this hedgerow is classified as **Local Importance (Lower Value)**.

Hedgerow 7 is an internal farm boundary treeline located in the south-western portion of the development boundary. The tree layer is composed of dominant planted Monterey cypress (*Cupressus macrocarpa*) (non-native species), with no distinct shrub layer. The ground flora includes herb Robert, cleavers, nettle and hogweed. This hedgerow is connected to Treelines (WL2) habitat at one end and Hedgerows (WL1) at the other. Due to its non-native tree composition and lack of shrub diversity, it is classified as **Local Importance (Lower Value)**.

Hedgerow 8 is also an internal farm boundary treeline located in the south-western portion of the development boundary. The tree layer is composed of beech (*Fagus sylvatica*). The shrub layer is well-developed, comprising hawthorn, bramble and elder, providing native shrub diversity. The ground flora includes cleavers and nettle. This hedgerow is connected to Treelines (WL2) on both ends, providing habitat connectivity in the local landscape. The native shrub diversity and landscape connectivity support its classification as **Local Importance (Higher Value)**.

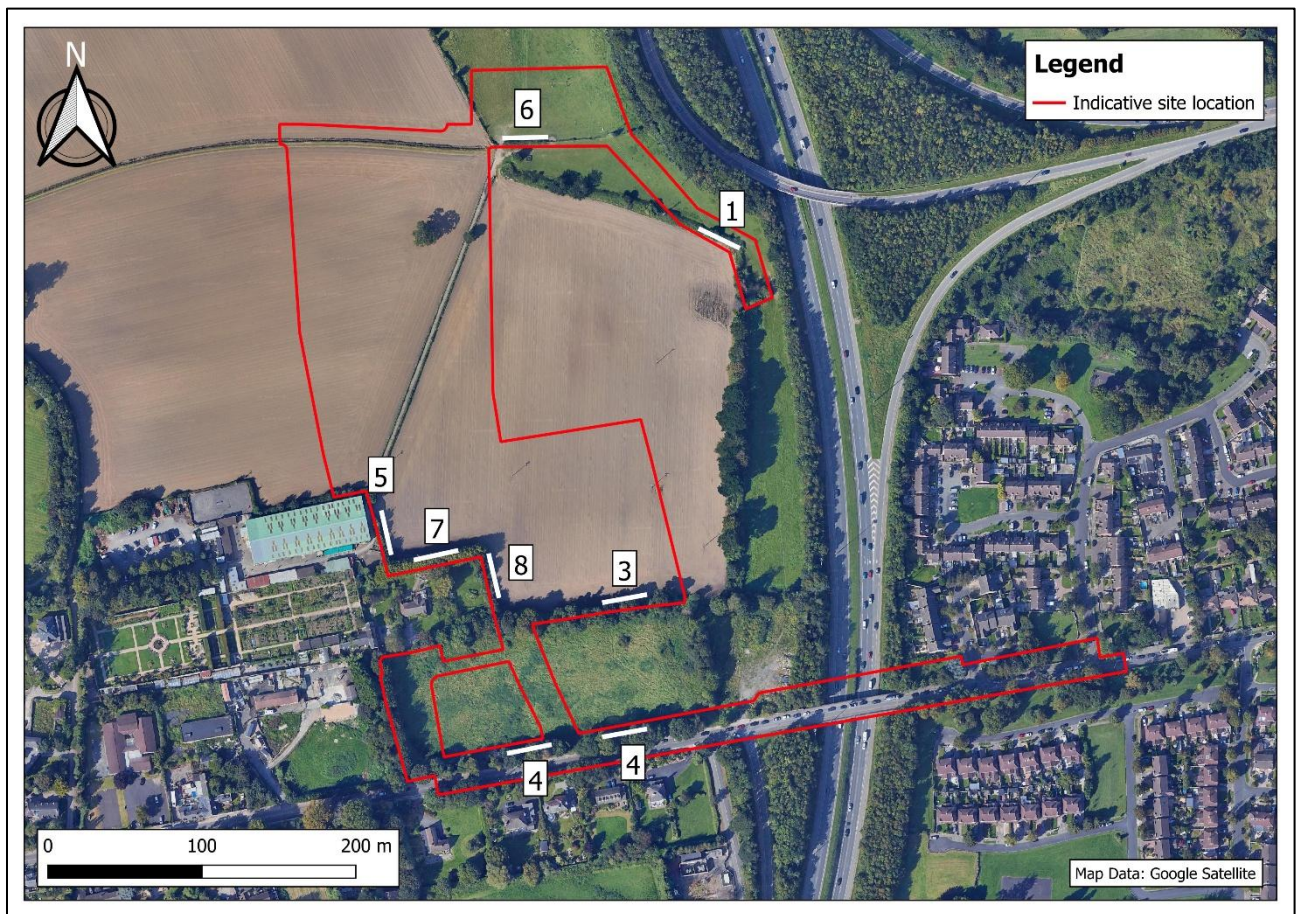


Figure 3.8 Locations of hedgerow features (WL1) within the Old Connaught Phase A1 development boundary.

3.3.1.3.7 Treeline (WL2)

Treeline habitats occurs along the north east and southern boundaries of the site, comprising a mix of mature and semi-mature trees. The treelines are very species-rich, with at least 49 woody species recorded across the site. The canopy is dominated by sycamore and ash, with other significant species including oak, hawthorn, blackthorn, and holly (*Ilex aquifolium*). The treelines support a diverse understory of native species and semi-natural woodland indicators such as wild garlic (*Allium ursinum*).

These treelines provide valuable habitat for commuting and foraging bats, breeding and foraging birds, and small mammals. They form important ecological corridors connecting to the wider landscape and provide shelter and feeding opportunities for common fauna species.

- This habitat is of **Local Importance (Higher Value)**.



Figure 3.9 WL1 & GA1 habitat on the southern boundary. WL1 is of Local Importance (Higher Value)

3.3.1.3.8 Drainage Ditches (FW4)

Minor drainage ditches are present within the site, including a feature referred to in Local Area Plan documentation as the Old Connaught Tributary. These ditches are slow-flowing features conveying intermittent shallow flows during periods of high rainfall. The ditches support emergent and marginal vegetation typical of drainage features and support limited aquatic invertebrate populations. However, the ditches are not connected to any mapped watercourse and ultimately discharge to a culverted local drainage network.

They provide **negligible ecological habitat value** for fish, otter, or water-dependent bird species.



Figure 3.10 - FW4 running along the northern section of the site.

3.3.1.3.9 Buildings and Artificial Surfaces (BL3)

The southern boundary of the site is defined by Old Connaught Avenue, an active public road providing access to residential areas. This road comprises tarmacadam surface and associated road furniture (kerbing, road markings). The road is built on an artificial substrate and supports no natural vegetation or habitat. Buildings and residential structures are visible to the south of the road, which together with the road infrastructure comprise the BL3 (Buildings and artificial surfaces) habitat classification.

This habitat is of **no ecological value** and is entirely artificial in nature.

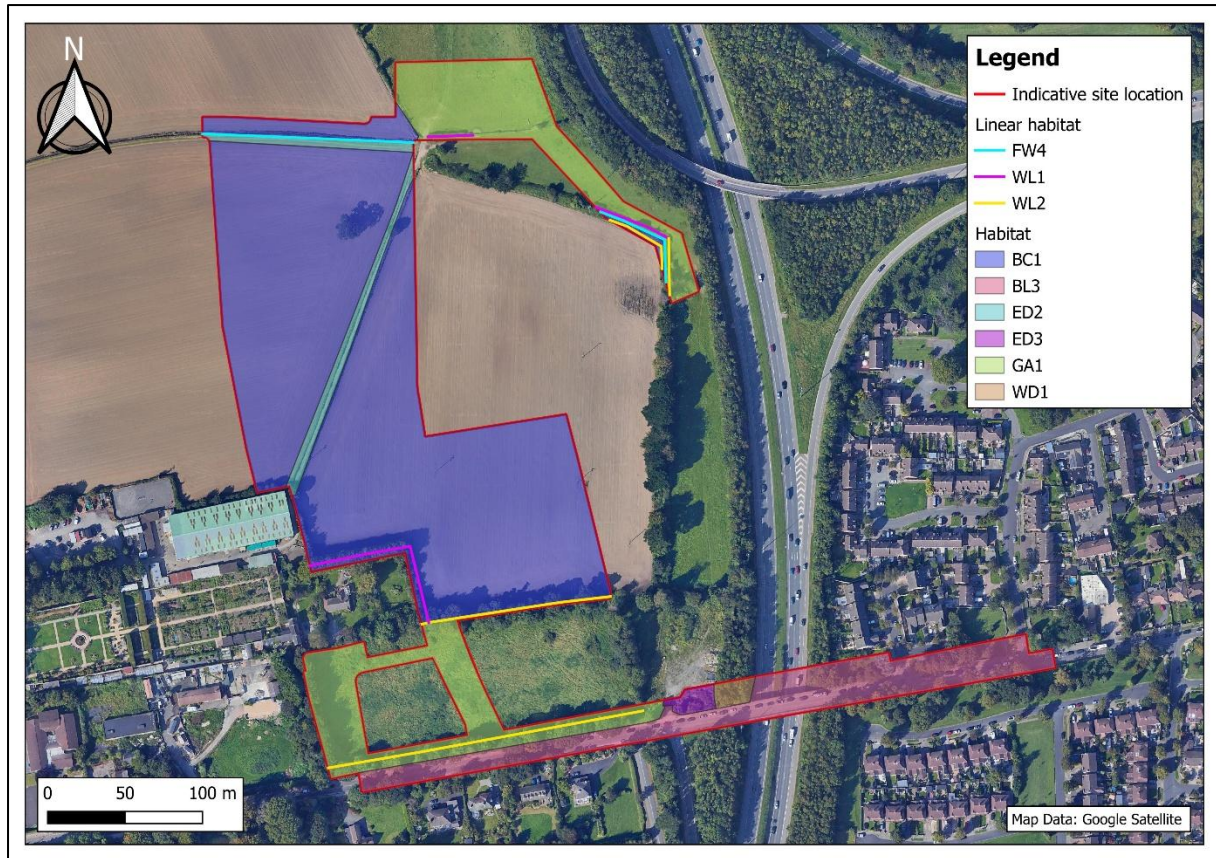


Figure 3.11 – Habitat Map of the subject site according to Fossitt (2000).

3.3.2 Fauna

3.3.2.1 Large Mammals

Otters (*Lutra lutra*), badgers (*Meles meles*), hedgehogs (*Erinaceus europaeus*), pine marten (*Martes martes*), and Irish hare (*Lepus timidus hibernicus*) are protected under the Wildlife Act 1976 and subsequent amendments. Otters are also protected under the EU Habitats Directive (via Article 12), as transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended).

Evidence of pine marten was recorded during surveys in the form of multiple scats located near the woodland edge adjoining Ferndale Court to the north of the site, outside the proposed development boundary. No active resting sites, dens, or evidence of pine marten activity was recorded within the proposed development boundary. The site does not support critical populations or key resting sites for this species.

Extensive surveys were undertaken to establish the presence or absence of badger populations on-site. A badger sett was initially reported on the southern fields within Dún Laoghaire-Rathdown Council lands; however, following intensive searching and placement of camera traps at this location, no badger activity was recorded. Additionally, on the eastern section of the site, outside the proposed development boundary, another potential sett entrance was identified; however, no evidence of badger occupancy or activity was recorded at this location either. Both possible setts were heavily overgrown and entirely obscured by the May 2026 site visit, indicating lack of recent use.

No evidence of otter activity was recorded on-site during surveys. No dens, holts, spraint, or other signs of otter presence were identified within the proposed development boundary or along the minor drainage ditches present on-site. The drainage features on-site lack the habitat characteristics (depth, cover, and food resources) required to support otter populations, and no hydrological connection to suitable otter habitat exists.

No evidence of hedgehog or Irish hare was recorded on-site during any survey visits undertaken between October 2025 and July 2026. The intensive arable and improved grassland habitats present do not provide suitable shelter, breeding, or foraging habitat for these species.

The site is of **Local Importance (Lower Value)** for large mammals. While the hedgerows and treelines within the development footprint may provide occasional foraging and commuting habitat for common mammal species such as fox and rabbit, the site does not support critical populations, key resting sites, or breeding dens for any legally protected mammal species. The predominance of arable land and improved grassland limits the habitat value for protected species, though retained linear features may continue to function as occasional movement corridors for widespread common species.

3.3.2.2 Birds

Birds, as well as their nests and eggs, are protected under the Wildlife Act (1976) and subsequent amendments.

Ornithological surveys have been undertaken at the Old Connaught site during the winter period and the breeding season. Surveys comprised both vantage point (VP) observations and transect walks covering all habitat types within the development boundary, undertaken in accordance with best practice guidelines for bird survey methodology. The surveys were designed to identify bird species present, their abundance, habitat usage, and to determine whether any Special Conservation Interest (SCI) species of nearby SPAs were recorded on-site.

Winter vantage point and transect surveys recorded a total of 25 bird species using the site during the overwintering period. The species recorded comprised a mix of resident and migratory winter visitors, all of which are common and widespread in the Dublin area. Of these winter bird species, all are classified as common and widespread. None are classified as Red-listed species of high conservation concern. Black-headed gull was the only Amber-listed species of moderate conservation concern on the Irish Bird Guide recorded on site during the winter season. No Annex I bird species (under the EU Birds Directive) were recorded. No species listed as Special Conservation Interests (SCIs) for nearby European sites were recorded during the winter surveys. The winter bird species recorded are detailed in **Table 3.1** below.

Table 3.1 – Summary of bird species recorded during the winter bird surveys.

Common Name	Count	Conservation Status (Ireland)
Jackdaw	98	Green
Black-headed Gull	97	Amber
Magpie	32	Green
Woodpigeon	33	Green
Hooded Crow	13	Green
Rook	7	Green
Robin	12	Green
Blackbird	3	Green
Wren	4	Green
Great Tit	3	Green
Blue Tit	2	Green
Coal Tit	1	Green
Goldcrest	3	Green

Common Name	Count	Conservation Status (Ireland)
Long-tailed Tit	6	Green
Dunnock	2	Green
Buzzard	6	Green
Meadow Pipit	38	Green
Linnet	8	Green
Goldfinch	6	Green
Greenfinch	1	Green
Siskin	30	Green
Pied Wagtail	2	Green
Song Thrush	6	Green
Chaffinch	2	Green

Breeding season surveys undertaken in April and May 2026 recorded a total of 25 bird species actively using the site for breeding or foraging purposes. The breeding bird community comprised a typical assemblage of common and widespread farmland and hedgerow-associated species. All species recorded are listed as Green-listed or Amber-listed species on the Irish Bird Guide. No Annex I bird species were recorded. No species listed as Special Conservation Interests (SCIs) for nearby European sites were recorded during breeding season surveys. The breeding bird species recorded are detailed in **Table 3.2** below.

Table 3.2 – Summary of bird species recorded during the breeding bird surveys.

Common Name	Count	Conservation Status (Ireland)
Woodpigeon	18	Green
Jackdaw	31	Green
Hooded Crow	11	Green
Chaffinch	8	Green
Robin	7	Green
Wren	6	Green
Blue Tit	11	Green
Rook	3	Green
Magpie	4	Green
Blackbird	18	Green
Dunnock	10	Green
Chiffchaff	8	Green
Great Tit	2	Green
Blackcap	2	Green
Coal Tit	1	Green
Goldcrest	4	Amber

Common Name	Count	Conservation Status (Ireland)
Song Thrush	2	Green
House Sparrow	6	Amber
Goldfinch	8	Green
House Martin	6	Amber
Greenfinch	1	Amber
Herring Gull	4	Amber
Black-headed Gull	10	Amber
Starling	18	Amber
Buzzard	2	Green

The breeding bird surveys conducted in April to June 2026 recorded no species of high conservation concern (Red-listed status) within the site. Amber-listed species of moderate conservation concern were recorded at very low abundance. All species recorded are common and widespread breeding birds typical of agricultural and hedgerow habitats in Ireland. No evidence of breeding by any species listed as an SCI of nearby SPAs (South Dublin Bay and River Tolka Estuary SPA, The Murrough SPA, Dalkey Islands SPA, or Wicklow Mountains SPA) was recorded.

Curlew (*Numenius arquata*), listed as an SCI species for North Bull Island SPA, was recorded feeding on-site during an initial site visit in October 2025. However, no further records of curlew have been documented during any of the subsequent winter vantage point surveys, transect walks, or breeding season surveys undertaken from December 2025 through May 2026. This indicates that the October 2025 sighting represented a transient bird passing through the site, rather than a bird utilising the site as a regular foraging location or wintering habitat. The site does not support curlew as a breeding or overwintering population.

Black-headed Gull (*Larus ridibundus*), listed as an SCI species for multiple SPAs including South Dublin Bay and River Tolka Estuary SPA and Dalkey Islands SPA, was observed feeding on-site alongside curlew on the same day in October 2025. During subsequent winter surveys (December 2025 to February 2026), Black-headed Gulls were recorded occasionally within the vicinity of the site, with birds observed foraging on-site on limited occasions or resting just outside the red line boundary. The majority of observations comprised birds flying over the site rather than landing and utilising it for sustained foraging or roosting. This pattern indicates that Black-headed Gulls use the site only occasionally as a transient or opportunistic feeding location, rather than as a regular or critical wintering or feeding habitat. The site does not support Black-headed Gull as an important population or core foraging area.

The site is of **Local Importance (Higher Value)** for breeding birds. The improved grassland, arable crops, and hedgerow habitats support a diverse assemblage of 25 common and widespread breeding bird species that actively utilize the hedgerows and treeline features for nesting. While the site does not provide habitat for species listed as Special Conservation Interests of nearby SPAs or any Red-listed species of high conservation concern, it functions as important breeding habitat for a range of farmland and hedgerow-associated species typical of agricultural landscapes in the Dublin area.

3.3.2.3 Bats

All Irish bat species are protected under the Wildlife Act 1976 and subsequent amendments, and under the EU Habitats Directive, which is transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended).

Bat surveys were undertaken by Wildlife Surveys Ireland in October 2025 and May-June 2026, comprising four active survey nights with static echolocation detector deployment. Four bat species were confirmed:

Common pipistrelle (*Pipistrellus pipistrellus*), Soprano pipistrelle (*Pipistrellus pygmaeus*), Leisler's bat (*Nyctalus leisleri*), and Brown long-eared bat (*Plecotus auritus*), with an additional unidentified *Myotis* species recorded by static detector. Static monitoring recorded 1,570 bat passes in October 2025 and 4,647 passes in May-June 2026, with substantially higher activity during the breeding season. The full bat survey report is presented in **Appendix C**.

Within the application boundary, bat activity comprises moderate-to-intensive foraging and commuting use. Common and soprano pipistrelles demonstrated sustained feeding activity concentrated along the southern treeline (WL2) within the application boundary during May-June 2026 evening and dawn surveys. Feeding activity by 4-6 common pipistrelles was consistently recorded at this location, indicating reliance on this habitat feature as a foraging resource. Occasional activity by Leisler's bat and Brown long-eared bat was also recorded within the site. Autumn surveys (October 2025) recorded sporadic transient activity.

Tree surveys identified mature trees with roosting potential, including an oak tree located in the northern field within the application boundary and additional treelines (WL2) located outside the application boundary. No active roosts were confirmed on-site during survey works.

The site is of **Local Importance (Higher Value)** for bats as foraging and commuting habitat, with intensive feeding activity concentrated at the southern treeline feature within the application boundary. This habitat feature is particularly valuable for common and soprano pipistrelles and requires appropriate protection during development.

3.3.2.4 Other Fauna

Amphibians (common frog and smooth newt) and reptiles (common lizard) are protected under the Wildlife Act (1976) and subsequent amendments. The habitats present are not suitable for any Irish herpetofauna – and no evidence was recorded.

The site was assessed for the presence of butterflies and for the suitability of the habitats for butterfly abundance and diversity. No evidence of Ireland's only protected insect, the marsh fritillary butterfly (*Euphydryas aurinia*), or its food plant (devil's bit scabious (*Succisa pratensis*)) was recorded on the site.

- Overall, the site is of **no importance** for any other fauna.

3.3.3 Overall Ecological Valuation of the Proposed Development Site

The subject lands at Old Connaught are not located within any designated site for nature conservation, including Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Natural Heritage Areas (NHAs)/proposed Natural Heritage Areas (pNHA).

However, as established through detailed ecological survey undertaken in the preparation of this planning application, the site supports hedgerow features (WL1) and several species-rich treelines (WL2) of local ecological importance, as assessed in accordance with the NRA/TII Guidelines. Four of the seven hedgerows within the development boundary are classified as Local Importance (Higher Value), namely Hedgerows 1, 3, 5, and 8, which are characterized by native scrub diversity, historical continuity (particularly Hedgerows 1, 3 and 4 which appear on first edition Ordnance Survey maps), and landscape connectivity value. Two of these hedgerows—Hedgerows 3 and 4 are designated as Heritage Hedgerows based on the hedgerow appraisal system assessment. Hedgerow 4 is considered to be of County Importance due to its impressive species diversity, habitat connectivity and historical context. Two hedgerows (Hedgerows 6 and 7) are classified as Local Importance (Lower Value) due to their lack of shrub layer diversity and, in the case of Hedgerow 7, non-native tree composition.

No rare, threatened or legally protected plant species, as listed in the Irish Red Data Book (Curtis & McGough, 1988), the Flora (Protection) Order 2022, or the EU Habitats Directive, are known to occur within the site and none have been recorded during the site visits. However, Three-cornered garlic a non-native invasive plant species (listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011) has been recorded which requires management during construction.

Evidence of pine marten was recorded via multiple scats located near the woodland edge adjoining Ferndale Court to the north of the subject site, outside the red line boundary. This indicates that pine marten use the wider landscape for foraging and movement via the hedgerows and treelines. No resting sites or dens were identified within the application site boundary. While pine marten may occasionally forage within the site's hedgerows and treelines, the site does not function as critical habitat for this species.

Badger surveys undertaken between October 2025 and May 2026 identified two potential minor sett entrances outside the subject site (one to the north and one to the south – within lands owned by Dún Laoghaire-Rathdown County Council; however, both were heavily overgrown and displayed no evidence of occupancy or active use during the survey period. An extensive search of the southern portion of the site within Dún Laoghaire-Rathdown Council lands, including camera trap deployment, revealed no further badger activity or occupied setts.

No evidence of otter activity, including dens, holts, spraint or other signs of presence, has been recorded by Wildlife Surveys Ireland during surveys undertaken in 2025–2026. Otters are protected under Article 12 of the Habitats Directive.

A comprehensive bat survey undertaken by Wildlife Surveys Ireland in October 2025 and May–June 2026 confirmed four bat species on-site—Common pipistrelle (*Pipistrellus pipistrellus*), Soprano pipistrelle (*Pipistrellus pygmaeus*), Leisler's bat (*Nyctalus leisleri*), and Brown long-eared bat (*Plecotus auritus*)—with an additional unidentified *Myotis* species recorded by static detector. The site supports moderate-to-intensive foraging and commuting activity, particularly concentrated along the southern treeline (WL2) within the application boundary, where sustained feeding activity by 4–6 common pipistrelles was recorded during May–June 2026 surveys. Occasional activity by Leisler's bat and Brown long-eared bat was also recorded on-site, whilst autumn surveys recorded sporadic transient activity. Mature trees within the application boundary, including an oak tree in the northern field, have roosting potential as assessed using the Tree Bat Roost Category Classification System; however, no active roosts were confirmed on-site. The site is of Local Importance (Higher Value) for bats as foraging and commuting habitat, particularly due to the intensive feeding activity concentrated at the southern treeline within the development boundary.

There are no groundwater dependent terrestrial ecosystems (GWDE) at the site, including those with potential links to Special Conservation Interests in European sites (such as petrifying springs or tufa-forming

springs). No pathway exists for the proposed development to impact any GWDE or associated European designated sites through groundwater-dependent mechanisms.

There is no habitat on the site suitable for regular or sustained use by any protected bird species listed as a Special Conservation Interest (SCI) in any European site within the Zone of Influence. While a flock of approximately 20 curlews was recorded feeding on-site during an initial site visit in October 2025, this species was not recorded during any subsequent surveys undertaken between December 2025 and May 2026. This record represents transient passage only and the site does not constitute functionally important wintering or breeding habitat for curlew or any other protected bird SCI species. The improved grassland and arable fields do not provide the wet grassland or wetland habitat required as core foraging areas for wading birds or wildfowl species for which nearby SPAs are designated.

The site as a whole is considered to be of **Local Importance (Higher Value)**, in accordance with the NRA/TII Guidelines for Assessment of Ecological Impacts of National Road Schemes (2009, Rev.2). While the site comprises predominantly intensive arable and improved grassland habitat of lower ecological value, the presence and retained functionality of significant hedgerow and treeline features result in a higher overall site valuation. The ecological importance of these retained features is reinforced by their active utilisation by protected species. Four bat species (common pipistrelle, soprano pipistrelle, Leisler's bat, and brown long-eared bat) have been recorded on-site, with Local Importance (Higher Value) status assigned due to intensive foraging and commuting activity concentrated particularly at the southern treeline. A total of 25 bird species were recorded during breeding surveys actively utilising the hedgerows and treelines for nesting, indicating the site functions as important breeding habitat for common farmland and hedgerow-associated species. Evidence of pine marten utilisation of the hedgerow and treeline network indicates the site's role in supporting landscape-scale connectivity for protected mammals.

4 Development Description

The proposed development (see **Figure 4.1**) comprises 271no. dwellings in a mix of houses and duplex / apartment units, including 103no. 2 to 3-storey houses (22no. 4-bedroom, 68no. 3-bedroom and 13no. 2-bedroom), 162no. apartments (113no. 2-bedroom and 49no. 1-bedroom) across 4no. blocks ranging from 1-5 storeys in building height and 6no. 3-bedroom duplex units; 1no. creche (c. 574 sqm) at ground floor of Apartment Block 3; and all associated and ancillary site development and infrastructural works including on site attenuation, hard and soft landscaping and boundary treatment works, including: public open space; communal open space; components of the regional attenuation pond; public lighting; surface car parking spaces; bicycle parking spaces/stores for houses and duplex / apartment units; 5no. ESB substations; bin stores; vehicular access via existing Old Connaught Avenue and a proposed new primary north-south street into the eastern portion of the Central Character Area. The proposed development also includes the construction of a new pumping station, associated single storey building, twin rising mains extending circa 400m along Old Connaught Avenue under the M11 connecting to the existing gravity foul network on Old Connaught Avenue 125m east of the M11 bridge and associated storage, together with all ancillary site development and reinstatement works required to facilitate these elements.



Figure 4.1 The proposed development at Old Connaught (refer to the Architect's drawings and Design Report, for full details)

5 Potential Impact of the proposed development

5.1 Designated Conservation Areas including Screening for Appropriate Assessment

The potential for any significant effects on European designated sites (sites designated for nature conservation under the EU Habitats and Birds Directives) has been assessed separately, and a stand-alone report (Appropriate Assessment Screening Report, Brady Shipman Martin, 2026), compiled in consultation with the wider design team including the project engineers and landscape architects, has been prepared for inclusion as part of the overall planning application and is submitted under separate cover.

In view of best scientific knowledge this report concludes that the proposed development at Old Connaught (Phase A1) individually or in combination with another plan or project, will not have a significant effect on any European sites. This conclusion was reached without considering or taking into account mitigation measures or measures intended to avoid or reduce any impact on European sites.

It is considered that this report provides sufficient relevant information to allow the Competent Authority (Dún Laoghaire-Rathdown County Council) to carry out an Appropriate Assessment Screening under section 177U of the Planning Acts and reach a determination that the proposed development will not have any likely significant effects on European sites in light of their conservation objectives.

5.2 Habitats and species

5.2.1 Habitat loss and disturbance within the site

Construction of the proposed development will result in habitat loss within the application boundary. However, key ecological features will be retained and protected during construction and operation of the development.

The following habitats will be removed or modified from the development footprint:

- Arable crops (BC1): This habitat occupies the northern and central portions of the site, covering approximately 4.65Ha. It represents the largest habitat loss by area within the development footprint.
- Improved agricultural grassland (GA1): Present in the north east and southern portions of the site, this habitat covers approximately 0.69Ha and will be removed during site preparation.
- Buildings and artificial surfaces (BL3): The existing Old Connaught Avenue Road surface will be maintained as part of the proposed development with only minor modifications to accommodate the proposed site layout and access arrangements.
- Hedgerow (WL1) – Hedgerow 1 is a long feature extending beyond the site boundary; however, only the section within the red line application boundary, spanning approximately 42.4m in length, will be removed. This hedgerow is classified as Local Importance (Higher Value). Hedgerow 6, located in the northern section of the development footprint, spans approximately 29m and will also be removed. This hedgerow is classified as Local Importance (Lower Value).

Except where road and other access across the feature is required and unavoidable the following ecologically important features will be retained and protected throughout the construction and operational phases of the development:

- One mature oak tree located within the central arable field area
- Hedgerow 3 (Local Importance – Higher Value)
- Hedgerow 4 (County Importance)
- Hedgerow 5 (Local Importance – Higher Value)

- Hedgerow 7 (Local Importance – Lower Value, dominated by non-native *Cupressus macrocarpa*)
- Hedgerow 8 (Local Importance – Higher Value)
- The southern treeline feature (WL2), which will be retained as a mature woodland buffer to the site boundary
- Drainage ditches (FW4) will be retained and appropriately managed during construction to ensure no impacts to site drainage. Integration with the site's surface water management strategy (SuDS) will be confirmed at detailed design stage, in accordance with the Flood Risk Assessment (AtkinsRéalis, 2026) and Stormwater Impact Assessment (AtkinsRéalis, 2026).

The removal of invasive plant species present within the application boundary, specifically three-cornered leek, will be undertaken as part of the project – refer to the Construction Environmental Management Plan (CEMP) prepared by AWN Consulting and submitted separately. Butterfly bush (*Buddleja davidii*), Japanese knotweed, and winter heliotrope are located outside the application boundary and will not be affected by the proposed development.

In the absence of mitigation, the removal of the on-site habitats would be a **long-term to permanent moderate negative impact at the local level**.

The habitats removed will be replaced with the proposed residential development, associated infrastructure, and extensive new landscaping and public open space as shown in detail in the accompanying landscape design drawings (Brady Shipman Martin Landscape Masterplan Drawing 7245-BSM-00-ZZ-DR-L-300 and Landscape Open Space Strategy Drawing 7245-BSM-00-ZZ-DR-L-301). The proposed development includes:

- Total open space of 5,673 m² comprising 4,519 m² of public open space and 1,154 m² of communal open space incorporating native hedgerow, native shrub planting, specimen trees, and biodiversity meadow planting
- Replacement and enhancement of hedgerow habitat through native hedgerow planting within the development
- Native planting of a 1,318 m² wetland attenuation pond with marginal aquatic species to support dual water management and ecological function
- New tree planting to supplement and complement the retained southern treeline feature

5.2.2 Impacts on Bats

The bat survey report (Wildlife Surveys Ireland, 2026) confirmed that four bat species were recorded on-site (Common pipistrelle, Soprano pipistrelle, Leisler's bat, and Brown long-eared bat), along with an unidentified *Myotis* species. The surveys recorded moderate on-site foraging and commuting activity. Importantly, no confirmed active roosts were identified on-site during the survey period.

In the absence of mitigation (habitat retention and sensitive lighting design), the removal of all on-site foraging and commuting habitat would result in a **long-term to permanent moderate negative impact at the local level for bat populations using the site**. However, the proposed development prioritises the retention of key hedgerow and treeline features, as detailed in Section 5.2. In particular, the retained hedgerows (3, 4, 5, 7, and 8) and the southern treeline, which supported the most intensive bat activity during surveys, will continue to provide foraging and commuting corridors for bats using the wider landscape. The retention of these features, especially the mature southern treeline buffer, ensures continuity of habitat connectivity and maintains the ecological function that bats depend on for feeding and movement across the site.

The design approach incorporates bat-friendly lighting specifications, as detailed in the Public Lighting Layout (Sabre Electrical Services Ltd., Drawing SES 06526 Sheets 1 and 2), which will minimize light pollution impacts on foraging and commuting bats during operational use. These mitigation measures substantially reduce the magnitude of impact on bat populations.

Given the absence of confirmed active roosts identified during the survey period, the retention of key hedgerow and treeline features, and the incorporation of sensitive lighting design, impacts on bats will be reduced to a **minor negative impact in the short term** (during construction and initial establishment of

planting), transitioning to a **minor positive impact in the medium to long term** as replacement native planting becomes established. As no active bat roosts are present on-site, no derogation licence under the Wildlife Acts is required.

5.2.3 Impacts on Birds

The breeding bird surveys recorded 25 bird species using the site for breeding or foraging. However, no Special Conservation Interest (SCI) species were recorded, and all species are common and widespread across the locality.

In the absence of mitigation (habitat retention and biodiversity-focused planting), the removal of all on-site nesting and foraging habitat would result in a **long-term to permanent moderate negative impact at the local level** for breeding bird populations using the site. However, the proposed development prioritises the retention of key hedgerow and treeline features, as detailed in Section 5.2. The retained hedgerows (3, 4, 5, 7, and 8) and the southern treeline will continue to provide nesting habitat and foraging opportunities for common bird species using the site, ensuring continuity of habitat connectivity to the wider landscape. The retention of these features mitigates against the complete loss of nesting habitat on-site, substantially reducing the magnitude of potential impact.

The construction and operation of the development will result in the loss of arable crops and improved grassland habitats within the development footprint, removing foraging habitat for certain bird species. However, the retention of hedgerow and treeline features, combined with proposed native hedgerow mix with trees, and ornamental scrub planting throughout the development, will provide replacement and enhanced nesting habitat in the medium term, with extensive public open space and landscaping attracting a diverse range of bird species to utilize the development in the long term.

Following implementation of mitigation (habitat retention and biodiversity-focused replanting), impacts on birds will be reduced to a **minor negative impact in the short term** (during construction and initial establishment of planting), transitioning to a minor positive impact in the medium to long term as replacement native planting becomes established. The site will continue to function as important breeding habitat for common farmland and hedgerow-associated species.

5.2.4 Impacts on Large Mammals

No evidence of active badger setts, runs, or feeding signs has been recorded within the application boundary or immediate vicinity of the site despite extensive searches and camera trapping surveys conducted over the 2025-2026 survey period. The absence of confirmed badger activity on-site, despite intensive survey effort, indicates that the application boundary does not form part of an active badger territory or regular commuting route. Therefore, the proposed development will have no direct impacts on badger populations.

Pine marten scat has been recorded near the Ferndale Court woodland edge to the west of the site, indicating occasional foraging and commuting activity via hedgerows and treelines in the wider landscape. The proposed development will result in the loss of arable and grassland habitats within the development footprint. However, the retention of the key habitat features will maintain connectivity for pine marten activity.

The retention of key hedgerow and treeline features, combined with native hedgerow mix with trees, and ornamental scrub planting, will ensure that **the proposed development does not result in significant impacts on large mammals**. Badgers will not be affected as no setts or active territories are present on-site, and pine marten habitat connectivity will be maintained through the retention of hedgerow and treeline corridors, with further enhancement through the planting plan.

5.2.5 Overall Impact Assessment

The proposed development will result in habitat loss within the development footprint, specifically the removal of arable crops, improved grassland, and spoil and bare ground. However, the proposed

development will retain significant ecological features that form the backbone of habitat and biodiversity value on-site.

The retention of the following key features substantially reduces the overall impact of the proposed development:

- One mature oak tree within the central arable field area, to be retained within the proposed public open space
- Hedgerows 3, 4, 5, 7, and 8
- The southern treeline, which provides mature woodland habitat and connectivity to the wider landscape

While these features will be retained, they will be subject to access requirements to accommodate development infrastructure, pathways, and site management access. As a result, these retained features will not be entirely untouched but will be managed to balance ecological function with necessary site access and operational requirements. Despite these access constraints, these retained features will continue to support foraging and commuting activity for protected species, provide nesting habitat for common bird species, and maintain landscape connectivity to the wider ecological network.

The loss of arable and improved grassland habitats within the development footprint will result in a short-term negative impact on foraging habitat for birds and small mammals. This impact is partially offset by the retention of key hedgerow and treeline features that support the most important ecological functions on-site (commuting corridors, nesting habitat, and connectivity to the wider landscape).

The site will transition from an intensively managed agricultural landscape to a mixed-use residential development that retains and enhances existing ecological features through comprehensive native planting of hedgerows and trees along with ornamental shrubs, grasses, perennials and bulbs.

Overall, the proposed development will result in a **minor to moderate negative impact in the short term** (during construction and initial establishment of new planting). This will transition to a neutral or minor positive impact in the medium to long term, once the replacement native planting becomes established and the retained hedgerow and treeline features are supplemented by the new landscaping proposals, resulting in a site with enhanced ecological value and habitat connectivity compared to the baseline intensively managed agricultural landscape.

5.3 Water quality, dust and other emissions

Surface water arising at the Old Connaught site is managed through a comprehensive Sustainable Urban Drainage System (SuDS) strategy as required by Dún Laoghaire Rathdown County Council. The proposed Phase A1 development (1.1826 Ha catchment area, contributing to an overall 11.538 Ha catchment including Phase 2) will generate runoff during the construction and operational phases that may contain contaminants. The main contaminants arising from construction and site clearance activities (including vegetation removal, foundation excavations, and landscape rubbish) may include suspended solids, hydrocarbons, and concrete/cement products. If not properly managed, such pollutants could pose a temporary risk to surface water quality. During the construction phase, there is potential for an increase in run-off due to compaction of soil, which could reduce infiltration capacity and increase the rate and volume of surface water. Activities with the potential to impact on water quality during the construction phase include excavation for building foundations and underground services; run-off from excavation and construction areas, including wheel washers, that may be contaminated with silt or oil from leaks from road vehicles and mobile site plant; spills and leaks of fuels and oils stored and used on-site by construction plant and equipment; and earth and materials associated with the proposed regional attenuation pond and SuDS infrastructure.

In summary the proposed site clearance and construction works may be expected to involve noisy activities, dust-generating activities, construction traffic and machinery, and the generation of waste material for off-site disposal. Typical environmental effects are predicted, including elevated levels of noise, emissions of

dust, and direct and indirect greenhouse gas emissions. Generally speaking, these effects will be **short-term in duration, reversible and localised**.

Mitigation measures to protect water quality during construction will include standard environmental controls such as sediment management, spill containment, wheel washing facilities, and fuel storage protocols in accordance with best practice guidance.

The proposed development also includes construction of a strategic foul pumping station and associated twin rising mains to convey wastewater to the existing Shanganagh–Bray Wastewater Treatment Plant, as detailed in the AtkinsRéalis Foul Pumping Station and Rising Main Report. The construction of the pumping station and rising mains will result in temporary environmental effects including noise and vibration from construction machinery, dust generation during excavation and ground preparation, construction traffic movements to and from the site, and ground disturbance associated with trenching for the rising mains beneath the N11 and along Old Connaught Avenue. Water quality effects may arise from silt runoff during excavation works and potential mobilisation of contaminated soils (if encountered). Ecological effects during construction may include temporary disturbance to retained hedgerow and treeline features adjacent to the pumping station location and rising main routes.

All construction-phase impacts associated with the foul pumping station and rising mains are temporary and reversible in nature. These potential impacts, together with the assumptions and design parameters set out in the AtkinsRéalis engineering report, have been considered as part of this overall environmental assessment. Appropriate mitigation measures to address noise, dust, construction traffic, ground disturbance, water quality protection, and ecological protection will be detailed in the Construction Environmental Management Plan (CEMP). These measures will include establishment of silt control systems, dust suppression protocols, noise and vibration management procedures, protection of retained ecological features (hedgerows and treelines) in accordance with BS5837:2012, and weekly ecological clerk of works oversight during construction activities. With implementation of these mitigation measures, no significant residual environmental effects are predicted to arise from pumping station and rising main construction.

During the operational phase, surface water generated from the proposed development will be conveyed through a proposed surface water network incorporating multiple SuDS features and attenuation prior to final discharge at QBar greenfield run-off rates. The restricted discharge from the proposed site will be conveyed via a new surface sewer pipe proposed from the attenuation pond and discharged to the existing culvert located east of the proposed site, which then discharges to the receiving Crinken Stream. The proposed development incorporates a comprehensive SuDS strategy with the following design features: a regional attenuation pond (northeast of site) serving both Phase 1 and Phase 2 with a design volume of 4655m³ for Phase 1 catchments; swales within open space and park areas adjacent to roads for conveyance and initial treatment of surface water runoff; permeable paving in light traffic areas (parking bays, courtyards, car parks) allowing infiltration and reducing peak flow rates; extensive green roofs on suitable apartment blocks providing attenuation and water quality benefits; filter drains within rear gardens of housing units for infiltration to ground and peak flow reduction; tree pits providing both amenity and drainage benefits; and vortex flow control devices throughout the site to manage flows and ensure the agreed final discharge rate of 56.34 l/s (including 30% climate change allowance).

The site has been divided into two soil permeability areas (Area A: Soil Type 4; Area B: Soil Type 3/4 reclassified to Soil Type 3) based on site investigations, with the SuDS design accounting for these varying infiltration capacities. All catchments incorporate multiple SuDS features to provide interception, treatment, and attenuation of surface water runoff in accordance with the Greater Dublin Strategic Drainage Study (GSDSDS) Criterion 4.3, ensuring that post-development discharge does not exceed the agreed greenfield runoff rate. The eastern boundary of the proposed site is located within Flood Zones A and B (1% AEP and 0.1% AEP respectively), with the remainder located in Flood Zone C. The SuDS design and site layout have been developed to accommodate 1 in 100 year storm events (plus 30% climate change uplift) with no flooding of buildings or key infrastructure on-site.

No existing Uisce Éireann foul water network is currently located within the immediate vicinity of the proposed site. However, in accordance with the Old Connaught Local Area Plan 2025, Uisce Éireann has an ongoing project at preliminary stage to provide wastewater infrastructure and a strategic pumping station to serve the wider Local Area Plan lands. The proposed development has therefore been designed with a new foul sewer network discharging to a proposed pumping station on-site in the South-West of the development, with rising mains conveying effluent to the existing foul network on Old Connaught Avenue. Potable water supply is available from the existing 8" uPVC main on Old Connaught Avenue, and a Pre-Connection Enquiry and Confirmation of Feasibility (18 February 2026) has confirmed that water supply is feasible without infrastructure upgrades by Uisce Éireann, subject to installation of a pressure reducing valve and bulk meter at the 225mm ID connection main.

The hydrological pathway links the site to the Crinken Stream (to coastal European sites; Bray Head SAC is located approximately 3 km south of the hydrological stream outlet, and Dalkey Island SAC is located approximately 1 km north of the outfall). No European sites with groundwater-dependent qualifying interests are located within the zone of influence of the proposed development, given the site's position in a low-permeability groundwater zone and the absence of significant groundwater discharge features on-site. The comprehensive SuDS strategy, discharge rate restriction to the agreed QBar of 56.34 l/s, and established water quality treatment measures ensure that there is no considerable likelihood of significant effects on water quality during either the construction or operational phases of the proposed development. There is no hydrological linkage from the site to any water-related features of European interest, and therefore no significant effects on water quality at any European sites are anticipated as a result of the proposed development.

5.4 Lighting

Lighting during the construction phase will be limited to the site compound and development areas only. Given the absence of confirmed bat roosts, construction phase lighting is not expected to result in significant impacts on bat species. The temporary nature of construction phase lighting (typically confined to daylight working hours with minimal artificial lighting required) means that impacts will be short-term and reversible.

Once the proposed development is operational, increased lighting and increased human activity have the potential to impact bat feeding and commuting behaviour. The bat survey report (Wildlife Surveys Ireland, 2026) recorded sustained feeding activity along the southern treeline, with 4–6 Common pipistrelles observed during May–June 2026 surveys, indicating this feature represents important foraging habitat.

The public lighting design incorporates comprehensive biodiversity considerations. The Public Lighting Layout (Sabre Electrical Services Ltd., Drawing SES 06526 Sheets 1 and 2) incorporating the following specifications:

- **Colour temperature:** All LED luminaires utilise warm white colour temperature, which is less attractive to flying insects and therefore reduces disturbance to bat prey species and bat foraging activity
- **Illumination levels:** Graduated lighting across the site (1.0 lux in sensitive ecological areas, 3.0 lux in residential areas, 5.0 lux in public circulation areas) with minimum 1.0 lux maintained adjacent to retained hedgerow and treeline features
- **Automatic dimming:** All public lighting is automatically dimmed to 75% output between 12 midnight and 6am, significantly reducing light spillage during peak bat foraging and commuting periods (most intensive activity occurs between sunset and 2–3 hours post-sunset, with secondary pre-dawn activity)
- **Dark zones:** The southern treeline and its immediate vicinity are designated as dark zones with maximum 1.0 lux illumination, ensuring that this feature which supported the most intensive bat activity during surveys maintains unobstructed commuting and foraging corridors throughout the operational phase

- **Physical controls:** Use of cowls, caps, and low-level bollard lighting (where illumination is required) to minimize upward light scatter and preserve dark sky; electronic photocell controls (set at 35/18 lux switching threshold) ensure lighting responds automatically to natural darkness levels

The retention of dark corridors along the key ecological features, combined with warm-white illumination and automatic dimming protocols, will maintain functional habitat connectivity for bat species throughout the operational phase.

6 Mitigation measures

In order to ensure that the ecological impacts are minimised and adequately mitigated a number of measures will be incorporated into the development design, as follows:

6.1 Designated Conservation areas

No designated conservation areas will be impacted in any way by the proposed development and no specific mitigation measures are required for the protection of such sites, including European sites. Full details in relation to European sites are provided in a separate Appropriate Assessment Screening Report.

6.2 Construction

6.2.1 Habitats

The proposed development will result in habitat loss within the development footprint (arable crops, improved grassland, and spoil and bare ground). However, the primary mitigation strategy is the retention of key existing ecological features combined with comprehensive enhancement through native planting and biodiversity-focused landscaping.

Ecologically important features will be retained and protected throughout the construction and operational phases of the development, refer to the Tree Removal and Retention Plan, prepared by The Tree File and submitted separately. These include Hedgerows 3, 4 (County Importance), 5, 7, and 8, the southern treeline providing mature woodland habitat connectivity, and the mature oak tree within the central arable field area. These retained features form the core of habitat value on-site and will continue to support protected species and common bird species. The retention of these features significantly reduces the overall ecological impact of the development.

In addition to habitat retention, comprehensive mitigation will be implemented through significant planting of new and replacement habitat. The landscape design (refer to the Landscape Masterplan drawing 7245-BSM-00-ZZ-DR-L-300 prepared by Brady Shipman Martin) is biodiversity-focused and designed to supplement and enhance the retained ecological features, increasing the overall ecological value of the site post-development.

The landscape and biodiversity value of the completed development will be enhanced using primarily native and indigenous locally appropriate species, together with species-rich planting in a network of interconnected areas. The landscape proposals will promote the use of pollinator-friendly species in accordance with the All-Ireland Pollinator Plan 2026-2030 and will assist the functioning of sustainable drainage systems (SuDS) through nature-based solutions.

All retained trees and hedgerow features will be protected during construction in accordance with BS5837:2012 (Trees in relation to design, demolition and construction – Recommendations). The detailed Tree Protection Plan and Tree File report [The Tree file Ltd, 2026], provide specifications for protective fencing, exclusion zones, and careful management of vegetation clearance within the development footprint. These measures will ensure that retained hedgerow and treeline features are adequately safeguarded from construction impacts and maintain their ecological function throughout the development process.

6.2.1.1 Planting strategy

The proposed planting strategy will include a mix of native trees, hedgerows, and scrubs selected to provide:

- Native species of local provenance wherever possible, suitable for the local soil and climatic conditions
- A range of species that will attract feeding invertebrates, including moths, butterflies, and bees, in support of the All-Ireland Pollinator Plan 2026-2030 objectives
- Year-round structural diversity through the incorporation of evergreen species to ensure year-round shelter and screening
- Species composition that reflects the hedgerow and woodland habitats that previously occupied the site

The planting proposals will include:

Native Tree Planting:

- Streetscape (18-20cm girth, 5.00m height): *Alnus glutinosa*,
- Feature trees for open spaces (4.00-5.00m height): *Betula pubescentis*, *Quercus robur*, *Prunus avium*, *Pinus sylvestris*, *Prunus padus*
- Small trees (16-18cm, 4.00m height): *Corylus avellana*, *Crataegus monogyna*, *Malus* Spp. , *Salix caprea*, *Sorbus aucuparia* with consideration given to future climate resilience and ecological function

Native Hedgerow Establishment:

- Native Hedgerow Mix 1: *Crataegus monogyna* (Hawthorn, 45%), *Ilex aquifolium* (Holly, 10%), *Prunus spinosa* (Blackthorn, 45%), planted at 0.5Ctr double staggered at 0.5m offset
- Native Hedgerow Mix with Trees: *Betula pendula* (Birch, 10%), *Corylus avellana* (Hazel, 10%), *Crataegus monogyna* (Hawthorn, 20%), *Ilex aquifolium* (Holly, 10%), *Lonicera periclymenum* (Honeysuckle, 5%), *Prunus spinosa* (Blackthorn, 15%), *Quercus robur* (Oak, 10%), *Rosa canina* (Wild Rose, 5%), *Sambucus nigra* (Elder, 5%), *Sorbus aucuparia* (Rowan, 5%), *Salix cinerea* (Grey Willow, 5%), planted at 0.5Ctr double staggered at 0.5m offset
- Supplementary native species planting along all retained boundary hedgerows (Hedgerows 3, 4, 5, 8) to enhance existing habitat and provide additional structural diversity.

Ornamental Shrub Planting:

- Specimen shrubs within development courtyards and public open space including *Aster* spp., *Caryopteris x clandonensis* 'Kew Blue', *Choisya x dewitteana* 'Aztec Pearl', *Erica cinerea*, *Escalonia* 'Apple Blossom', *Fuchsia magellanica* 'Hidcote', *Hydrangea serrata*, *Ilex aquifolium*, *Lavandula* spp., *Mahonia* spp., *Pieris* spp., *Sarcococca* spp., *Spiraea japonica*, *Rosa canina*, *Rosmarinus officinalis*, *Viburnum opulus*
- Ornamental grasses, perennials and bulbs: *Achillea millefolium*, *Ajuga reptans*, *Dryopteris filix-mas*, *Geranium sanguineum*, *Helenium* 'Moerheim Beauty', *Rudbeckia* 'Goldsturm', *Sedum spectabile* 'Autumn Joy', *Origanum* spp., *Salvia* spp., *Verbena bonariensis*, *Carex* spp., *Hakonechloa macro*, *Deschampsia caespitosa*, *Festuca rubra*, *Stipa tenuifolium* 'Pony Tails', *Miscanthus* 'Morning Light', plus *Allium*, *Camassia*, *Crocus*, and *Muscari* bulbs

Biodiversity Meadow and Grassland Planting:

- Native Wetland Species-Rich Grass Mix (sowing rate 17-27 g/m²): 50% wildflower species (Birdsfoot Trefoil, Black Meddock, Bush Vetch, Corn Marigold, Corn Poppy, Cowslip, Meadow Buttercup, Field Scabious, Kidney Vetch, Lady's Bedstraw, Lesser Knapweed, Marjoram, Eyebright, Mullein, Ox-eye Daisy, Hawksbit, Red Bartsia, Red Campion, Red Clover, St Johnswort, Wild Carrot, Yarrow) plus 50% grass species

- Native Species-Rich Grass Seed Mix (sowing rate 3 g/m): 20% wildflower species and 80% species-rich grass to provide nectar and pollen resources for invertebrates and foraging habitat for birds
- Low Maintenance Amenity Grass Mix with Clover (sowing rate 30-35 g/m): incorporating *Festuca rubra*, *Festuca ovina*, *Agrostis capillaris*, *Poa pratensis*, and *Trifolium repens* for structural variety

Biofiltration Areas/Rain Gardens:

- Species including *Aster x frikartii* 'Monch', *Agapanthus* 'White Giant', *Achillea millefolium*, *Carex morrowii*, *Deschampsia caespitosa*, *Iris* spp. to integrate water management with ecological enhancement

Marginal Native Planting (planting density 6/m²):

- Aquatic and riparian species: *Sparganium erectum* (Bur-reed), *Iris pseudacorus* (Yellow Flag Iris), *Typha latifolia* (Common Reedmace), *Mentha aquatica* (Water Mint), *Apium nodiflorum* (Fool's Watercress), *Sagittaria sagittifolia* (Arrowhead), *Butonmus umbellatus* (Flowering Rush), *Menyanthes trifoliata* (Bogbean), *Caltha palustris lacustris* (Marsh Marigold), *Glyceria maxima* (Reed Sweet-grass), *Carex acuta* (Slender Tufted Sedge), *Eleocharis palustris* (Spike-rush), *Juncus effusus* (Soft Rush), *Persicaria amphibia* (Amphibious Bistort), *Potentilla palustris* (Marsh Cinquefoil), *Alisma plantago aquatica* (Water Plantain), planted at specified densities to create functional wetland habitat

All planting plans and landscaping proposals will ensure that no invasive species are introduced, either deliberately or inadvertently, to the site.

6.2.1.2 Invasive Species Management

The on-site invasive plant species, specifically three-cornered garlic was recorded within the site boundary, at two locations, below mature tree lines within the site boundary. This plant will be eradicated as part of the long-term plan to develop the site.

A specialist contractor will develop a detailed, site-specific plan to eradicate the plant from the site and to prevent its spread. Until the proposed development is commenced on site, three-cornered garlic should be left *in-situ* and subjected to an ongoing chemical treatment programme.

Herbicide treatment by an invasive species specialist contractor with demonstrated experience in treating and managing invasive plants will take place as follows:

The plant should be subjected to localised spraying in April with a glyphosate-based herbicide.

- In order to increase the effectiveness of the herbicide application the leaves should be lightly bruised in advance of treatment.
- All herbicide treatments will need to be repeated every 2-3 months in order to treat whatever regrowth results from the seed and bulb bank left by this species.
- Where material that contain this species needs to be excavated, this material must be removed to an EPA licenced waste facility by an Invasive species specialist contractor with demonstrated experience in treating and managing invasives.
- Strict biosecurity procedures should be adhered to in order to minimise the risk of spread.
- Should it be necessary to remove soil for the proposed development, contractors must be made aware that the infestation and an area of up to ca. 2m around and to a depth of 0.5m may contain the seeds and/or bulbs of three-cornered garlic. This soil must be disposed of at an EPA licenced waste facility and not mixed with general spoil.

6.2.2 Fauna

Removal of vegetation suitable for use by nesting birds will, where possible, be undertaken outside the bird nesting season (avoiding the period 1 March to 31 August). This approach will minimise disturbance to

breeding birds recorded on-site, including common passerines such as wren, robin, blackbird, chaffinch, and corvids.

Should the construction programme require vegetation clearance between March and August, and this is unavoidable due to overriding programme constraints, pre-clearance nesting bird surveys will be undertaken by suitably experienced ecologists. The survey methodology will include visual inspection of all vegetation proposed for removal, timed point observations to identify any birds exhibiting territorial or nesting behaviour, and identification of any active nests or nesting sites. If no active nests are recorded, vegetation clearance will proceed. In the event that active nests are observed, an appropriately sized buffer zone (minimum 5 metres for hedgerows and small trees; minimum 25 metres for larger trees or ground-nesting species) will be maintained around the nest until such time as all eggs have hatched and young birds have fledged – typically a period of three to four weeks from the date of the survey. Once it is confirmed that the birds have fledged and no further nests have been built or occupied, vegetation clearance may take place immediately.

The bat survey confirmed that no active bat roosts were identified on-site during the 2025-2026 survey period. The most intensive bat activity was recorded along the southern treeline, which will be retained as part of the proposed development. The retained hedgerow features (Hedgerows 3, 4, 5, 7, and 8) and the mature oak tree within the central arable field will continue to support bat foraging and commuting activity.

The development design prioritises the retention of the key features that support bat activity on-site. As a result, no derogation licence under Regulations 54 or 55 of the European Communities (Birds and Natural Habitats) Regulations 2011 as amended is required.

The extensive native tree and shrub planting throughout the development will enhance foraging habitat for bats in the medium to long term. The retention of the southern treeline and hedgerow features, combined with supplementary planting, will strengthen bat commuting corridors and maintain habitat connectivity to the wider landscape.

To enhance overall bat habitat value on-site, the following mitigation measures will be implemented:

Bat box installation: A total of 14 bat boxes will be installed throughout the development, comprising 6 bat tree boxes and 8 Schwegler 2F bat boxes with front panels. All bat boxes will be installed on trees or posts at a minimum height of 3 metres (pole-mounted where necessary), positioned with a clear drop below to facilitate bat flight, located in dark areas subject to low levels of human disturbance, with south or southeast-facing orientation where possible, and positioned adjacent to commuting habitat provided by the native hedgerow and tree planting.

Native planting and habitat enhancement: Comprehensive native tree and shrub planting will be implemented throughout the development in accordance with the All-Ireland Pollinator Plan 2026-2030 to restore and enhance foraging habitat and support bat prey species (insects). Semi-mature and mature trees will be planted within the new development to provide established roosting and foraging habitat in the shorter term. Native hedgerow planting will enhance commuting corridors linking to the retained hedgerow features, and the SuDS/wetland features will be rich in biodiversity.

Sensitive lighting design: The Public Lighting Layout (Sabre Electrical Services Ltd., Drawing SES 06526 Sheets 1 and 2) has been designed with specific consideration for bat ecology. The southern treeline and its immediate vicinity, as shown on the Landscape Masterplan (Drawing 7245-BSM-00-ZZ-DR-L-300), will be designated as a dark zone to provide unobstructed commuting and feeding corridors for bats. Lighting levels in this sensitive area are restricted to 1.0 lux, which represents minimal illumination suitable only for essential safety and access (See **Section 5.4**).

The retained southern treeline and surrounding native planting will be protected from light spillage, ensuring these features continue to function as effective commuting and foraging corridors throughout the operational phase of the development.

While the site is not of notable importance for amphibians and reptiles, care will be taken during development to ensure that common lizards, common frogs, and smooth newts (which are all protected under the Wildlife Act 1976 and subsequent amendments) are not harmed during construction works.

Should any ponds, wet areas, or standing water be encountered during excavation or groundworks (although none are present on-site at present), these will be inspected by a suitably experienced ecologist prior to works being undertaken. Should any frog spawn, tadpoles, or newt larvae be discovered, a licence to remove or relocate these species may be required from the National Parks and Wildlife Service (NPWS), and appropriate mitigation measures will be implemented in consultation with the NPWS.

6.2.3 Construction and Environmental Management Plan (CEMP)

The Construction and Environmental Management Plan (CEMP) prepared by AWN, setting out the overall plan for the construction works with particular reference to ‘environmental management’ requirements for contractor’s activities, will be finalised by the appointed contractor. It will be the duty of the contractor to ensure that any work within their scope is carried out in accordance with these requirements.

6.3 Operation

No mitigation is proposed for the operation phase of the proposed development, once the measures required during the construction phase are implemented, other than monitoring the success of the measures set out in this report and in the accompanying documentation – see Section 7 (Monitoring).

7 Monitoring

7.1 Construction

A suitably experienced Project Ecologist (Ecological Clerk of Works) will be appointed for the duration of the construction phase to ensure the correct implementation of all mitigation measures. The Project Ecologist will ensure that all construction works comply with planning conditions, the project Construction Environmental Management Plan (CEMP), and the mitigation measures set out in this assessment.

- The Project Ecologist will monitor all site clearance activities, invasive species removal, vegetation clearance, and fuel/oil storage to ensure compliance with legislative requirements and the commitments in the planning application.
- The Project Ecologist will maintain regular contact with Dún Laoghaire-Rathdown County Council (Planning and Biodiversity Officers) and the National Parks and Wildlife Service as required.
- All monitoring tasks will be recorded and logged in a site ecology logbook for inspection by the site manager and local authority representatives.

Should vegetation clearance be required during the bird nesting season (1 March to 31 August), pre-clearance nesting bird surveys will be undertaken by the Project Ecologist as detailed in Section 6.2.2.

7.2 Operation

The retention of existing hedgerow and treeline features will be monitored during and immediately post-construction to ensure that protective fencing and exclusion zones have been effective in preventing construction-related damage. The application of dark sky lighting principles will be monitored during the operational phase to confirm that external lighting design minimises light spillage and pollution in designated bat commuting and feeding corridors.

Post-construction monitoring of the bat boxes installed on-site will be undertaken annually for a period of two years post-completion of the works to ensure that they remain accessible to bats and continue to provide roosting and foraging habitat. If necessary, bat boxes will be repositioned within the site to optimise their use by bat species. A qualified bat ecologist will undertake this monitoring in accordance with best practice guidance.

8 Conclusion

The proposed development will result in the loss of arable crops, improved grassland, and spoil and bare ground within the development footprint. However, the proposed development prioritises the retention of the key ecological features on-site, substantially reducing the overall ecological impact.

Although the construction of access roads and related infrastructure is unavoidable, the retention of Hedgerows 3, 4, 5, 7, and 8, the southern treeline, and the mature oak tree within the central arable field will ensure continuity of the most ecologically important habitats on-site. These retained features will continue to support foraging and commuting activity for protected species (common pipistrelle, soprano pipistrelle, Leisler's bat and brown long-eared bat), provide nesting habitat for common bird species, and maintain habitat connectivity to the wider landscape.

The loss of grassland and arable habitat within the development footprint will result in a temporary reduction in foraging habitat for birds in the short term. However, comprehensive mitigation measures will ensure that ecological value is restored and enhanced in the medium to long term. These measures include extensive planting of trees, native hedgerows, ornamental shrubs, grasses, perennials and bulbs throughout the development (in accordance with the All-Ireland Pollinator Plan 2026-2030); installation of 14 bat boxes (comprising 6 bat tree boxes and 8 Schwegler 2F boxes); sensitive dark sky lighting design to provide commuting and feeding corridors for bats; and comprehensive landscape design with communal open space and public open space.

There will be no loss of confirmed bat roosting sites as a result of the proposed development, and no derogation licence is required. The retained southern treeline, which supported the most intensive bat activity during surveys, will be unlit by the proposed development and will continue to provide commuting and foraging opportunities, supplemented by bat boxes.

The 25 bird species recorded during breeding surveys will continue to utilize the site as nesting habitat within the retained hedgerow and treeline features. The loss of grassland foraging habitat will be partially compensated by new trees and shrub planting along with installation of insect boxes which will provide enhanced insect habitat and nesting opportunities in the medium term.

No evidence of badger activity was recorded on-site despite extensive surveys and camera trapping over the 2025-2026 survey period. Therefore, the proposed development will have no impact on badger populations. Pine marten habitat connectivity will be maintained and enhanced through the retention of Hedgerows and the southern treeline, supplemented by comprehensive planting throughout the development, ensuring continued foraging and commuting opportunities for this species within the wider landscape network.

The comprehensive Sustainable Urban Drainage System (SuDS) design, incorporating a regional attenuation pond (4655 m³ volume for Phase 1), swales, permeable paving, green roofs, filter drains, and flow control devices, will manage surface water runoff to an agreed discharge rate of 56.34 l/s. This will ensure no long-term impacts on the Crinken Stream or downstream watercourses. The distance to the nearest coastal European sites (Bray Head SAC approximately 3 km south; Dalkey Island SAC approximately 6 km north) ensures that any potential contamination would be diluted to background levels before reaching sensitive receptors.

In summary, the proposed development will result in a minor to moderate negative impact on biodiversity in the short term (during construction and initial establishment of landscaping). This will transition to a neutral or minor positive impact in the medium to long term, once the replacement native planting becomes established and the retained hedgerow and treeline features are supplemented by the new landscaping proposals. Overall, the site will provide equal or greater ecological value in the long term compared to the current intensively managed agricultural baseline. There will be no long-term residual impacts on ecological receptors within or in the vicinity of the proposed development, or on any designated sites. The proposed development will not result in any significant effects on any European site, as confirmed in the Appropriate Assessment Screening Report prepared in support of this application.

9 References

- Bat Conservation Ireland (2010) Bats and Lighting – Guidance Notes for Planners, Engineers, Architects and Developers;
- Chartered Institute of Ecology and Environmental Management (CIEEM) (2024) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. V1.3;
- Council of the European Union (1979) Council Directive 79/409/EEC on the Conservation of Wild Birds (The EU Birds Directive);
- Council of the European Union (1992) Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (The EU Habitats Directive);
- European Parliament and Council of the European Union (2000) Council Directive 2000/60/EC of the European Parliament and of the Council establishing a Framework for the Community Action in the Field of Water Policy (The Water Framework Directive);
- Department of Housing, Local Government and Heritage (2023) *Ireland's Fourth National Biodiversity Plan*;
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- Doogue, D., Nash, D., Parnell, J., Reynolds, S., & Wyse Jackson, P. (1998) *Flora of County Dublin; The Dublin Naturalists' Field Club*;
- Environmental Protection Agency (EPA) (2022) Guidelines on the information to be contained in Environmental Impact Statements;
- Fossitt, J. (2000) A Guide to Habitats in Ireland; Heritage Council;
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- Stace, C. (2019) New Flora of the British Isles, 4th Edition; Cambridge University Press;
- Webb, D.A., Parnell, J. & Doogue, D. (1996) *An Irish Flora*; Dundalgan Press.
- Dún Laoghaire-Rathdown County Council (2022) Dún Laoghaire-Rathdown County Development Plan 2022–2028.
- Dún Laoghaire-Rathdown County Council (2025) Old Connaught Local Area Plan 2025.
- European Communities (Birds and Natural Habitats) Regulations 2011 to 2021 (S.I. 477/2011 and amending regulations).
- All-Ireland Pollinator Plan 2026-2030.

Appendix A: Response to Dún Laoghaire-Rathdown County Council Biodiversity Officer raised at Stage 2

This Appendix provides a comprehensive and systematic response to the Biodiversity Officer Opinion dated 15 April 2026 (with additional notes dated 2 March and consultation meeting 26 March 2026) for the proposed Old Connaught Phase A1 Large-scale Residential Development. The response demonstrates how the EclA, landscape design, and proposed mitigation measures comprehensively address all concerns raised regarding biodiversity-focused landscaping, green infrastructure, protected species assessment, invasive species management, lighting design, hydrological features, and alignment with planning policy objectives.

BIODIVERSITY-FOCUSED LANDSCAPING AND GREEN INFRASTRUCTURE

Biodiversity Officer Concern:

The provision of replacement oak tree planting and biodiversity-focussed landscaping is acknowledged; however, these measures alone are insufficient. Ecological connectivity and habitats located within publicly accessible open space are likely to be subject to regular disturbance and intensive management, limiting their long-term ecological value. The proposal should therefore incorporate dedicated areas for biodiversity that are functionally and spatially distinct from public amenity space, and which provide demonstrable, evidence-based ecological benefits that can be clearly supported and monitored.

Response:

Retained High-Value Hedgerow and Treeline Features

In Section 3.3.1 of the EclA identifies seven hedgerow features within the application red line boundary. The landscape design retains five of these hedgerows:

- ☐ Hedgerow 3: Heritage Hedgerow, Local Importance (Higher Value)
- ☐ Hedgerow 4: County Importance
- ☐ Hedgerow 5: Local Importance (Higher Value)
- ☐ Hedgerow 7: Local Importance (Lower Value)
- ☐ Hedgerow 8: Local Importance (Higher Value)

Hedgerows 3, 4, 5, 7, and 8 will be retained as primary ecological features within the landscape design. Hedgerows 3 and 4, and the southern treeline (WL2), will be slightly modified where necessary to accommodate access and road infrastructure requirements, as shown on the Landscape Masterplan.

All retained hedgerows and the treeline will be protected during construction in accordance with the Construction Environmental Management Plan (CEMP) prepared by AWN Consulting and submitted separately.

Southern Treeline (WL2) as Primary Ecological Feature

The southern boundary of the site comprises a mature treeline (WL2) classified as Local Importance (Higher Value). This treeline is retained as a primary ecological feature within the landscape design, subject to minor modifications where necessary to accommodate access and road infrastructure requirements, as shown on the Landscape Masterplan.

Baseline surveys (Section 3.3.2 of the EclA) document that this treeline is the most intensively used habitat on-site for bat foraging. Static bat detector monitoring undertaken by Wildlife Surveys Ireland recorded 4,647 bat passes over 12 nights (May–June 2026) concentrated along this treeline, supporting four bat species: Common pipistrelle, Soprano pipistrelle, Leisler's bat, and Brown long-eared bat. The retention of this treeline, even with minor modifications for access provision, preserves critical foraging habitat for these bat species within the landscape.

Evidence-Based Baseline Data

All retained habitat features are informed by comprehensive baseline surveys documented in the EclA:

Breeding Bird Habitat: Breeding season surveys (April-June 2026) recorded 25 bird species, including House Sparrow, Starling, Dunnock, Blackbird, and Song Thrush in the hedgerow and tree line habitats. These species are supported by the retained Hedgerows and tree line.

Bat Foraging Habitat: Specialist bat surveys (Wildlife Surveys Ireland, October 2025 and May-June 2026) confirmed four bat species using the site with intensive activity concentrated on the southern treeline (WL2). The retention of this treeline preserves critical foraging habitat within the landscape.

Ground Mammal Baseline: Field sign surveys (October 2025-June 2026) recorded evidence of pine marten movement in hedgerow and woodland areas adjacent to the site. The retained habitats will continue to provide foraging habitats for Pine marten. No badger setts, otter holts, or hedgehog evidence were recorded within the application red line boundary.

ECOLOGICAL CONNECTIVITY AND LANDSCAPE CONTEXT

Biodiversity Officer Concern:

While the site is in the central area of the LAP opportunities for ecological connectivity within the site and the wider landscape should still be examined.

Response:

Site Location Within Landscape Ecological Network

As documented throughout the EclA the proposed development site comprises part of a large field in agricultural (arable) use, surrounded by mature trees and hedgerows. The site is located north of Old Connaught Avenue within the administrative area of Dún Laoghaire-Rathdown County Council, within the Central Character Area identified in the Old Connaught Local Area Plan.

The site functions within a landscape-scale ecological network identified in the Old Connaught LAP as the Glendoo Mountain to Shanganagh Wildlife Corridor. This corridor connects upland habitat in the Wicklow Mountains westward through the site to coastal habitat and marine European sites to the east and north.

Retained Habitat Corridors

The landscape design maintains ecological connectivity through the site via the following retained features:

Southern Treeline (WL2): The mature treeline along the southern boundary is retained in full and functions as a primary bat foraging corridor. Specialist surveys identified this feature as supporting bat activity by four bat species, indicating its role in landscape-level bat connectivity.

Retained Hedgerow Network: Five hedgerows (Hedgerows 3, 4, 5, 7 and 8) are retained within the site boundary. Breeding bird surveys confirmed these hedgerows support breeding birds, indicating their importance as avian movement corridors and nesting habitat.

These retained linear features maintain connectivity with external habitat networks to the north, south, east, and west of the application boundary, supporting landscape-scale movement of mobile species including bats and birds identified in baseline surveys.

Hydrological Connectivity

The site is located within the Allies River catchment. Minor drainage ditches are present at field boundaries, including a section of the Old Connaught Tributary referenced in the Old Connaught LAP documentation. These features form part of the local drainage network linking on-site surface water to the wider Shanganagh/Ovoca-Vartry drainage system.

The site discharges to the Rathmichael (Crinken) Stream catchment (the nearest EPA-mapped watercourse, located approximately 350 metres east of the site). No local watercourses drain directly into nearby

European sites: Bray Head SAC is approximately 2 km south and Rockabill to Dalkey Island SAC is approximately 4 km north of the discharge outfall to the sea.

There are no groundwater-dependent ecosystems on the site and no pathway to any outside the site – such as those within Ballyman Glen SAC.

COMPREHENSIVE ECOLOGICAL SURVEYS AND BASELINE DATA

Biodiversity Officer Concern:

An EcIA report prepared in accordance with the CIEEM guidelines for ecological assessment (CIEEM, September 2024) is required to be submitted with the final planning application, and it is requested that:

- All ecological surveys are to be undertaken at the relevant optimal seasons by the appropriate specialists.
- The EcIA will assess the potential for impacts on all habitats present on site.
- The EcIA will assess the potential for impacts on protected species, including dedicated and comprehensive surveys for bats, birds and non-avian, non-volant fauna including mammals and herpetofauna. Note: bat, badger and badger setts are known to be present on the site from previous surveys.
- The Applicant will liaise with NPWS in respect of protected species present on site.
- The EcIA shall include bird surveys following best practice in relation to the number and timing of surveys to ensure comprehensive and robust assessment of this large site area.
- The EcIA shall include an assessment of trees and hedgerows on site (following Hedgerow Appraisal System Guidelines²), including an assessment of any Tree Survey findings and associated tree removal / retention plans (Arboriculture Assessment/Report).
- The EcIA shall include an assess potential impacts on any hydrological features/ecosystems (rivers, streams, wetlands, ponds, lakes, drainage ditches) within the Zone of Influence of the development.
- The EcIA shall include an assessment of the hydrology / hydrogeology assessment. Note: GSI have recorded high groundwater vulnerability for this site³.
- The ecological impact assessment will be based on up-to-date survey information (with due regard for CIEEM *Advice Note: The Lifespan of Ecological Reports & Surveys*, April 2019).
-
- The EcIA will assess the potential impact on any 'Locally Important Sites for Biodiversity', the Glendoo to Shanganagh Ecological Corridor which the site runs
- adjacent to. It should also assess the any pNHA's or protected sites and any species associated with these sites.
- The EcIA will assess potential impact on European Sites (including QI/SCI species within the Zone of Influence of the site).
- The EcIA shall include an assessment of invasive species that may be present on the site.
- The EcIA shall include an assessment of the landscape proposals; planting proposals and the use of native species; and lighting proposals.
- The EcIA shall identify any opportunities for biodiversity enhancement measures (e.g. to provide refuge for biodiversity and strengthen ecological connectivity with the 'Glendoo to Shanganagh' ecological corridor and any locally important site for biodiversity close to the site).
- Based on preliminary results indicated in the 'Statement on Landscape, Biodiversity and Visual' document, it is likely that a habitat and species management plan will be required to support protected species on site including Pine Marten. The presence and movement of this species through DLR's ecological network is important to the protection of other native species (i.e. the red squirrel) locally and nationally.
- A comprehensive mitigation and monitoring plan should be provided as part of the EcIA with clear details on proposed mitigation actions, timelines, reporting schedule and responsible persons for the implementation of mitigation actions.

Response:

The EclA has been prepared.

Survey Timeline and Seasons

- Comprehensive biodiversity surveys have been undertaken across all relevant seasons over a 9-month period (October 2025–July 2026), documented in detail in Section 2.1.1 of the EclA:
- Winter Bird Surveys: 28 November 2025, 13 January 2026, 10 February 2026, 4 March 2026
- Breeding Bird Surveys: 16 April 2026, 15 May 2026, 19 June 2026
- Habitat and Botanical Survey: May 2026 (Hedgerow classification survey)
- Bat Active Transect Surveys: 22–23 October 2025, 29–30 October 2025, 11–12 May 2026, 21–22 May 2026
- Bat Static Detector Deployments: 22–30 October 2025 (9 nights), 21 May–1 June 2026 (12 nights)
- Ground Mammal Field Sign Surveys: Concurrent with all bat and bird survey visits (October 2025–June 2026)

Habitats and Ecological Valuation

All habitats within the application red line have been assessed in accordance with Fossitt (2000) habitat classification system, documented in detail in Section 3.3.1 of the EclA. The habitats identified within the red line boundary include:

- ☐ Arable Crops (BC1)
- ☐ Improved Agricultural Grassland (GA1)
- ☐ Mixed Broadleaved Woodland (WD1)
- ☐ Hedgerows (WL1)
- ☐ Treeline (WL2)
- ☐ Drainage Ditches (FW4)
- ☐ Spoil and Bare Ground (ED2)
- ☐ Recolonising bare ground (ED3)
- ☐ Buildings and Artificial Surfaces (BL3)

Overall Site Valuation: The site is assessed as Local Importance (Higher Value) based on presence of Heritage and County Importance hedgerows supporting landscape-scale connectivity and presence of high-value treeline habitat supporting four bat species and nesting bird species.

Birds

Comprehensive ornithological surveys documented in Section 3.3.2.2 of the EclA:

- ☐ Winter Bird Surveys (November 2025–March 2026): 25 bird species recorded, all classified as Green-listed or Amber-listed. Black-headed Gull was the sole Amber-listed species recorded during winter surveys. No Annex I bird species recorded; no SCI species for nearby SPAs recorded.
- ☐ Breeding Bird Surveys (April–June 2026): 25 bird species recorded of which seven were amber-listed. No Annex I bird species were recorded using the site.

Site Valuation for Birds: Local Importance (Higher Value) based species using hedgerow and tree line habitats for nesting and due to the presence or various Amber-listen species.

Bats

Specialist bat surveys undertaken by Wildlife Surveys Ireland, documented in detail in Appendix C of the EclA.

Survey Scope: Eight active transect survey nights and 21 nights of static detector monitoring across two seasons (October 2025 for autumn migration/early hibernation; May–June 2026 for breeding season and peak activity).

Species Recorded:

- Common pipistrelle
- Soprano pipistrelle
- Leisler's bat
- Brown long-eared bat
- Unidentified *Myotis* species also recorded

Activity Levels:

- October 2025: 1,570 bat passes over 9 nights static monitoring
- May–June 2026: 4,647 bat passes over 12 nights static monitoring

Peak activity concentrated along southern treeline (WL2). No active bat roosts confirmed within application red line boundary. Roosting potential identified in mature oak tree (northern field) and within southern treeline, but no active occupation detected.

Ecological Significance: Site assessed as High Ecological Significance for bats based on species diversity, activity levels, and habitat use patterns. No derogation license required as no active roosts confirmed.

Large Mammals

Field sign surveys documented in Section 3.3.2.1 of the EclA:

- Badger: No badger setts confirmed within application red line boundary. Potential sett locations investigated during surveys showed no evidence of occupancy.
- Pine Marten: Evidence recorded outside the red line boundary (scats near Ferndale Court). No active resting sites, dens, or evidence of activity within the application boundary.
- Otter: No evidence of otter activity on-site. Drainage ditches lack habitat characteristics required to support otter populations.
- Hedgehog: No evidence recorded during surveys. Intensive arable and improved grassland habitat unsuitable for hedgehog populations.

Site assessed as Local Importance (Lower Value) for large mammals. While hedgerows and treelines may provide occasional foraging habitat, the site does not support critical populations or key resting sites for protected mammal species (pine marten).

Invasive Plant Species

Comprehensive invasive species surveys documented in Section 3.3.1.2 of the EclA:

Three-cornered Garlic: Scattered patches recorded within the proposed development boundary, particularly below mature treelines in the southern portion of the site. Listed on Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011.

Buddleja davidii: Recorded in the scrub habitat outside the proposed development boundary. Not listed on Third Schedule.

Japanese Knotweed: Small patches were recorded along the northern boundary of the wider study area, outside the proposed development boundary. Listed on Third Schedule.

Winter Heliotrope (*Petasites fragrans*): Scattered occurrences in field margins north of the site, outside the proposed development boundary. Not listed on Third Schedule.

INVASIVE SPECIES MANAGEMENT

Biodiversity Officer Concern:

A survey will be carried out to determine the presence or otherwise of any invasive plant species, including for Giant Hogweed, which is known to occur in the area. An Invasive species management plan drawn up by an invasive species specialist is requested to be submitted with the planning application if any invasive

species are found to occur. Biosecurity measures should be outlined in the CEMP and EclA to reduce the risk of introduction and spread of invasive species.

Response:

Invasive Species Within Red Line Boundary

Three-cornered garlic is present within the application boundary and requires management. This Third Schedule invasive species will be addressed through construction phase protocols outlined in the Construction Environmental Management Plan (CEMP) prepared by AWN Consulting and submitted separately.

Invasive Species Outside Red Line Boundary

Buddleja davidii, Japanese knotweed, and Winter heliotrope are located outside the red line boundary and will not be directly affected by the proposed Phase A1 development.

Giant Hogweed was also searched for during all survey visits (October 2025–June 2026) and no evidence was recorded within the proposed development boundary or adjacent lands.

Construction Phase Management

All invasive species management protocols for the construction phase, including three-cornered Garlic removal are detailed in the Construction Environmental Management Plan (CEMP) prepared by AWN Consulting and submitted separately.

Operational Phase Management

The landscape planting proposals (Brady Shipman Martin Planting Schedule) utilize native species exclusively. Annual site walkover surveys (as part of operational phase monitoring) will confirm continued absence of invasive species within the development footprint.

LIGHTING DESIGN AND IMPACT ON NOCTURNAL SPECIES

Biodiversity Officer Concern:

It is requested that the lighting design engineer will liaise with the ecological specialists (including bat and non-volant mammal specialists), in respect of outdoor lighting. It is an Objective that the design of lighting within the Plan area should seek to minimise light pollution and to minimise light spill, light temperature and dark zones for bat commuting, and in accordance with DLR lighting requirements.

Response:

The public lighting design incorporates comprehensive biodiversity considerations. The Public Lighting Layout (Sabre Electrical Services Ltd., Drawing SES 06526 Sheets 1 and 2) incorporating the following specifications:

- ☐ Luminaire Count and Specifications: 63 LED units across public roads and open spaces
- ☐ Colour Temperature: warm white in accordance with DLR requirements
- ☐ Automated Dimming: 75% reduction between midnight and 6:00 AM with photocell controls (on 35 lux, off 18 lux)
- ☐ Graduated Lux Levels:
- ☐ Primary Roads and Active Spaces: 5.0 lux
- ☐ Secondary Paths and Low-Activity Spaces: 3.0 lux
- ☐ Boundary Areas and Buffer Zones: 1.0 lux
- ☐ Dark Zones: The southern treeline (WL2), identified as the primary bat foraging habitat during baseline surveys, is designated as a Dark Zone with maximum 1.0 lux at treeline boundary and minimum 20-metre setback of all luminaires from treeline boundary.
- ☐ Technical Features: Directional luminaires, no upward light escape, minimal UV radiation, no flashing or strobing.

The retention of dark conditions along the southern tree line habitat preserves ecological function for bat species. The lighting design is further detailed in the Sabre Electrical Services drawing (SES 06526) submitted as part of the planning application.

HYDROLOGICAL FEATURES AND SURFACE WATER MANAGEMENT

Biodiversity Officer Concern:

Details of surface water flow must be provided both for temporary surface water drainage during construction and any SUDS features planned for the operational phase of the site's development. Hydrogeological assessments shall be conducted to assess potential impacts on groundwater and groundwater dependent terrestrial habitats (where relevant).

Response:

Baseline Hydrological Context

There are no mapped surface water features present on the site. Minor drainage ditches are present along field boundaries, including the Old Connaught Tributary as referenced in the Old Connaught LAP Strategic Flood Risk Assessment. These features form part of the local drainage network linking on-site surface water to the Shanganagh/Ovoca-Vartry drainage system and ultimately the Irish Sea.

The site is not mapped as a Groundwater-Dependent Terrestrial Ecosystem (GWDTE). Ballyman Glen SAC (the nearest designated GWDTE site) is located approximately 1.1 km west, outside the hydrological zone of influence of this development.

Surface Water Management Strategy

The proposed surface water management strategy is prepared by Atkins Réalis (Stormwater Impact Assessment Report, 2026) and incorporates Sustainable Drainage Systems (SuDS) design with nature-based solutions for surface water management.

Design Parameters:

- Discharge Rate: 56.34 l/s (controlled through restrictive outlets to mimic natural greenfield runoff conditions)
- Attenuation Volume (Phase 1): 4,655 m³
- Catchment Area (Phase 1): 4.677 hectares

The SuDS design incorporates vegetated retention basins, bioretention swales, and permeable pavements. The existing Old Connaught Tributary (FW4 drainage ditch) is retained and integrated into the landscape design.

Foul Water Management

Foul water will be pumped to the public sewerage network via a pumping station located on DLRCC lands south of the application boundary. The pumping station incorporates a 24-hour emergency storage tank to prevent discharge to the Allies River during storm conditions.

PROTECTED TREES AND HEDGEROWS

Biodiversity Officer Concern:

A concerted effort to protect and enhance hedgerows along all site boundaries should be given all due consideration and included in the site's landscape plan. It is requested that opportunities for 'dark zones' (wildlife refuges) are explored along the site boundaries and/or areas of retained hedgerow, woodland, treelines and vegetation. Note: these refuges should be distinct from public open space, buffered/protected from disturbance.

Response:

Lighting

Refer to previous section.

Hedgerow Retention and Protection

Five hedgerows (Hedgerows 3, 4, 5, 7, and 8) are retained within the application boundary. These features are shown on the landscape plan and comprise:

- Two Heritage Hedgerows (Hedgerows 3 and 4) identified through Hedgerow Appraisal System assessment
- One County Importance hedgerow (Hedgerow 4)
- Four hedgerows of Local Importance (Higher Value) (Hedgerows 1, 3, 5, 8)

Hedgerows 1 (a small section within the site boundary) and 6 will be removed as part of the development footprint.

Protection during construction is addressed in the Construction Environmental Management Plan (CEMP) prepared by AWN Consulting and submitted separately.

Southern Treeline as Primary Ecological Refuge

The southern treeline (WL2) is also retained and designated as a primary ecological refuge within the landscape design. Baseline surveys confirm this treeline as the site's primary bat foraging habitat (4,647 bat passes, May–June 2026) and supports breeding birds.

Mature Oak Tree

A mature oak tree in the northern field, identified in baseline surveys as having potential for bat roosting, is retained as shown on the landscape plan (Veteran Oak Tree).

CONSTRUCTION ENVIRONMENTAL MANAGEMENT AND ECOLOGICAL MONITORING

All mitigation measures for the construction phase, including ecological supervision, habitat protection, invasive species management, and surface water control, are detailed in the Construction Environmental Management Plan (CEMP) prepared by AWN Consulting and submitted separately.

CONCLUSION

The proposed development responds comprehensively to the requirements identified in the Biodiversity Officer's Opinion. The landscape design integrates biodiversity value throughout the site through native planting, habitat connectivity, and nature-based solutions, while maintaining compliance with Old Connaught LAP requirements for density and infrastructure. Comprehensive baseline surveys and specialist expertise inform all mitigation recommendations, and systematic monitoring will demonstrate the ecological benefits of the proposed development in the medium to long term.

The development will result in significant ecological enhancement compared to the current agricultural baseline, with habitat value increasing as the proposed native planting becomes established.

Appendix B: Old Conna 2026 Habitat and Hedgerow Survey Report

Old Conna 2026 Habitat and Hedgerow Survey Report



Report for *Castlethorn Old Connaught ULC*

FitzGerald Ecology

May 2026



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Introduction

Castlethorn Old Connaught ULC commissioned FitzGerald Ecology Ltd. to carry out a habitat and hedgerow survey of a proposed development site on agricultural lands adjacent to the Old Conna golf course, south Co. Dublin. The aim of the study was to determine the presence, classification and subsequent condition of all habitats and hedgerows on-site.

A comprehensive field survey was carried out across the entire development site, and this report provides a detailed description of the habitats and hedgerows recorded during the survey. The report includes habitat and hedgerow mapping, species lists, and an assessment of hedgerow condition throughout the site.

The surrounding landscape is characterised primarily by agricultural land use, with arable crop production appearing to be the dominant activity in the area. The study area encompassed all lands within the proposed development boundary (see Figure 1), and all areas were accessible for full walkover during the course of the field survey.

Expertise and Qualifications

This report was prepared by Craig Douglas H.Dip and was reviewed by Alexis FitzGerald B.A. M.Sc. ACIEEM.

Alexis is the Director of FitzGerald Ecology, which was established in 2015 as a botanical and ecological consultancy, based in Dublin, Republic of Ireland. Alexis holds an honours degree in Natural Sciences, with a specialisation in Botany, from Trinity College Dublin and obtained a distinction in his Masters in Biodiversity and Conservation from the same institution. During his career, he has completed multiple Ecological Impact Assessments (including EIAR Biodiversity Chapters), Appropriate Assessments and Preliminary Ecological Appraisal reports for residential and infrastructural projects across the Republic of Ireland. These were completed both in his previous three-year professional role as Consultant Ecologist for Scott Cawley Ltd. ecology consultancy, and for his current FitzGerald Ecology consultancy. He is an expert at habitat surveying and vascular plant, charophyte and bryophyte identification, developed over more than ten years of intensive study in university, professional ecological surveying and with natural history groups such as the Botanical Society of Britain and Ireland (BSBI) and the Dublin Naturalists' Field Club (DNFC). He also has extensive professional experience with vegetation and habitat classification, mapping and data analysis (including Fossitt (2000) classification, EU Habitats Directive Annex I habitats and statistical vegetation analysis tools such as Irish Vegetation Classification (IVC)), as well as rare, protected and invasive plant species surveying and monitoring. He also has experience with specialised bat, bird and terrestrial mammal surveys. He is an Associate Member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

Craig is a Graduate Ecologist at FitzGerald Ecology and is currently completing a Bachelor of Science (B.Sc.) in Environmental Management from Technical University Dublin and holding a Higher Diploma (H. Dip) in Horticulture from Dundrum College of Further Education. He previously gained professional experience as an Environmental Intern with Dublin City Council, where he contributed to Urban Re-Greening and Kerbside Regeneration projects. Through his academic studies, Craig has gained field experience across a range of habitats throughout Ireland, undertaking ecological surveys and habitat assessments as part of field-based modules. He has also developed GIS competencies in his studies, supporting spatial analysis and ecological mapping.

Craig has further developed ecological surveying and vegetation assessment skills through his dissertation research, which focuses on a comparison of European habitat classification systems, including the Fossitt classification system and the Irish Vegetation Classification (IVC). In his role at Fitzgerald Ecology, Craig continues to develop his professional expertise in habitat classification, GIS mapping, vegetation classification and ecological report writing.

Methodology

The habitat/plant walkover and hedgerow surveys were carried out by Alexis FitzGerald B.A. M.Sc. ACIEEM and Craig Douglas H.Dip in May 2026, with reference to Smith *et al.* (2011). The habitats were classified according to the Irish Heritage Council classification system (Fossitt, 2000). The abundance of each species present in each Fossitt Level 3 habitat type was recorded using the percentage scale¹. The locations of rare and non-native species were also recorded. European Commission (EC) Habitats Directive Annex I habitats were classified as per Commission of the European Communities (2013), also with reference to the corresponding national habitat survey reports and descriptions, particularly NPWS (2025). The nomenclature for the Annex I habitats also follows Commission of the European Communities (2013), with any abbreviated names for the habitats following NPWS (2025). Vascular plant taxonomy and nomenclature follows Stace (2019), whilst bryophyte taxonomy and nomenclature follow Atherton *et al.* (2010). Ecological evaluations were made with reference to CIEEM (2024) and National Roads Authority (2009), see Appendix III for a useful summary of such evaluations.

The hedgerow survey was carried out according to the methodology of Kelleher Ecology Services (2021), which was adapted from that of Foulkes *et al.* (2013) to a smaller, development site-based scale. As such, all habitats classified as hedgerows (WL1) and treelines (WL2) as per the Irish Heritage Council classification system (Fossitt, 2000) were included and recorded for this survey (these definitions are included by Foulkes *et al.* (2013) in their descriptions of relevant hedgerow habitats for surveying). As a result, habitats technically classified according to Fossitt (2000) as treelines (WL2) habitat are referred to as “hedgerows” throughout this report.

A standard hedgerow appraisal form (following Kelleher Ecology Services (2021) and Foulkes *et al.* (2013)) was used to record the relevant assessment criteria and indicator species, and the forms and the data recorded for each hedgerow are presented in Appendix I. The hedgerow appraisal form recorded information for each hedgerow under the following five criteria:

- Context
- Construction
- Structure and condition
- Management
- Floristic data – tree, shrub and ground flora layers

The indicator species recorded for the floristic data are those presented in Appendices D and E of Foulkes *et al.* (2013). The abundance of each shrub species present in each transect was recorded using the percentage scale, whilst the tree and ground flora etc. species were recorded according to a more simple presence/absence criterion (trees were either Present, P, or Dominant, D; ground flora

¹ Percentages were recorded as follows: 0.1, 0.3, 0.5, 0.7, 1, 3, 5, 7, 10, 15, 20, 25, 30, etc., continuing in 5% steps to 100%.

etc. were only Present, P), as per the methodology in Foulkes *et al.* (2013). Vascular plant taxonomy and nomenclature follows Stace (2019).

One or two hedgerow sample transects, depending on hedgerow length and homogeneity, were selected and recorded for the single hedgerow present (see Figure 4 for location). The location of this transect was selected via a randomised (Random Number Generator) process in Microsoft Excel ©, as per the methodology in Foulkes *et al.* (2013).

Historic information on the hedgerows on site was found by reviewing downloadable present-day Ordnance Survey Ireland townland boundaries shapefiles², as well as historic 1st and 2nd edition 6-inch Ordnance Survey maps of the area available online³.

The significance of the hedgerow on site was assessed as part of the survey, according to the following criteria as set out by both Foulkes *et al.* (2013) and Kelleher Ecology Services (2021):

- Historical Significance
- Species Diversity Significance
- Ground Flora significance
- Structure, Construction & Associated Features
- Habitat Connectivity
- Landscape Significance

Each of the above criteria is ranked on a scale of 0-4 based upon the field data collected. As noted by Foulkes *et al.* (2013), *“a score of 4 in any category indicates a hedge of high significance (Heritage Hedgerow). Hedges can also be considered of high significance (Heritage Hedgerows) if they record a cumulative score of 6 or greater in the Historical, Species Diversity or Structural Categories, or a cumulative score of 16 or greater over the five categories”*. Therefore, a hedgerow may be considered as a Heritage Hedgerow under three different scenarios (or any combination of these).

The condition of the hedgerow on site was also assessed as part of the survey, according to the following criteria as set out by both Foulkes *et al.* (2013) and Kelleher Ecology Services (2021):

- Structural variables
- Continuity
- Negative indicators/Degradation/Issues affecting long term viability

Each of the above criteria is ranked on a scale of 0-3 based upon the field data collected. The higher the score, the more favourable the condition. ***As noted by Foulkes et al. (2013), “A score of 0 in any category represents a hedgerow in Unfavourable Condition”.***

Survey Limitations

The timing for the survey was optimal for carrying out habitat and hedgerow surveys. All habitats and hedgerows were successfully accessed for survey. Therefore, no limitations were encountered during the surveys.

² Available at: https://data.gov.ie/en_GB/dataset/townlands-national-statutory-boundaries-ungeneralised-20241

³ Available at: <https://www.arcgis.com/apps/webappviewer/index.html?id=3ae19cc156bf4706a929304bf8fcc4f6>

Baseline Survey Results

Legally Protected and Threatened Flora

No plant species listed on the *Flora (Protection) Order 2022*, were recorded during the field surveys in 2026. Neither were any locally significant or otherwise rare plant species recorded. *Fumaria purpurea* was recorded as a ruderal plant at the edge of an arable field in the east of the site. This species was considered to be very rare in Co. Dublin at the time of, and according to, Doogue *et al.* (1998). However, this species has been observed to be spreading significantly in recent years across the east of Ireland, such that it may not be considered a locally rare plant any more in the county (Declan Doogue & Alexis FitzGerald, pers. obs., 2015-2026). Furthermore, it is “*probably introduced*” in the county (Doogue *et al.*, 1998).

Non-native (Invasive) Flora

One plant species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011 to 2021, was recorded during the field surveys undertaken in 2026, namely, *Allium triquetrum*. This species was scattered in a few locations below mature treelines on-site. It is a highly invasive woodland ground flora plant.

Furthermore, a number of non-native and introduced plant species were recorded during the field surveys undertaken in 2026. Some of these species are considered invasive or potentially invasive depending on the habitat and local context. These species are likely to have arrived through a combination of natural and anthropogenic pathways, including ornamental planting, garden escapes, dispersal by birds and mammals, wind transport and the dumping of garden waste.

The further non-native species recorded during the survey were as follows: *Arbutus unedo*, *Buddleia davidii*, *Castanea sativa*, *Clematis vitalba*, *Cordyline australis*, *Euphorbia hyberna*, *Petasites pyrenaicus*, *Pinus radiata*, *Ulmus minor* and *Veronica persica*. Of these, *Buddleia davidii* and *Petasites pyrenaicus* are considered to have invasive potential within disturbed habitats and may spread locally if unmanaged.

All mapped non-native/invasive species recorded within the site are shown in Figure 2.

Habitats

The habitat types (and/or mosaics) recorded within the study area according to the Heritage Council classification system (Fossitt, 2000) are described in detail in section 4.1 below (and are also mapped in Figure 3). Full plant species lists (with percentage abundance estimates for each species) for each recorded habitat are also presented in Appendix I of this report.

The following eight habitat types (and/or mosaics) were recorded within the study area during the field surveys in May 2026:

- Drainage ditches (FW4)
- Improved agricultural grassland (GA1)
- Hedgerows (WL1)
- Treelines (WL2)
- Arable crops (BC1)
- Spoil and bare ground (ED2)
- Recolonising bare ground (ED3)
- (Mixed) broadleaved woodland (WD1)

Other findings of note

One *Fraxinus excelsior* individual was recorded in the south of the site which displayed signs of ash dieback, such as failure to produce leaves across large sections of the crown. This disease is spread through windborne fungal spores, therefore there is a risk of spread to other trees within the site.

Hedgerows

The study site consists of agricultural fields. Intersecting and surrounding these fields are 8 extended lengths of hedgerows (WL1) and extended lengths of treelines (WL2) habitat (they are considered as 'hedgerows' for surveying purposes, as mentioned previously). Descriptions of each individual hedgerow are contained in Section 4.1 below.



Figure 1. Study site and immediate environs



Figure 2. Non-native/invasive species recorded at the study site during field surveys in 2026

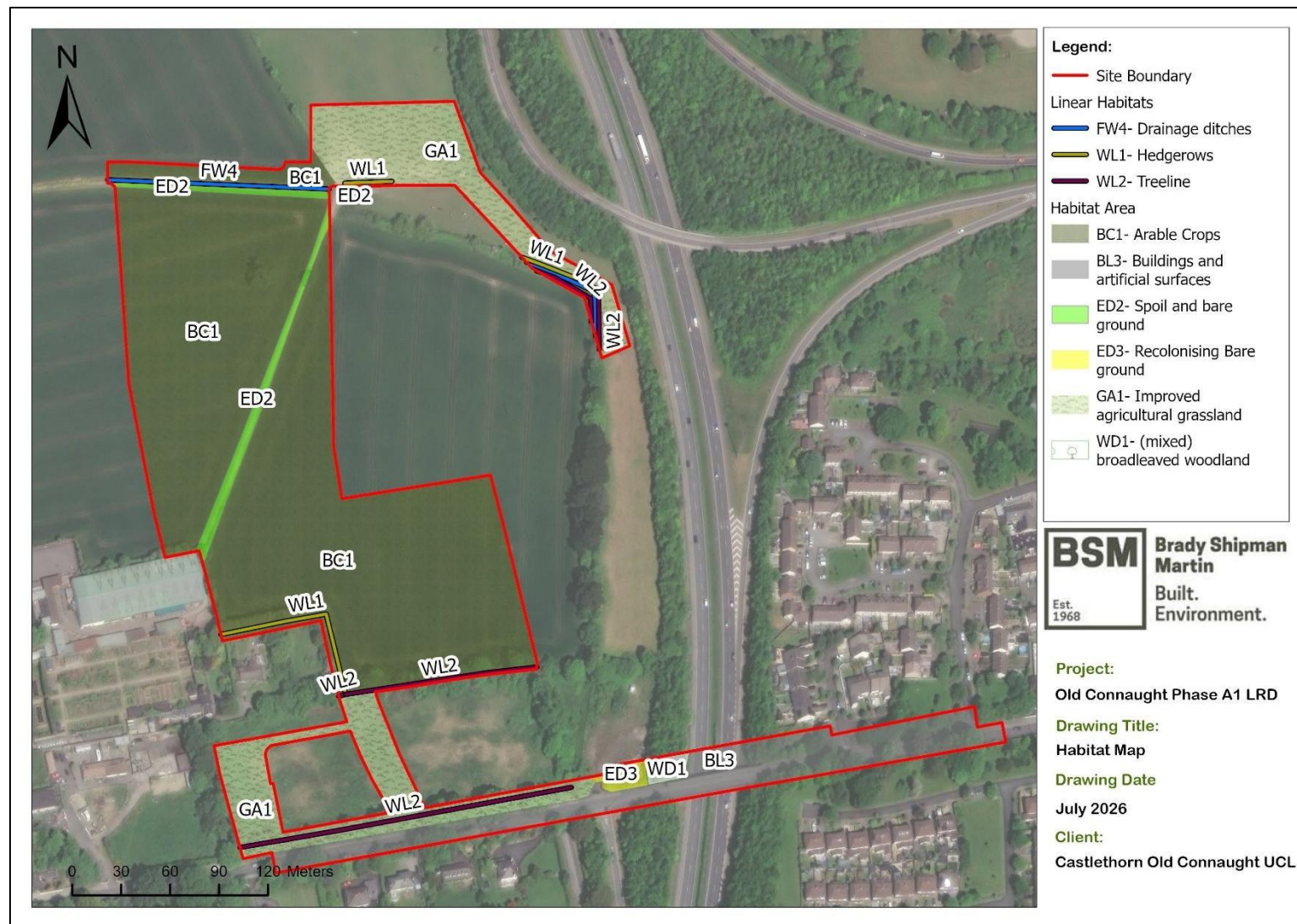


Figure 3. Habitats surveyed within the study site in 2026



Figure 4. Hedgerows assessed and recorded on-site in 2026

Habitats Descriptions

Drainage ditches (FW4)

Drainage ditches (FW4) habitat was recorded within and adjacent to the agricultural fields surrounding the eastern and north-western edges of the site, forming part of the local surface water drainage network. The habitat is characterised by a limited assemblage of wetland and marginal plant species, with *Helosciadium nodiflorum* being the most frequent species present, but that only very scattered in more open areas of ditch. Other species recorded within the ditch margins include *Epilobium hirsutum* and *Solanum dulcamara*.

The drainage ditches on-site are wet but generally narrow and species-poor, likely reflecting regular disturbance and agricultural influence from the surrounding land. Nevertheless, they provide local ecological value by contributing to habitat connectivity and offering suitable conditions for wetland-associated flora. Nonetheless, given its species-poor character, this habitat is considered to be of Local Importance (Lower Value).

Improved agricultural grassland (GA1)

Improved agricultural grassland (GA1) habitat was recorded within the site, including an abandoned field to the south and a horse-grazed field at the northernmost point of the site. Although the southern field is no longer actively managed, it remains characteristic of agriculturally improved grassland, with a strong dominance of competitive grass species. The northern horse-grazed field supports a relatively species-rich (and more herb-rich) sward, with frequent *Lolium perenne*, *Ranunculus acris*, *Agrostis capillaris* and *Poa trivialis*, alongside species such as *Plantago major*, *Trifolium repens*, *Achillea millefolium*, *Ranunculus bulbosus*, *Bellis perennis*, *Taraxacum* agg., *Cerastium fontanum*, *Jacobaea vulgaris* and a few plants of *Dactylis glomerata*.

The abandoned southern field is heavily dominated by *Holcus lanatus*, with other frequent grass species including *Alopecurus pratensis*, *Festuca rubra* agg., *Poa trivialis*, *Dactylis glomerata*, *Agrostis* species and *Anthoxanthum odoratum*. An assemblage of herbaceous species was also recorded throughout the field, including *Rumex obtusifolius*, *Cirsium arvense*, *Plantago lanceolata*, *Potentilla reptans*, *Cardamine pratensis*, *Ranunculus acris* and *Taraxacum* agg., alongside occasional legumes such as *Trifolium pratense*, *Trifolium dubium*, *Vicia sepium* and *Vicia sativa* subsp. *segetalis*. Scattered *Quercus robur* saplings were additionally noted, indicating early natural succession in the absence of active management.

Both areas were assessed for potential correspondence with Annex I habitats, particularly the Annex I habitat [6510] Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*). Although the northern field supports a moderately diverse herb assemblage, both grassland areas are dominated by species characteristic of agriculturally improved and grazed systems. The habitats therefore lack the species richness and characteristic floristic composition required to qualify as the Annex I habitat [6510] Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*).

These areas were also assessed for the correspondence to the dry grassland Annex I habitat [6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometea*). However, this habitat is not Annex I, due to the relatively low diversity of positive indicator species for this habitat type which are present here.

The diversity of this habitat on-site, alongside its relative rarity in the broader area, deem this section to be **Local Importance (Higher Value)**.



Plate 1 - GA1 habitat at the site, with Carrickgollogan Hill in the distance

Hedgerows (WL1)

Hedgerows (WL1) habitat is present mainly to the north and west of the site adjacent to active field boundaries. This habitat is dominated by dense *Rubus fruticosus* agg., which accounts for the majority of vegetation cover, forming a largely monospecific low woody shrub-dominant hedgerow structure. Additional woody species recorded include *Ulmus minor*, *Sambucus nigra*, *Acer pseudoplatanus*, *Cornus sanguinea* and *Buddleia davidii*. Of these, *Cornus sanguinea* appears to have been planted, while *Acer pseudoplatanus*, *Clematis vitalba* and *Buddleia davidii* are non-native species that have colonised the hedgerows.

The ground flora and associated marginal vegetation are relatively species-poor and include common ruderal and grassland species such as *Galium aparine*, *Urtica dioica*, *Arrhenatherum elatius*, *Holcus lanatus*, *Festuca rubra* agg., *Cirsium arvense*, *Heracleum sphondylium* and *Vicia sepium*. The presence of scrambling species such as *Galium aparine* contributes to the dense, unmanaged character of the hedgerows.

Due to its structural value and potential contribution to local ecological connectivity, this habitat is considered to be of **Local Importance (Higher Value)**, although its botanical value is limited by the dominance of *Rubus fruticosus* agg. and the presence of non-native woody species.



Plate 2 - Area of Hedgerows (WL1) found on site

Treelines (WL2)

Treelines (WL2) habitat was recorded throughout the site, including around the abandoned field in the south and along the eastern site boundary. The treelines on-site are very species-rich, with at least 49 species having been recorded across the site. There was also a high diversity of semi-natural woodland indicators, such as *Allium ursinum*. This canopy is dominated by *Acer pseudoplatanus*, with frequent *Fraxinus excelsior*, while other woody species in the canopy and understorey include *Quercus robur*, *Cupressus macrocarpa*, *Prunus spinosa*, *Crataegus monogyna*, *Prunus avium*, *Sambucus nigra*, *Fagus sylvatica*, *Pinus radiata*, *Tilia x europaea*, *Ilex aquifolium*, *Ulmus glabra*, *Salix cinerea* subsp. *oleifolia* and *Aesculus hippocastanum*.

The treelines support a mixture of native and non-native species. Native woody species such as *Fraxinus excelsior*, *Quercus robur*, *Crataegus monogyna*, *Prunus spinosa*, *Ilex aquifolium* and *Salix cinerea* subsp. *oleifolia* provide ecological value, although parts of the habitat are strongly influenced by non-native species, particularly self-sown and mature *Acer pseudoplatanus*. The understorey and field layer include *Rubus fruticosus* agg., *Hedera helix* agg., *Galium aparine*, *Urtica dioica*, *Heracleum sphondylium*, *Rumex obtusifolius*, *Ficaria verna*, *Allium ursinum*, *Smyrniolus olusatrum*, *Brachypodium sylvaticum*, *Equisetum arvense*, *Cirsium arvense* and *Geum urbanum*.

Due to its structural value and maturity with high semi-natural woodland species numbers, its wide distribution across the site and its role in local ecological connectivity, this habitat is considered to be of **Local Importance (Higher Value)**, despite the frequent occurrence of non-native species.



Plate 3 - Treelines (WL2) area found on the western edge of the site

Arable crops (BC1)

Arable crops (BC1) habitat was recorded within cultivated areas of the site, comprising a broad bean crop in the south and summer barley/wheat in the north-west. The associated arable weed flora was limited and included common species such as *Senecio vulgaris*, *Brassica rapa*, *Galium aparine*, *Sinapis arvensis*, *Chenopodium album*, *Arabidopsis thaliana*, *Poa annua*, *Lapsana communis*, *Cardamine hirsuta*, *Sonchus oleraceus*, *Veronica persica* and an *Epilobium* species. *Fumaria purpurea* was recorded in the east of the site, but as discussed previously in Section 4, this species is no longer considered to be rare in Co. Dublin. Due to its cultivated nature and low cover of associated wild plant species, this habitat is considered to be of **Local Importance (Lower Value)**.



Plate 4 - Arable crops (BC1), which takes up a majority of the site

Spoil and bare ground (ED2)

Spoil and bare ground (ED2) habitat consists of the access pathways in centre of the farm area of the site. These pathways are constructed of bare exposed soil with no plant species occurring on them. As such, this habitat is considered to be of **Negligible importance**.

Recolonising Bare Ground (ED3)

An area of recolonising bare ground was recorded in the southern portion of the site. This habitat comprises previously disturbed or exposed ground that is in early stages of vegetation recovery, with early colonist plant species beginning to establish on the bare substrate. Vegetation cover is sparse to moderate, reflecting the early successional stage of habitat recovery. This habitat is of degraded ecological value and does not support any legally protected or rare plant species. This habitat is of **Local importance (lower value)**.

(Mixed) broadleaved woodland (WD1)

A small area of (mixed) broadleaved woodland (WD1) is present to the south east of the site boundary, along the M11. The canopy is composed mainly of *Acer* spp., *Quercus robur* and *Fagus sylvatica*, with an understorey of *Ilex aquifolium*, *Crataegus monogyna* and *Sambucus nigra*. The ground flora includes *Hedera helix* and *Urtica dioica*. These woodlands contribute to structural diversity in the locality and provide nesting and foraging opportunities for birds and small mammals. This habitat is of **Local importance (higher value)**.

Hedgerow Descriptions

Hedgerow 1

Hedgerow 1 is a linear internal farm boundary located in the northern portion of the study area. It is a remnant hedgerow that appears on the 1830s to 1930s Cassini historical maps, indicating considerable age and historical continuity. The tree layer contains *Acer pseudoplatanus*. The shrub layer includes *Rubus fruticosus* agg., *Cornus sanguinea* and *Ulmus minor*. The ground flora is dominated by nutrient-enriched ruderal species, including *Urtica dioica*, *Galium aparine*, *Cirsium arvense* and *Heracleum sphondylium*, which are typical indicators of disturbance and high nutrient availability. The hedgerow is linked to other semi-natural habitats (Treelines (WL2)) and is flanked by Arable crops (BC1) on both sides. Despite the presence of ruderal ground flora, Hedgerow 1 supports good shrub species diversity and is therefore considered to be of **Local Importance (Higher Value)**.

Hedgerow 2

Hedgerow 2 is a linear internal farm boundary **treeline** which occurs within the eastern portion of the study area. The tree layer is composed of *Fraxinus excelsior*, *Fagus sylvatica*, *Acer pseudoplatanus*, *Pinus radiata*, *Quercus robur* and *Cupressus macrocarpa*. The shrub layer comprises *Hedera helix* agg., *Crataegus monogyna*, *Rubus fruticosus* agg., *Rosa canina* agg., *Sambucus nigra*, *Cornus sanguinea*

(planted) and *Ulmus minor*. The ground flora is comprised of both ruderal species and more positive indicator woodland/hedgerow species, including *Urtica dioica*, *Cirsium arvense*, and *Rumex obtusifolius*, with occasional *Galium aparine*, *Vicia sepium* and *Brachypodium sylvaticum*. The hedgerow connects with Treelines (WL2) on the southern side and Hedgerows (WL1) on the northern edge. Hedgerow 2 retains good woody species diversity and habitat connectivity and is therefore considered to be of **Local Importance (Higher Value)**.

Hedgerow 3

Hedgerow 3 is a non-linear farm boundary **treeline** which occurs within the south-eastern portion of the study area. It appears on the first edition OS, maps making it historically significant. The tree layer is composed of *Acer pseudoplatanus*, *Fraxinus excelsior* and *Tilia x europaea*. The shrub layer comprises *Crataegus monogyna*, *Rubus fruticosus* agg., *Sambucus nigra*, *Prunus spinosa* and *Ilex aquifolium*. The ground flora includes *Geum urbanum*, *Geranium robertianum*, *Ficaria verna*, *Veronica chamaedrys*, *Alliaria petiolata* and *Vicia sepium*, alongside ruderal species like *Galium aparine*, *Urtica dioica*, *Cirsium arvense* and *Rumex obtusifolius*. This hedgerow is connected to Treelines (WL2) habitat at both ends. Hedgerow 3 retains good species diversity, is historically significant and displays important habitat connectivity and is therefore considered to be of **Local Importance (Higher Value)**.

Hedgerow 4

Hedgerow 4 is a linear road boundary **treeline**, which occurs within the southern portion of the study area. This area appears on the first edition OS maps and its location along a throughway indicates it may even predate this map. The tree layer is composed of *Fraxinus excelsior*, *Acer pseudoplatanus*, *Castanea sativa* and some mature *Quercus robur*. The shrub layer comprises *Crataegus monogyna*, *Rubus fruticosus* agg., *Sambucus nigra*, *Prunus spinosa* and a single planted specimen of *Arbutus unedo*. The ground flora includes multiple semi-natural woodland/positive hedgerow indicator species, namely, *Geum urbanum*, *Geranium robertianum*, *Allium ursinum* and *Vicia sepium*. This hedgerow is connected to Treelines (WL2) habitat at both ends. This hedgerow is considered to be of **County Importance** given its impressive species diversity, habitat connectivity and historical context.

Hedgerow 5

Hedgerow 5 is a linear field boundary **treeline**, which occurs on the western edge of the study area. The tree layer is composed solely of *Acer pseudoplatanus*. The shrub layer comprises of *Rubus fruticosus* agg. The ground flora includes *Ficaria verna*, *Galium aparine* and *Urtica dioica*. This hedgerow is connected to Treelines (WL2) habitat at one end and Arable crops (BC1) habitat at the other. The ground layer is dominated by ruderal species. It is considered to be of **Local Importance (Higher Value)**, given its connective importance in the landscape and the presence of a few positive indicator hedgerow species such as *Ficaria verna*.

Hedgerow 6

Hedgerow 6 is a linear hedgerow, which occurs within the northernmost portion of the study area. There is no tree layer present here. The shrub layer solely comprises *Rubus fruticosus* agg. The ground flora includes *Urtica dioica* and *Rumex obtusifolius*. This hedgerow is connected to Improved agricultural grassland (GA1) habitat at one end and Spoil and bare ground (ED2) habitat at the other. This hedgerow is considered to be of **Local importance (Lower Value)** due to its lack of species diversity.

Hedgerow 7

Hedgerow 7 is an internal farm boundary **treeline**, which occurs within the south-western portion of the study area. The tree layer is composed of dominant planted *Cupressus macrocarpa*. The shrub layer is non-existent in this area. The ground flora includes *Geranium robertianum*, *Galium aparine*, *Urtica dioica* and *Heracleum sphondylium*. This hedgerow is connected to Treelines (WL2) habitat at one end and Hedgerows (WL1) on the other. This hedgerow is considered to be of **Local Importance (Lower Value)** due to its non-native composition.

Hedgerow 8

Hedgerow 8 is an internal farm boundary **treeline**, which occurs within the south-western portion of the study area. The tree layer is composed of *Fagus sylvatica*. The shrub layer is composed of *Crataegus monogyna*, *Rubus fruticosus* agg. and *Sambucus nigra*. The ground flora includes *Galium aparine* and *Urtica dioica*. This hedgerow is connected to Treelines (WL2) on both ends. This hedgerow is considered to be of **Local Importance (Higher Value)** due to its native shrub diversity and connectivity in the local landscape.

Assessment of Significance and Condition of Hedgerows

Hedgerow Significance

A summary of assessments of hedgerow significance is presented below in Table 1. This assessment follows the methodology outlined in Section 2 above, which follows Kelleher Ecology Services (2021) and Foulkes et al. (2013).

Table 1. Summary of significance criteria calculations for all hedgerows within the proposed development site

Hedgerow Reference Number	Historical Significance	Species Diversity	Ground Flora	Structure & Features	Connectivity	Landscape Significance	Total Score
1	1	1	0	0	2	2	6
2	2	4	1	3	2	2	14
3	3	2	3	4	2	3	17
4	3	3	1	3	3	3	16
5	1	0	0	0	1	1	3
6	1	0	0	3	2	1	7
7	1	1	0	0	1	1	4
8	1	1	0	2	2	1	7

As can be observed in Table 1 above, eight hedgerows were assessed using the Hedgerow Appraisal System (HAS), with total scores ranging from 3 to 17. Hedgerow 3 scored highest overall at 17, followed by Hedgerow 4 at 16 and Hedgerow 2 at 14. Using the HAS criteria, Hedgerows 2, 3 and 4 were identified as **Heritage Hedgerows**: Hedgerow 2 due to a score of 4 for species diversity, Hedgerow 3 due to a score of 4 for structure, construction and associated features and an overall score above 16, and Hedgerow 4 due to its cumulative score of 16 across the five core categories. The remaining hedgerows scored lower and did not meet Heritage Hedgerow criteria, although they may still provide local ecological value, particularly where they contribute to habitat connectivity and landscape structure.

Hedgerow Condition

A summary of assessments of hedgerow condition is presented below in

Table 2. This assessment follows the methodology outlined in Section 2 above, which follows Kelleher Ecology Services (2021 and Foulkes *et al.* (2013).

Table 2. Summary of condition assessment criteria calculations for all hedgerows within the proposed development site

Hedgerow Number	1	2	3	4	5	6	7	8
Structural Variables	3	3	3	3	2	2	2	2
Continuity	3	1	1	2	2	3	3	2
Negative Indicators/Degradation/Issues affecting long-term viability	1	2	2	2	1	3	0	0
Total	7	6	6	7	5	8	5	4

As can be observed in

Table 2 above, hedgerow 6 represents the hedgerow with the most favourable conditions within the study site. As noted by Foulkes *et al.* (2013), “A score of 0 in any category represents a hedgerow in Unfavourable Condition”. Therefore, under this criterion, hedgerow 7 and 8 should be considered as a hedgerow in ‘Unfavourable Condition’ (failed on at least one category).

Summary

This report presents a summary of findings from a habitat and hedgerow survey in May 2026 in a proposed development site at Old Conna, south Co. Dublin. It discusses the main habitat features and the species composition of the listed habitats found during the field survey, as well as any rare, invasive or noteworthy species on the site. 8 lengths of hedgerow were also surveyed as part of this assessment with 1-2 randomised sample transects being recorded in each. The mapping of habitats will be used to best inform the proposed development project. A total of 8 separate habitats types (and/or mosaics) were recorded across the study area. No Annex I habitats were recorded.

The results in terms of hedgerow significance showed that hedgerow 3 and 4 are the most important within the site. Hedgerows 2, 3 and 4 represent ‘Heritage Hedgerows’ and are of high importance. In particular, Hedgerow 4 is considered to be of County Importance. In terms of condition assessment of the hedgerows, hedgerows 7 and 8 can be considered as a hedgerow in ‘Unfavourable Condition’.

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Appendix I: Species Lists

Plant Species Lists per Habitat:

Drainage ditches (FW4)		Improved agricultural grassland (GA1)	
Scientific Name	%	Scientific Name	%
<i>Epilobium hirsutum</i>	20	<i>Schedonorus species</i>	1
<i>Equisetum telmateia</i>	40	<i>Dactylis glomerata</i>	5
<i>Ranunculus repens</i>	10	<i>Holcus lanatus</i>	65
		<i>Anthoxanthum odoratum</i>	3
		<i>Vicia sepium</i>	1
		<i>Vicia sativa</i> subsp. <i>segetalis</i>	0.5
		<i>Cardamine pratensis</i>	0.1
		<i>Potentilla reptans</i>	0.3
		<i>Ranunculus acris</i>	0.1
		<i>Festuca rubra</i> agg.	7
		<i>Agrostis species</i>	5
		<i>Taraxacum</i> agg.	0.5
		<i>Alopecurus pratensis</i>	10
		<i>Rumex obtusifolius</i>	5
		<i>Stellaria graminea</i>	0.3
		<i>Cirsium arvense</i>	1
		<i>Plantago lanceolata</i>	0.5
		<i>Poa trivialis</i>	7
		<i>Rumex acetosa</i>	0.1
		<i>Quercus robur</i>	0.3
		<i>Trifolium pratense</i>	1
		<i>Veronica chamaedrys</i>	0.1
		<i>Geranium dissectum</i>	0.1
		<i>Trifolium dubium</i>	0.1
		<i>Lolium perenne</i>	35
		<i>Ranunculus acris</i>	30
		<i>Plantago major</i>	3
		<i>Taraxacum</i> agg.	0.3
		<i>Poa annua</i>	3
		<i>Cerastium fontanum</i>	0.1
		<i>Ranunculus bulbosus</i>	1
		<i>Trifolium repens</i>	3
		<i>Bellis perennis</i>	0.1
		<i>Achillea millefolium</i>	5
		<i>Dactylis glomerata</i>	0.1
		<i>Jacobaea vulgaris</i>	0.3
		<i>Agrostis capillaris</i>	15

		<i>Poa trivialis</i>	10
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Treelines (WL2)		Arable crops (BC1)	
Scientific Name	%	Scientific Name	%
<i>Tilia x europaea</i>	1	<i>Senecio vulgaris</i>	0.5
<i>Acer pseudoplatanus</i>	60	<i>Lapsana communis</i>	0.1
<i>Fraxinus excelsior</i>	30	<i>Poa annua</i>	0.1
<i>Prunus spinosa</i>	3	<i>Brassica rapa</i>	1
<i>Vicia sepium</i>	0.3	<i>Galium aparine</i>	1
<i>Rubus fruticosus</i> agg.	20	<i>Cardamine hirsuta</i>	0.1
<i>Buddleia davidii</i>	0.3	<i>Epilobium species</i>	0.1
<i>Heracleum sphondylium</i>	0.3	<i>Arabidopsis thaliana</i>	0.3
<i>Rumex sanguineum</i>	0.1	<i>Fumaria purpurea</i>	0.1
<i>Ficaria verna</i>	0.1	<i>Sonchus oleraceus</i>	0.1
<i>Galium aparine</i>	1	<i>Chenopodium album</i>	0.3
<i>Urtica dioica</i>	1	<i>Sinapis arvensis</i>	1
<i>Petasites pyrenaicus</i>	0.3	<i>Veronica persica</i>	0.1
<i>Veronica chamaedrys</i>	0.3		
<i>Cordyline australis</i>	0.1		
<i>Euphorbia hyberna</i>	0.1		
<i>Allium ursinum</i>	0.1		
<i>Sambucus nigra</i>	1		
<i>Arctium minus</i> s.l.	0.1		
<i>Smyrnium olusatrum</i>	0.3		
<i>Hedera helix</i> agg.	10		
<i>Prunus avium</i>	1		
<i>Crataegus monogyna</i>	3		
<i>Rumex obtusifolius</i>	1		
<i>Arbutus unedo</i>	0.1		
<i>Castanea sativa</i>	0.1		
<i>Geranium robertianum</i>	0.1		
<i>Ulmus minor</i>	0.1		
<i>Glechoma hederacea</i>	0.1		
<i>Clematis vitalba</i>	0.5		
<i>Cirsium vulgare</i>	0.1		
<i>Allium triquetrum</i>	0.1		
<i>Ilex aquifolium</i>	0.5		
<i>Brachypodium sylvaticum</i>	0.3		
<i>Anisantha sterilis</i>	0.1		
<i>Rosa canina</i> agg.	0.3		
<i>Pinus radiata</i>	1		
<i>Cupressus macrocarpa</i>	7		
<i>Salix cinerea</i> subsp. <i>oleifolia</i>	0.3		

<i>Cornus sanguinea</i> (planted)	0.3		
<i>Fagus sylvatica</i>	1		
<i>Chamerion angustifolium</i>	0.1		
<i>Carex pendula</i>	0.1		
<i>Aesculus hippocastanum</i>	0.5		
<i>Equisetum arvense</i>	1		
<i>Ranunculus acris</i>	0.1		
<i>Ulmus glabra</i>	0.3		
<i>Cirsium arvense</i>	1		
<i>Quercus robur</i>	5		
<i>Geum urbanum</i>	0.1		

Hedgerows (WL1)	
Scientific Name	%
<i>Rubus fruticosus</i> agg.	90
<i>Cornus sanguinea</i> (planted)	1
<i>Galium aparine</i>	3
<i>Urtica dioica</i>	3
<i>Vicia sepium</i>	0.3
<i>Heracleum sphondylium</i>	0.5
<i>Arrhenatherum elatius</i>	3
<i>Festuca rubra</i> agg.	0.3
<i>Buddleia davidii</i>	0.3
<i>Clematis vitalba</i>	1
<i>Holcus lanatus</i>	1
<i>Sambucus nigra</i>	3
<i>Cirsium arvense</i>	0.5
<i>Ulmus minor</i>	5
<i>Acer pseudoplatanus</i>	0.7

Appendix II: Hedgerow Appraisal Data

Hedgerow Reference Number	1	2	3	4	5	6	7	8
Date of Recording	14/05/2026	14/05/2026	14/05/2026	14/05/2026	14/05/2026	14/05/2026	14/05/2026	14/05/2026
Surveyors	AF	AF	AF	AF	AF	AF	AF	AF
b1. Aspect Side 1	S	W	S	N	E	S	N	W
b2. Aspect Side 2	N	E	N	S	W	N	S	E
A1. Adjacent Land Use Side 1	a (tillage)	a (tillage)	h (other)	l (fodder)	a (tillage)	a (tillage)	a (tillage)	a (tillage)
A2. Adjacent Land Use Side 2	a (tillage)	h (other)	a (tillage)	h (other)	h (other)	a (tillage)	h (other)	h (other)
B. History							1 (internal farm boundary)	
B1. History Road / Stream								
B1a. Road Class								
B2 History Ordnance Survey								
B3 Sites and Monuments Record	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B4 Old Woodland Link	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C1. Adjacent Land Class Side 1	BC1	BC1	GA1	GA1	GA1	GA1	BC1	bc1
C2. Adjacent Land Class Side 2	N/A	GA1	BC1	BL3	BL3	GA1		BL3
D1. Habitat Link Class End 1	WL2	WL2	WL2	WL2	WL1	WL1	wl2	wl2
D2. Habitat Link Class End 2	BL3	WL1	WL2	WL2	WL2	GA1	wl2	wl2
D3. Designated Site								
E. Boundary Function	Active boundary	Active boundary	Active boundary	Active boundary	Active boundary	Active boundary	Active boundary	Active boundary
F. Outline	Linear	Linear	Linear	Linear	Linear	Linear	Linear	Linear
G1. Linearity of Shrubs	Single line	Single line	Single line	Single line	Single line	Single line	Single line	Single line
G2. Bank, Wall, Shelf	N/A	Bank	Bank	N/A	N/A	N/A	N/A	N/A
G3. Drain	N/A	Internal	External	N/A	N/A	N/A	N/A	N/A
G4. Fossil Class	WL1	WL2	WL2	WL2	WL2	WL1	WL2	
H. Bank, Wall, Shelf size		0.5 - 1 m	0.5 - 1 m	<0.5 m	N/A			
I1. Drain Size	N/A	0.5 - 1 m	0.5 - 1 m	N/A	N/A			
I2. Drain wet/dry	Dry	Wet	Dry	N/A	N/A			
J. Profile	Boxed/A-shaped	Overgrown/irreg	Overgrown/irreg	Overgrown/irreg	Overgrown/irreg	Boxed/A-shaped	Overgrown/irregula	Wind-shaped
J1. Profile base suffix	Outgrowths at ba	Outgrowths at ba	Losing basal struc	Losing basal struc	Losing basal struc	Losing basal struc	Outgrowths at base	Outgrowths at base
K. Height	2.5 - 4 m	5+ m	5+ m	5+ m	5+ m	1.5 - 2.5 m	5+ m	5+ m
K1. Height o/head cables	Overhead wires/	Overhead wires/	Overhead wires/	Overhead wires/	N/A	Overhead wires/	N/A	N/A
L. Width	3+ m	2 - 3 m	3+ m	1 - 2 m	2 - 3 m	3+ m	3+ m	3+ m
M. % of Gaps	Complete	25 - 50%	25 - 50%	10 - 25 %	25 - 50%	Complete	Complete	5 - 10%
M1. Specific or general	General gaps	Individual gap >5	General gaps	General gaps	Individual gap >5 m			General gaps
N. Base Structure	Dense/Opaque	Scrawny/Semi-tr	Semi-opaque	Semi-opaque	Dense/Opaque	Dense/Opaque	Dense/Opaque	Semi-opaque
N1. Base - Vegetation	Lower 1 m filled	Lower 1 m filled	Lower 1 m filled	Lower 1 m filled	Lower 1 m filled	Lower 1 m filled with brambles/other	Lower 1 m filled with b	
O. Bank Degradation Degree	None	None	Severe	N/A	None			
O1. Bank Degradation Extent								
P. Trees Quantity	<15%	>75%	>75%	>75%	31 - 75%	None		
Q. Tree Age Composition	Predominantly in	All mature	All mature	All mature	All mature			
Q1. Tree Height (max)	5 - 10 m	>20 m	>20 m	>20 m	5 - 10 m			
Q2. Tree Height (min)	3 - 5 m		5 - 10 m	5 - 10 m	3 - 5 m			
R. Verge / Margin Width Side 1	1 - 2 m	1 - 2 m	4+ m	4+ m	<1 m	None		
R2. Verge / Margin Side 1 Degradation	Ploughed within	Ploughed within	None	None	Ploughed within	Ploughed within	Ploughed within 2 m	Ploughed within 2 m
R3. Verge / Margin Width Side 2	1 - 2 m	None	None	None	<1 m	None		
R4. Verge / Margin Side 2 Degradation	None	None	None	None	Ploughed within	Ploughed within	Ploughed within 2 m	None
S. Vigour	Average	Good	Evidence of disea	Average	Average	Average	Average	Good
U. Management	Short term unma	Long term unman	Long term unman	Long term unman	Short term unma	Cut A shape	Topped	
U1. Management - out of season	N/A	N/A	N/A	N/A	N/A			
U2. Management Stage	Healthy and man	Treeline	Overmature with	Overmature with	Treeline			
V. Management Method	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
W. Evidence of Rejuvenation - Past	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
W1. Evidence of Laying - Recent	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
X. Fencing Side	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
X1. Fencing Side 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
X3. Fencing wire to stems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Y. Ground Flora								
Notes			ash dieback potential					

	1 30m a	1 30m b	2 30m a	2 30m b	3 30m a	3 30m b	4 30m a	4 30m b	5 30m a	6 30m a	7 30m a	8 30m a
Shrub Recording Form (Domin Scale)												
Crataegus monogyna			3	6		5 4	5	3				7
Rubus fruticosus agg.	10	8	7	7		6 6	7	7	6		10	7
Rosa canina agg.				4								
Sambucus nigra			4			3	4	5				6
Prunus spinosa						3	1					
Arbutus unedo								1				
Ilex aquifolium						5						
Cornus sanguinea	3		3									
Ulmus minor		8		2								
Climbers And Trees Recording Form												
Climbers (DAFOR, except Hedera helix agg. which is either present, P, if in ground/shrub layer, or absent, X)												
Hedera helix agg. (P/X)	P	P	P	P	P	P	P	P	P		P	P
Clematis vitalba			P									
Trees (Present, P/Dominant, D)												
Fraxinus excelsior				P	P	P	P	P				
Fagus sylvatica			P									P
Tilia x europaea					P							
Acer pseudoplatanus		P	P		P	P	P	P	D			
Castanea sativa								P				
Pinus radiata			D									
Quercus robur				P			P					
Cupressus macrocarpa			P								D	
Ground Flora etc. Recording Form (Present, P)												
Geum urbanum					P		P					
Geranium robertianum					P	P	P	P			P	
Ficaria verna				P	P				P			
Veronica chamaedrys					P	P						
Alliaria petiolata					P							
Allium ursinum							P					
Vicia sepium	O		P	P	P	P		P				
Brachypodium sylvaticum				P								
Other (negative indicator species, etc.) (DAFOR)												
Galium aparine		F	O	F	R	R	R		O		F	A
Urtica dioica	R		O	R	R	O	O	F	O	O	O	O
Cirsium arvense	R	O	R			O						
Rumex obtusifolius			R		R		O			O		
Heracleum sphondylium	R	R									R	

Appendix III: Criteria for Ecological Evaluations⁴

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.

⁴ Framework and table is taken and adapted from: National Roads Authority (2009). *Guidelines for Assessment of Ecological Impacts of National Roads Schemes*. Report for National Roads Authority.

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.

Appendix III: Hedgerow Image Samples



Plate 5 - Sample stretch of Hedgerow 1



Plate 6 - Sample stretch of Hedgerow 2



Plate 7 - Sample stretch of Hedgerow 3



Plate 8 - Sample stretch of Hedgerow 4



Plate 9 - Sample stretch of Hedgerow 7



Appendix C - A bat and ground mammal assessment of Old Connaught Road, Bray, County Wicklow





A bat and ground mammal assessment of Old Connaught Road, Bray, County Wicklow

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For Castlethorn Old Connaught UCL
01/06/2026

Summary

This report presents the results of bat surveys conducted at Old Connaught, Bray, over two survey seasons in October 2025 and May 2026, comprising four active survey nights, a static detector deployment in October 2025 (nine nights), and a further static deployment in May–June 2026 (twelve nights). Four bat species were recorded in active surveys — common pipistrelle, soprano pipistrelle, Leisler's bat, and brown long-eared bat — with an additional unidentified *Myotis* species recorded by static detector. No bat roosts were identified on site; however, the maturity of trees present and the preliminary roost features identified during tree assessment indicate roosting potential, and all mature trees must be checked prior to felling. Activity was notably higher during the May 2026 surveys, with sustained common pipistrelle feeding recorded along the dividing treeline, consistent with the presence of a breeding roost in the wider area. The static detector recorded 1,570 passes over the October 2025 period and 4,647 passes over May–June 2026, dominated by common pipistrelle. Mitigation measures are recommended including bat box installation, restriction of tree works to outside the breeding season, dark sky designations, and lighting controls in accordance with current Irish and EU guidance. Bat species found feeding and commuting on the site

Common pipistrelle	<i>Pipistrellus pipistrellus</i>
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>
Leisler's bat	<i>Nyctalus leisleri</i>
Brown long-eared bat	<i>Plecotus auritus</i>
Myotis species	<i>Myotis nattereri</i> / <i>Myotis mystacinus</i>

Ground Mammals present

Pine marten	<i>Martes martes</i>
Badger	<i>Meles meles</i>
Fox	<i>Vulpes vulpes</i>
Rabbit	<i>Oryctolagus cuniculus</i>
Mouse species	<i>Mus musculus</i> , <i>Apodemus sylvaticus</i>
Brown rat	<i>Rattus norvegicus</i>

Recommendations

(1) No work can take place on the trees from May to September as bats may be breeding.

(2) 6 bat tree boxes and 8 Schwegler 2F Schwegler bat boxes with front panels, must be put in place. These should be placed on trees or posts, at least 3m high, with a clear drop below (as bats need to drop to start their flight). These can be purchased from www.nhbs.com (or using the links included below) and must be placed in a dark area.

Bat tree box - https://www.quickcrop.ie/products/bat-tree-box-vkws8.html?searchid=1989103&search_query=bat+boxes

Schwegler 2F bat box - https://www.quickcrop.ie/products/schwegler-bat-box-2f-with-double-front-panel.html?searchid=1989104&search_query=bat+boxes

(3) Bats will suffer a loss of feeding. Native shrubs and trees must be used within the new development. Where other climbers and shrubs are required, they should be taken from the approved list from the All-Ireland Pollinator Plan: pollinators.ie/wp-content/uploads/2023/04/Top-Ten-pollinator-plants-Guide-WEB.pdf



Semi-mature and mature trees and hedgerow should be planted within the new development.

(4) Mature trees across the site shall be evaluated by an ecologist prior to felling and where trees have obvious features with roost potential, the tree shall be more closely inspected using a MEWP or another suitable method of elevation and inspection. If bats are discovered at any stage of the development, works must cease and both an ecologist and the Conservation wildlife Ranger must be contacted.

(5) A dark sky area must be designated within the development to provide commuting and feeding corridors, and light spillage and pollution must be kept to a minimum with the use of cowls, caps, and low-level bollard lighting where possible.

Lighting design will be in accordance with:

Bats and Lighting – Guidance Notes for Planners, Engineers, Architects and Developers (Bat Conservation Ireland, 2010) https://www.batconservationireland.org/wp-content/uploads/2013/09/BCIrelandGuidelines_Lighting.pdf

Bats and Artificial Lighting at Night, Institute of Lighting Professionals, 2023 <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

Guidance Notes for the Reduction of Obtrusive Light GN01-21 (Institute of Lighting Professionals, 2021) <https://theilp.org.uk/publication/guidance-note-1-for-the-reduction-of-obtrusive-light-2021/>

Dark Sky Ireland's Environmentally Friendly Lighting Guide <https://www.darksky.ie/lighting-documents/#guidelines>

(6) Monitoring of the bat boxes should take place within a year of the development being built, and the location of the bat boxes should be changed if they are unused and their site is unsuitable.

(7) Potential or confirmed setts within the site shall be examined by a badger specialist and excluded if required using a means approved by NPWS. This may require the use of badger gates, sett closure and supervision of the excavation by the badger specialist.

Hedgehog access points shall be incorporated into the site from each perimeter fence / wall. Hedgehogs require a minimum width and height of 13 cm X 13 cm for access. This may be achieved in a number of ways but should be marked as not for closure to prevent accidental blocking of access.

INTRODUCTION

All of Ireland's bats and many terrestrial mammals are protected by national and EU legislation. Any changes to a site that have the potential to affect the viability of populations of these species and any operations likely to put protected species at risk must be evaluated to determine the likelihood of impacts, the severity of impacts and the duration of impacts and to propose means by which the impacts can either be avoided entirely or lessened to such an extent that they do not affect the conservation status of any protected species.

This assessment examines the bat and ground mammal fauna of lands at Old Conna, Bray, County Wicklow that are zoned for housing and for which a planning application is in process. The assessment includes a desktop survey of known data from the site as well as fieldwork to determine the presence of protected species and to thus allow an understanding of the potential for impacts upon the mammals present.

Protection of the fauna present is provided by the Irish enactment of European Communities (Birds and Natural Habitats) Regulations 2011, the former Habitats Directive ((Council Directive 92/43/EEC)) and Birds Directive (Directive 2009/147/EC on the conservation of wild birds) under the Wildlife Act (1976), Wildlife

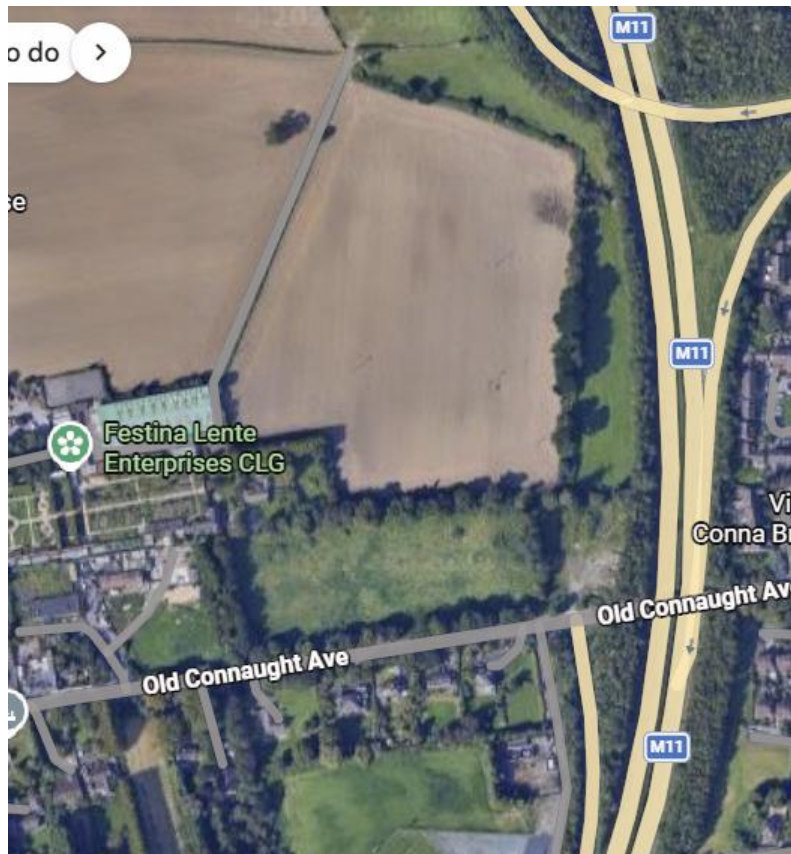


(Amendment) Act 2000 and all subsequent Statutory Instruments and the recognition of the part played by Planning and Development in wildlife protection is reflected in the Planning and Development Act 2000 and all subsequent amendments.

Preliminary survey details

Desktop survey of the existing environment

Connectivity – Map of site showing the wider area with ecological features



National Biodiversity Data Centre records of protected ground mammal species within the Old Connaught townland May 28 2026



Species list for 'OLDCONNAUGHT' (Within)



Badger (Meles meles)	4	03/02/2017	Mammals of Ireland 2016-2025	Protected Species: Wildlife Acts
Grey Squirrel (Sciurus carolinensis)	3	08/01/2016	Mammals of Ireland 2016-2025	EU Invasive Alien Species Regulation No. 1143/2014
Hedgehog (Erinaceus europaeus)	4	23/01/2023	Hedgehogs of Ireland	Protected Species: Wildlife Acts
Red Fox (Vulpes vulpes)	3	14/01/2018	Mammals of Ireland 2016-2025	

Lux Levels

0 lux central field

2 Lux Northern field

7 Lux at streetlamp.

Wednesday, 22/10/2025 (evening survey) Sunset: 18:24 | Weather: Cool and dry, approximately 11°C. Light cloud cover.



Thursday, 23/10/2025 (*dawn re-entry*) Sunrise: 07:53 | Weather: Light to moderate rain with strong wind, approximately 10°C.

Wednesday, 29/10/2025 (*evening survey*) Sunset: 17:00 | Weather: Cool with light rain showers, approximately 7°C.

Thursday, 30/10/2025 (*dawn re-entry*) Sunrise: 07:21 | Weather: Light rain and drizzle, approximately 7°C.

Sunday, 11/05/2026 (*evening survey*) Sunset: 21:15 | Weather: Cool and overcast, approximately 13°C.

Monday, 12/05/2026 (*dawn re-entry*) Sunrise: 05:37 | Weather: Cool and partly cloudy, approximately 4°C.

Thursday, 21/05/2026 (*evening survey*) Sunset: 21:31 | Weather: Mild with moderate wind, approximately 19°C.

Friday, 22/05/2026 (*dawn re-entry*) Sunrise: 05:20 | Weather: Mild and dry, approximately 12°C.

Proposed works

The proposed development comprises 271no. dwellings in a mix of houses and duplex / apartment units, including 103no. 2 to 3 storey houses (22no. 4-bedroom, 68no. 3-bedroom, and 13no. 2-bedroom houses), 162no. apartments (113no. 2-bedroom and 49no. 1-bedroom) across 4no. blocks ranging from 1-5 storeys in building height and 6no. 3-bedroom duplex units; 1no. creche (c. 574 sqm) at ground floor of apartment block 3; and soft landscaping and boundary treatment works, including: public open space; communal open space; components of the regional attenuation pond; public lighting; surface car parking spaces; bicycle parking spaces/stores for houses and duplex / apartment units; 4no. ESB substations; 4no. ESB substations; bin stores; vehicular access via existing Old Connaught Avenue and proposed new primary north-south street into easter portion of the Central Character Area. The proposed development also includes the construction of a new pumping station, twin rising mains extending circa 400m along Old Connaught Avenue 125m east of the M11 bridge and associated storage, together with all ancillary site development and reinstatement works required to facilitate these elements.





Complexity of lands and ability to cover ground during surveys

All areas were accessible

Survey constraints

(1) Mobility of bats: Bat species are mobile and can move from roost to roost, depending on roost availability, feeding availability and weather conditions. They may move to roosts which have not been identified in this report in order to hibernate or create mating or feeding perches. A bat survey is a snapshot of bat activity over the survey time.

(2) Identification of bats: It can be difficult to differentiate *Myotis* species. For this reason, sound files are included within the report. Brown long eared bats are very quiet, and their presence can be overlooked in bat surveys as they may not register on bat detectors.

(3) Timing of survey: Bat surveys generally take place when the bats are active – May – September. A bat survey which takes place outside these dates may miss roosting activity. Because of this the precautionary principle is applied and trees will be checked manually for roosting bats prior to any felling.

Methodology

Bats

Surveyors

Ferdia Keeley, Brian Keeley, Saoirse Keeley and Oscar Monaghan of Wildlife Surveys Ireland carried out this survey.

Equipment

- ☐ Exide Lamps (one per surveyor)
- ☐ Petzl Tikka Head torches (one per surveyor)
- ☐ BatLogger M2 time expansion detectors and Kaleidoscope Pro sound analysis software with GPS (one per surveyor)
- ☐ One thermal imager per surveyor
- ☐ One Songmeter Mini Bat detector placed for a number of weeks at old Connaught.
- ☐ Mobile phones for communication during the survey (one per surveyor)
- ☐ One lux meter per surveyor

Survey procedure

Surveyors arrive on site shortly before sunset. All lands, trees, buildings and hedgerows are assessed for suitability for bats, including their suitability as feeding habitat and/or suitability as bat roosts. Areas and features with high potential are identified throughout the site and used as points of interest during the active survey. Survey routes are planned so that a surveyor can efficiently cover as much land as possible while maintaining a focus on these key points of interest. Larger sites are divided up into sections to be covered across multiple nights. Static bat monitoring devices are placed near areas and features of especially high interest, particularly features that bats may be using as roosts, in order to provide a timeline of bat activity throughout the night.

Over the next 90 minutes, surveyors cover the walkable area of the site along their planned routes, with adjustments being made to account for especially high or low bat activity in an area – for example, a surveyor may examine a tree associated with a high level of bat activity, as it may be a bat roost. After the 90 minutes have elapsed, most bats will already have emerged from their roosts in order to feed for the night, making the period shortly after sunset one of the best times to identify roosts and feeding habitats.

Surveyors return to a site approximately 90 minutes before sunrise the next morning. At this time, any changes in temperature and weather conditions are noted, as well as any other factors (e.g. street lighting) that may have impacted bat activity during the night. Surveyors cover the site area again, this time with particular attention paid to possible roosts, as bats can be seen returning to their roosts during this time period. Any static monitors left out the previous night are collected for analysis.

Surveys are conducted with reference to the following documents –



1. NPWS BAT MITIGATION GUIDELINES FOR IRELAND – V2 Ferdia Marnell, Conor Kelleher & Enda Mullen
2. Heritage Council's Bat Survey Guidelines for the Traditional Farm Buildings Scheme
3. Bat Surveys for Professional Ecologists – Good Practice Guidelines 4th Edition, 2024. Developed on behalf of the Bat Conservation Trust
4. C.I.E.E.M Bat Mitigation Guidelines 2023

We feel that both emergence and return surveys are necessary on most occasions and go beyond these guidelines to ensure dawn roosts are located.

Survey:

Assessment of buildings as potential roosts with photos

Tree assessment

Description of trees with PBR values – Ground level tree assessment

Tree Bat Roost Category Classification System (Collins, 2016).

Tree Category

Description 1 Trees with multiple, highly suitable features (Potential Roosting Features = PRFs) capable of supporting larger roosts;

Description 2 Trees with definite bat potential but supporting features (PRFs) suitable for use by individual bats;

Description 3 Trees have no obvious potential although the tree is of a size and age that elevated surveys may result in cracks or crevices being found or the tree supports some features (PRFs) which may have limited potential to support bats;

Description 4 Trees have no potential.

Many of the trees on-site contained high bat roosting potential on account of their maturity and contained a number of features that pose potential for either individual bats or multiple bats.





Description 1 treeline including Split Horse chestnut, field border.



Split in Horse chestnut, Prf-M





Description 1 ash/sycamore field border treeline



Description 4 conifer treeline southern field.





Description 1 oak southern field.



Description 1/2 treeline, southern border.

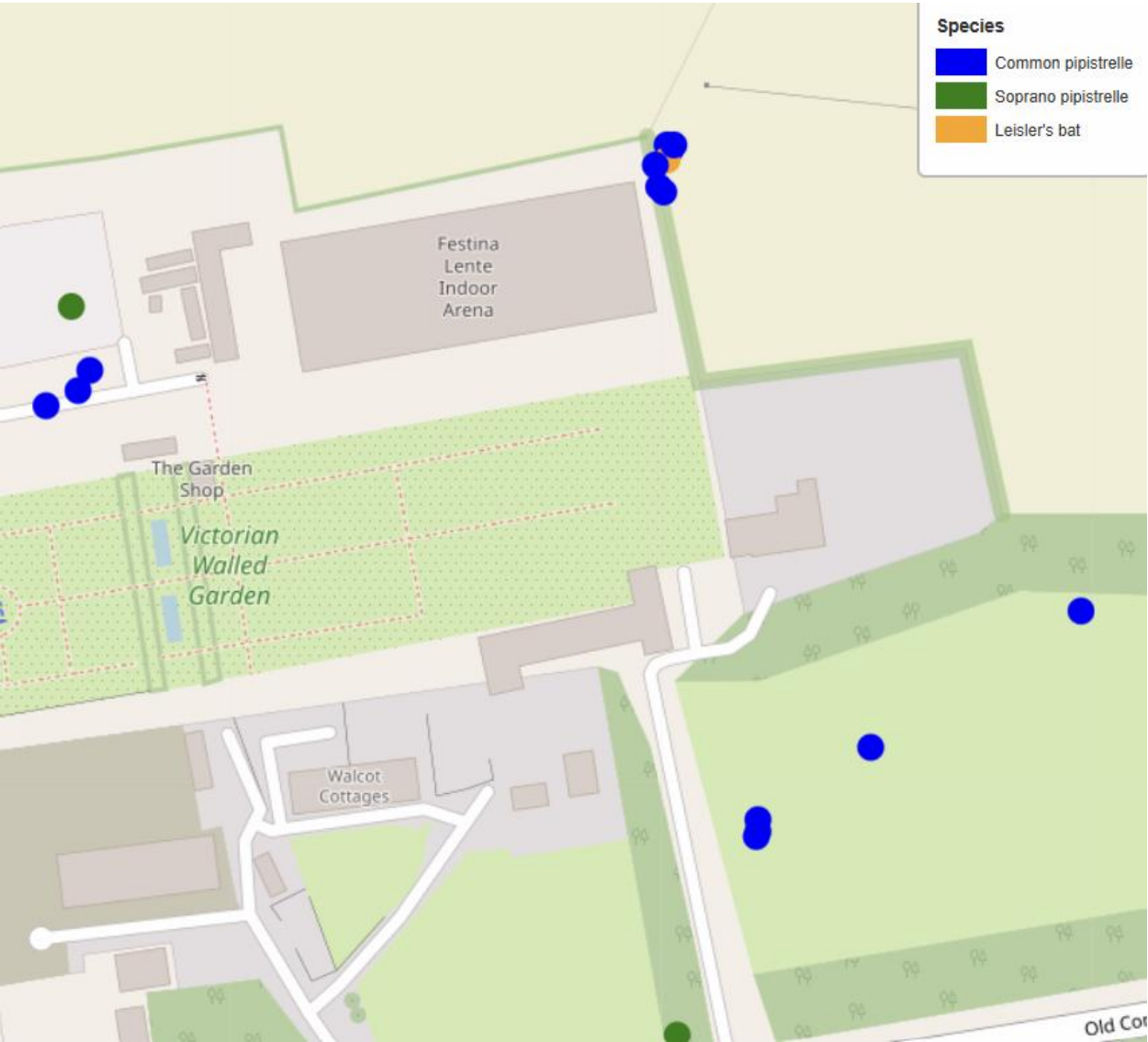
Emergence/re-entry survey



Bat activity was recorded during the evening transect survey conducted on 22 October 2025. At 18:41, one common pipistrelle (*Pipistrellus pipistrellus*) passed Surveyor 1 in the southern area of the site. At 19:10, one soprano pipistrelle (*Pipistrellus pygmaeus*) was recorded by Surveyor 1 in the southern area. At 19:29, one common pipistrelle was again recorded by Surveyor 1 in the southern area. At 19:39, one common pipistrelle passed Surveyor 2 in the northern area of the site.

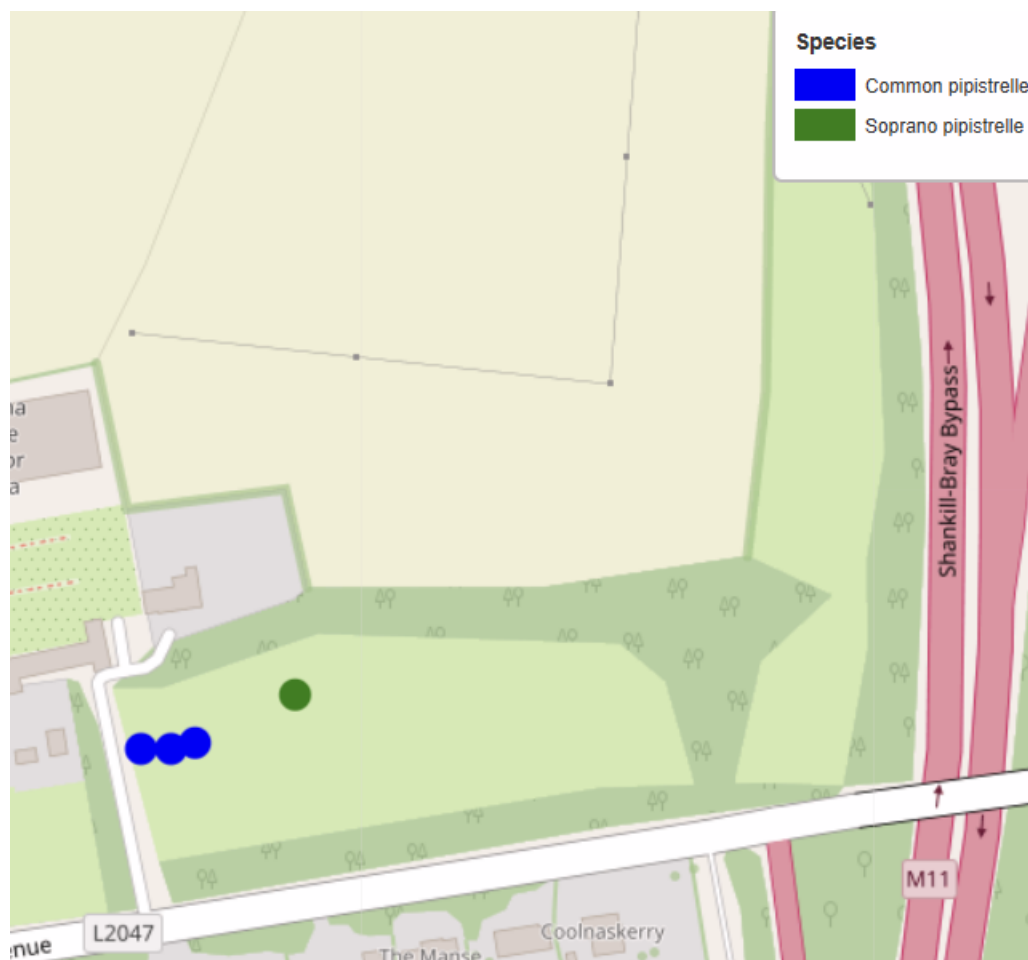
October 22, 2025

Bat Species	Passes Per Hour		
	6	7	Grand Total
Leisler's Bat	3		3
Soprano Pipistrelle	1	1	2
Grand Total	4	1	5



During the repeat evening survey on 29 October 2025, one soprano pipistrelle was recorded by Surveyor 2 in the northern area at 17:24. One pipistrelle sp. was also recorded by Surveyor 3 during the same survey.

Bat Species			
Hour	6	18	Total
Common Pipistrelle	3		3
Soprano Pipistrelle		1	1
Grand Total	3	1	4



No bat activity was recorded during the dawn re-entry surveys on the 30th October 2025.

2026 survey

May 2026 – Evening Survey

At 21:28, one soprano pipistrelle was recorded by Surveyor 1 in the southern area of the site. At 21:30, one soprano pipistrelle pass was recorded by Surveyor 1 at the northeastern corner of the southern field flying southwest. At 21:31, one soprano pipistrelle passed Surveyor 2 in the southern area feeding along this treeline briefly. At 21:32, a further pipistrelle was recorded by Surveyor 2, observed flying along the treeline between fields. At 21:35, three bat passes were recorded by Surveyor 2, with two individual bats observed flying along a collection of trees in the southern area. At 21:37, one Leisler's bat was recorded by both Surveyor 1 and Surveyor 2 in the southern area, with the same individual believed to be commuting back and forth. Soprano pipistrelle passes were subsequently recorded by Surveyor 2 at 21:38, 21:39, 21:41, 21:45, 21:46, 21:48, 21:49, and 21:52. One soprano pipistrelle was recorded by Surveyor 1 at 21:47 in the

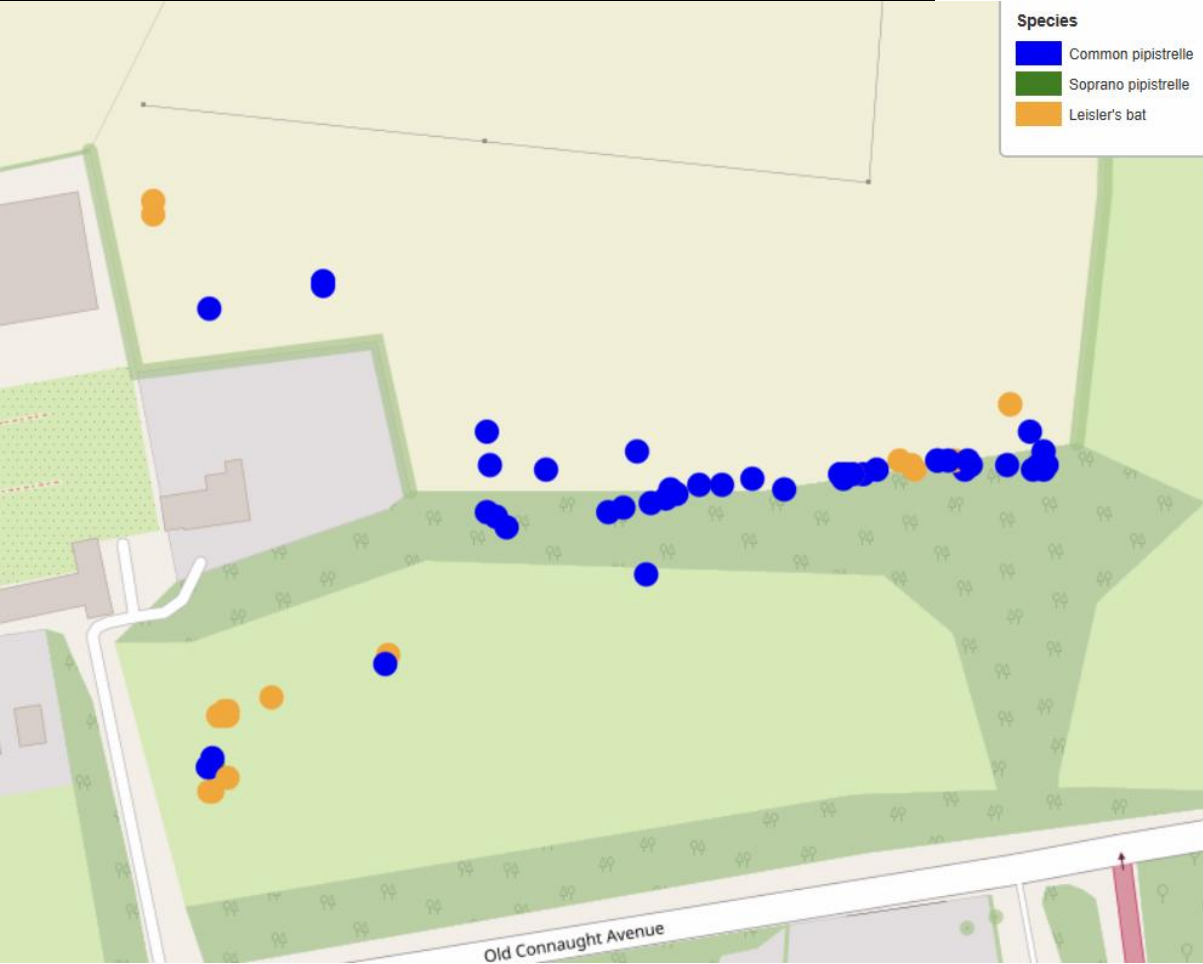


southern area. One common pipistrelle was recorded by Surveyor 1 at 21:56 and again at 21:58. One Leisler's bat was recorded by Surveyor 1 at 21:52 and again at 22:03 in the southern area.

12 May 2026 – Dawn Survey

One soprano pipistrelle was recorded by Surveyor 1 at 05:00 in the southern area. One distant pipistrelle was recorded by Surveyor 2 at 04:34 along the treeline between fields.

Bat Species				
Hour	9	10	4	Grand Total
Leisler’s Bat	5	1	1	7
Common Pipistrelle	1			1
Soprano Pipistrelle	1			1
Grand Total	7	1	1	9



Bat species					
Hour	9	10	4	5	Grand Total
LEISLER’S BAT	25	1	1		27



Bat species					
COMMON PIPISTRELLE	45	7		1	53
SOPRANO PIPISTRELLE	1				1
Grand Total	71	8	1	1	81

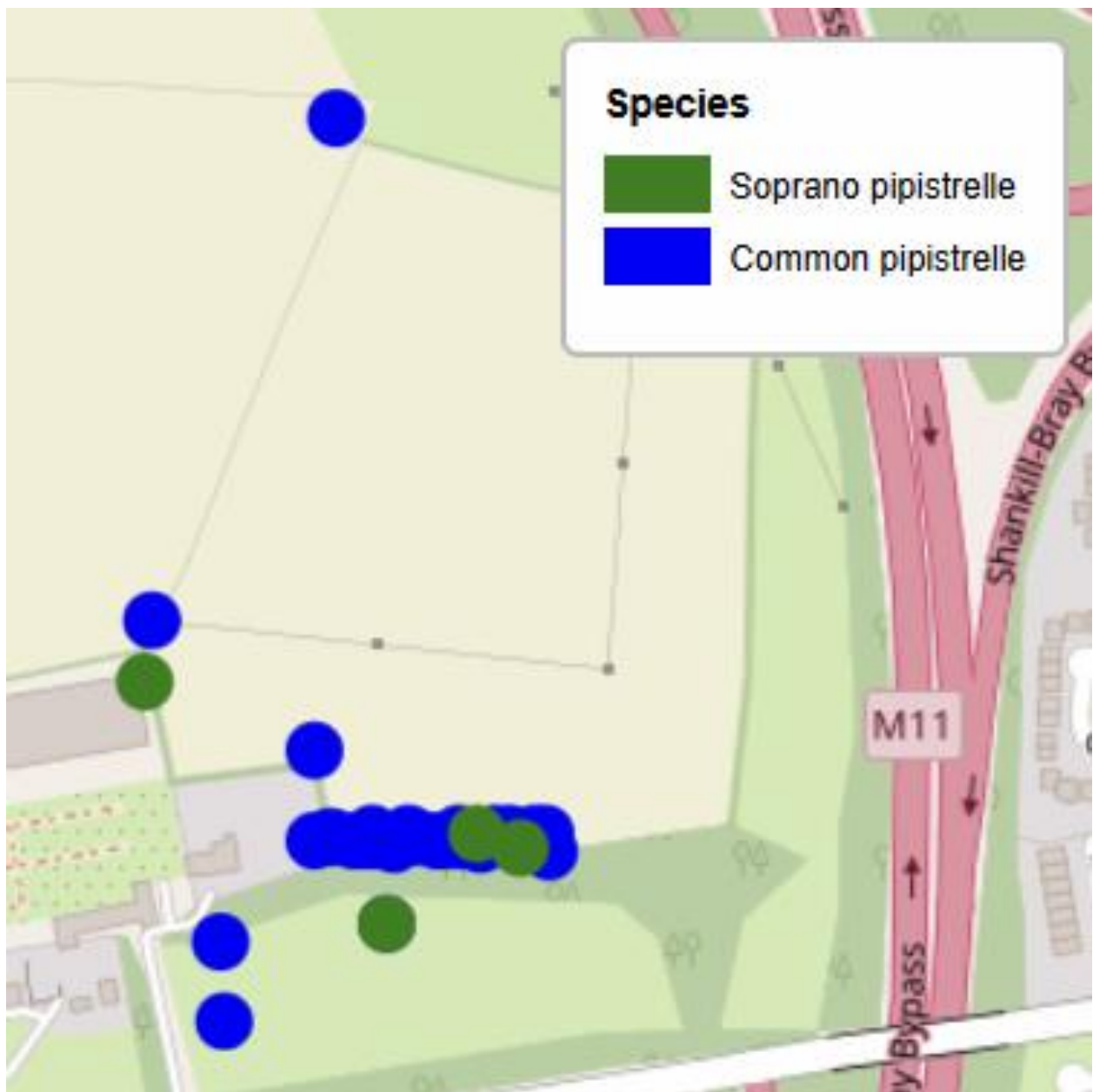
21 May 2026 – Evening Survey

Bat activity was notably higher than on previous visits. Multiple common pipistrelle passes were recorded by Surveyor 1 feeding along the treeline in the southern area from 21:47 onwards, with soprano pipistrelle also present from 21:51. Sustained feeding activity by between 4 and 6 common pipistrelles were recorded along the central treeline through to 23:00, with soprano pipistrelle recorded at 21:51, 22:03, 22:50, and 23:00. Leisler's bat was recorded by Surveyor 1 at 22:19 and again at 22:40 in the southern area feeding briefly on both occasions.

22 May 2026 – Dawn Survey

Common pipistrelle was recorded by Surveyor 1 feeding consistently along the treeline in the southern area from 04:23. Numerous passes were recorded at this time at the Oak in the Northern field.





Bat species					
Hour	9	10	4	5	Grand Total
COMMON PIPISTRELLE	22	45	2	12	81
SOPRANO PIPISTRELLE	2	13	10	9	34
Grand Total	24	58	12	21	115

May Static monitoring period



Date						
Bat Species	Myotis	LEISLER'S BAT	COMMON PIPISTRELLE	SOPRANO PIPISTRELLE	BROWN LONG-EARED	Grand Total
21/05/2026	1	13	27	18	1	60
21-May	1	13	27	18	1	60
22/05/2026	14	84	336	60	1	495
22-May	14	84	336	60	1	495
23/05/2026	5	52	515	7		579
23-May	5	52	515	7		579
24/05/2026	5	104	221	13	2	345
24-May	5	104	221	13	2	345
25/05/2026	11	55	172	12		250
25-May	11	55	172	12		250
26/05/2026	14	44	108	10	1	177
26-May	14	44	108	10	1	177
27/05/2026	6	61	243	11		321
27-May	6	61	243	11		321



Date						
28/05/2026	2	82	642	19		745
28-May	2	82	642	19		745
29/05/2026		61	465	20		546
29-May		61	465	20		546
30/05/2026		45	307	11	1	364
30-May		45	307	11	1	364
31/05/2026	7	80	514	17		618
31-May	7	80	514	17		618
01/06/2026		17	124	6		147
01-Jun		17	124	6		147
Grand Total	65	698	3674	204	6	4647

Old Connaught, Bray — Static Detector Bat Passes (October 2025)				
Date	Leisler's bat	Common pipistrelle	Soprano pipistrelle	Grand Total
22/10/2025	19	9	1	29
23/10/2025	64	—	7	71
24/10/2025	62	43	756	861
25/10/2025	125	25	11	161



Old Connaught, Bray — Static Detector Bat Passes (October 2025)				
26/10/2025	66	11	—	77
27/10/2025	52	9	18	79
28/10/2025	87	2	2	91
29/10/2025	114	1	—	115
30/10/2025	86	—	—	86
Grand Total	675	100	795	1570

Old Connaught, Bray — Static Detector Bat Passes (October 2025)				
Date	Common pipistrelle	Soprano pipistrelle	Leisler's bat	Grand Total
22/10/2025	9	1	19	29
23/10/2025	—	7	64	0
24/10/2025	43	756	62	861
25/10/2025	25	11	125	161
26/10/2025	11	—	66	0
27/10/2025	9	18	52	79
28/10/2025	2	2	87	91
29/10/2025	1	—	114	0
Grand Total	100	795	589	1221

Results of survey

Four bat species were identified, with another unidentified *Myotis* species being recorded.

Results of data collected over a number of months with four nights of survey conclude that this site is of great significance to bat life, although no bat roosts were found. While activity was considerably sparser, numbers greatly increased in May with the onset of the breeding season, particularly for common pipistrelle bats. Common pipistrelle activity was extremely high in May, indicating a likelihood of a large roost situated near the site. Although no roosts were identified onsite the maturity of trees onsite paired with potential roost features identified in the tree survey, indicates a possibility of bat roosting in these trees. To mitigate against this all mature trees should be checked prior to felling.

Ground Mammals



Protected mammal species within the site (with the exception of bats):

Pine marten

Badger

Most field signs were attributable to common mammal species (or dogs). No other species noted is protected by the Wildlife Act.

Ground Mammals present based on field signs	
Badger	<i>Meles meles</i>
Fox	<i>Vulpes vulpes</i>
Pine marten	<i>Martes martes</i>
Rabbit	<i>Oryctolagus cuniculus</i>
Mouse species	<i>Mus musculus</i> , <i>Apodemus sylvaticus</i>
Brown rat	<i>Rattus norvegicus</i>

Badger signs were not noted within the site during any of the visits; from October 2025, through November 2025 and into May 2026. There were two small burrows with badger sett potential, but these were not in use during this assessment.



Possible one- entrance sett within the southern area of the site. The entrance to this burrow is narrow and it may be an abandoned sett or a larger rabbit burrow entrance.



Track to narrow-(one) entranced burrow with badger sett potential towards the northern end of the site and close to the motorway. This was not in use at any recent time when examined in November 2025.





Fox scat (left) and potential pine marten scat (right). These scats differed in size and scent. The left dung was relatively large and very overpowering and musky while the right dung was smaller and narrower and sweet-smelling.

Most field signs were attributable to fox. This included paw prints and scats. Most paw prints noted were of domestic dogs, which are walked within the grounds. One pine marten scat was noted towards the northern end of the site, and a previous possible pine marten scat had been noted in this area.

There was no evidence of badger occupancy at the time of survey but there are two possible minor setts, each with one narrow entrance and both overgrown and entirely obscured by the May 2026 visit.





-  Pine marten scat
-  Possible badger setts

Ground mammal signs for protected mammal species within the site 2025-2026

Potential impacts

Predicted Impacts Before Mitigation

(1) Loss of feeding and commuting habitat. Three species of bat are feeding and commuting along and within the grassland and hedgerow which may be removed in this development. This will not affect the conservation status of any species present even in the absence of mitigation.

This will have a moderate long-term impact on individuals within these species.

Ground mammals

There is no conclusive evidence of active dwellings of protected mammals (there are potential badger setts, but these were inactive or entirely dormant). There is a loss of habitat for badgers (if present) and pine martens.

(2) Loss of roosting habitat. The trees if allowed develop would have roosting potential. Removal of the trees and hedgerow will have a slight long-term impact on individual bats.

(3) Light Pollution -Lighting of the development and areas around it will have a moderate long-term impact on individual bats.

Character of Impacts

- Identify the aspect of the environment affected.
- Describe whether the impact is positive, neutral or negative.
- Highlight significant impacts (positive and negative).
- Indicate whether the impact will be temporary, short, medium or long-term; Construction phase, post construction, etc.
- Highlight permanent impacts.
- Magnitude:



- Quantify the amount or intensity by which the character/quality of any aspect of the environment will change (i.e. how much pollution).
- Indicate the spatial extent of the impact (will some, much or all of the areas be affected).
- Describe the degree of change; (i.e. imperceptible, slight, noticeable or significant).
- Highlight profound (i.e. complete) changes of character.
- Duration:
 - State whether the impact will be continuous, intermittent or occasional.
 - Indicate whether the impact will be temporary, short, medium or long-term.
- Consequences:
 - Identify the receptors which will be affected, indicating their sensitivity and significance.
 - Indicate whether the impact can be avoided mitigated or remedied.
 - State whether compensation is available, possible or acceptable.
 - Highlight irreversible impacts.
 - Highlight when the consequence cannot be determined.

Mitigation and recommendations

Mitigation measures should follow the hierarchy of 1) avoid the impact, 2) reduce or minimise the scale or severity of the impact and, if these are not possible, then 3) abate the impact at the source or 4) abate the impact at the receptor through provision of alternative feeding areas, roosts or flight path features (e.g. hedgerows, treelines). (*Bat Conservation Ireland Appropriate Assessment Guidelines*)

Mitigation by remedy

(1) No work can take place on the Trees from May to September as bats may be breeding.

(2) 6 bat tree boxes and 8 Schwegler 2F Schwegler bat boxes with front panels, must be put in place. These should be placed on trees or posts, at least 3m high, with a clear drop below (as bats need to drop to start their flight). These can be purchased from www.nhbs.com (or using the links included below) and must be placed in a dark area.

Bat tree box - https://www.quickcrop.ie/products/bat-tree-box-vkws8.html?searchid=1989103&search_query=bat+boxes

Schwegler 2F bat box - https://www.quickcrop.ie/products/schwegler-bat-box-2f-with-double-front-panel.html?searchid=1989104&search_query=bat+boxes

(3) Bats will suffer a loss of feeding. Native shrubs and trees must be used within the new development. Where other climbers and shrubs are required, they should be taken from the approved list from the All-Ireland Pollinator Plan: pollinators.ie/wp-content/uploads/2023/04/Top-Ten-pollinator-plants-Guide-WEB.pdf

Semi-mature and mature trees and hedgerow should be planted within the new development.

(4) Mature trees across the site shall be evaluated by an ecologist prior to felling and where trees have obvious features with roost potential, the tree shall be more closely inspected using a MEWP or another suitable method of elevation and inspection. If bats are discovered at any stage of the development, works must cease and both an ecologist and the Conservation wildlife Ranger must be contacted.

(5) A dark sky area must be designated within the development to provide commuting and feeding corridors, and light spillage and pollution must be kept to a minimum with the use of cowls, caps, and low-level bollard lighting where possible



Lighting design will be in accordance with:

Bats and Lighting – Guidance Notes for Planners, Engineers, Architects and Developers (Bat Conservation Ireland, 2010) https://www.batconservationireland.org/wp-content/uploads/2013/09/BCIrelandGuidelines_Lighting.pdf

Bats and Artificial Lighting at Night, Institute of Lighting Professionals, 2023 <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

Guidance Notes for the Reduction of Obtrusive Light GN01-21 (Institute of Lighting Professionals, 2021) <https://theilp.org.uk/publication/guidance-note-1-for-the-reduction-of-obtrusive-light-2021/>

Dark Sky Ireland's Environmentally Friendly Lighting Guide <https://www.darksky.ie/lighting-documents/#guidelines>

(8) Monitoring of the bat boxes should take place within a year of the development being built, and the location of the bat boxes should be changed if they are unused and their site is unsuitable.

There are several ways of lessening the impact of lighting upon bats. A number of these are given here:

- 1. Lighting must be cowed if required to prevent light overspill on to surrounding trees**

Light modelling would provide appropriate information on how light will be restricted from the trees while providing illumination for pedestrians and cyclists. Internal louvres are the most efficient means of controlling light overspill/pollution.

- 2. Lighting operation should be based on levels of activity**

This should mirror the levels of use of the infield area. Lighting is unnecessary except at times of darkness and when games or training is under way.

- 3. Lighting should be sufficiently controlled to provide for low levels at ground level.** The design should strive to achieve 3 lux at ground level in the case where bats are found to be present, through landscaping or similar, to control spill as required. It is easier to control light overspill from shorter columns, but this is not possible for sports lighting. The measures below may assist in creating darker areas for bats that would in some areas be less than 3 lux.

- 4. LED lights should be considered as the option for the lighting**

LED lights are an energy efficient and highly controllable light source, are highly adaptable in terms of direction and strength and can be timed to switch on and off as they light quickly to the level required. These should ensure energy efficiency and money-saving as well as ecological advantages.

- 5. Planting should be used to reduce / prevent light overspill and create commuting corridors**

Planting of treelines and hedgerow can prevent lighting from creating a barrier to movement and provide feeding for birds and mammals lost by the removal of vegetation. This should include species that will grow to tree height rather than low shrubs.

(6) Monitoring of the bat boxes should take place within a year of the development being built, and the location of the bat boxes should be changed if they are unused and their site is unsuitable.

(9) Potential or confirmed setts within the site shall be examined by a badger specialist and excluded if required using a means approved by NPWS. This may require the use of badger gates, sett closure and supervision of the excavation by the badger specialist.



(10) Hedgehog access points shall be incorporated into the site from each perimeter fence / wall. Hedgehogs require a minimum width and height of 13 cm X 13 cm for access. This may be achieved in a number of ways but should be marked as not for closure to prevent accidental blocking of access.

Hedgehog access options



Predicted Impacts After Mitigation

(1) Loss of feeding and commuting habitat. The addition of semi-mature trees and hedgerows within the development will reduce this to a slight medium-term negative impact on individuals within these species.

(2) Loss of roosting habitat. The addition of bat boxes will reduce this to a slight medium-term negative impact on individual bats, as no roosts have been confirmed onsite. This will reduce to a negligible long-term impact once bat boxes are put in place.

(3) Light pollution. The designation of dark sky areas within the development, combined with the lighting measures outlined above, will reduce this to a slight long-term negative impact on individual bats.

With full implementation of the mitigation measures outlined in this report, no long-term negative impact on local bat populations is predicted.

Bat Biology

Female bats gather in groups known as maternity roosts in summer to have their young. They generally have one baby each year, so are slow to reproduce, and disturbance of a maternity roost can be catastrophic.

In winter bats move to old stonework, trees and caves to hibernate. They are especially vulnerable here as they are slow to awaken, and if tree felling is carried out, they can easily be killed.

Species descriptions from Bat Conservation Ireland (2025), Biodiversity Ireland (2025) and further as listed below:

Common Pipistrelle and Soprano Pipistrelle



Pipistrellus pipistrellus and *Pipistrellus pygmaeus*

Ireland's two smallest bat species, and also the commonest, the common and soprano pipistrelles are the bats most likely to be seen flying around soon after dusk in both urban and rural areas. Both have a rapid, twisting flight as they pursue tiny prey of midges, mosquitoes and small moths. A single pipistrelle (weighing no more than 5-6g, the weight of a 1-euro piece) may consume as many as 3,000 of these insects in one night. Pipistrelles are frequently found roosting in houses, although they also roost in other locations such as tree holes. In houses they prefer to occupy confined spaces such as behind hanging tiles and soffit boards or between roofing felt and roof tiles, rather than the main attic space.

The two are called common and soprano because the latter echolocates at a higher frequency peaking at 55kHz, compared with the former which echolocates at a peak frequency of 46kHz. The soprano pipistrelle tends to form nursery (or maternity) roosts with larger numbers of individuals (up to 1,500) compared with the common pipistrelle which would typically have a much smaller nursery roost size.

Trends in these species are monitored annually using the [Car-based Bat Monitoring Scheme](#). Results from this scheme indicate that since 2003 the soprano pipistrelle has increased significantly while the common pipistrelle has also increased, albeit more slowly. The reasons for these increases are poorly understood but both species may be recovering from past declines, or responding to increased woodland cover and/or climate change.

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A

Source: NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Least Concern

Global: Least Concern

Sources: (1) Marnell, F. et al 2009; (2) Hutson T., et al 2007 (3) Hutson, A.M. et al 2008

Legal status

Protected by the following legal instruments:

- Habitats Directive (92/43/EEC), Annex IV
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II
- Agreement on the Conservation of Populations of European Bats (EUROBATS)
- Wildlife Act (1976)
- Wildlife (Amendment) Act (2000)
- Wildlife (N.I.) Order of 1985

Nathusius' pipistrelle

Pipistrellus nathusii

The first confirmed Irish breeding colony of this bat was discovered in May 1997 near Lough Neagh. Since then it has been found across Northern Ireland but mainly close to Loughs Neagh and Erne. The Nathusius' pipistrelle has been recorded by bat detector in a number of counties in the Republic and small roosts have been found here but it has not yet been confirmed breeding. This bat has similar features to the two other



pipistrelles so it is possible that it has been under-recorded in roosts, or the Irish population may be recent in origin.

Research by the Centre for Irish Bat Research suggests that its population is expanding due to global warming. The Nathusius' pipistrelle is migratory in Europe, migrations of more than 1,600km have been recorded between summer and hibernation sites. It is not known whether the Irish population migrates within or from Ireland to another country to overwinter, although there is evidence that Nathusius' pipistrelle bats migrate from Britain to overwinter on continental Europe. The Nathusius' pipistrelle often forages over water or along forest tracks.

The species is recorded by the [Car-based Bat Monitoring Scheme](#), although in such low numbers that its annual population trend is difficult to establish with certainty.

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Unknown

Population: Unknown

Habitat: Favourable

Future Prospects: Unknown

Overall Assessment of Conservation Status: Unknown

Overall Trend in Conservation Status: N/A

Source: NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Least Concern

Global: Least Concern

Sources: (1) Marnell, F. et al 2009; (2) Hutson T., et al 2007 (3) Hutson, A.M. et al 2008

Legal status

Protected by the following legal instruments:

- Habitats Directive (92/43/EEC), Annex IV
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II
- Agreement on the Conservation of Populations of European Bats (EUROBATS)
- Wildlife Act (1976)
- Wildlife (Amendment) Act (2000)
- Wildlife (N.I.) Order of 1985

Leisler's bat

Nyctalus leisleri

This is the biggest Irish bat and it is often found roosting in buildings although 13% of its roosts recorded in Ireland have been in trees. The Leisler's bat has distinctive level flight at greater heights than the other Irish species, from which it dives down after dung flies and beetles. It can be seen soon after sunset flying over open spaces such as parks and fields. Because it is one of the first bats to emerge in the evening and is quite large, the Leisler's may be confused with swifts that may also be flying around. They are best told apart by the wing shape, the swift's wings are smoothly curved and scimitar-like. Swifts also shriek, while the Leisler's bat is inaudible without a bat detector. The Leisler's bat is rare in Britain and the rest of Europe but it is relatively common here. For this reason the Irish population of Leisler's bats is considered of International Importance.



Leisler's bat is monitored by the [Car-based Bat Monitoring Scheme](#) and its annual trend has shown significant increases since 2003. The reasons for the increase is poorly understood but it may be recovering from past declines, or responding to increased woodland cover and/or climate change.

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A

Source: NPWS 2013.

IUCN Conservation Status

Ireland: Near Threatened

Europe: Least Concern

Global: Least Concern

Sources: (1) Marnell, F. et al 2009; (2) Hutson T., et al 2007 (3) Hutson, A.M. et al 2008

Legal status

Protected by the following legal instruments:

- Habitats Directive (92/43/EEC), Annex IV
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II
- Agreement on the Conservation of Populations of European Bats (EUROBATS)
- Wildlife Act (1976)
- Wildlife (Amendment) Act (2000)
- Wildlife (N.I.) Order of 1985

Daubenton's bat

Myotis daubentonii

Often called the 'water bat', this species is easily recognised in flight by its low, level flight a few centimetres above the surface of lakes, slow-moving rivers and canals. It skims like a hovercraft above the water in search of caddisflies, mayflies and midges, and may even scoop prey from the water surface using its big feet. Many other bats feed over lakes and rivers, but none has such a close association with water as the Daubenton's. The Daubenton's bat can even swim if it makes a mistake and ends up in the water.

Daubenton's bats roost under stone bridges, in ruins, canal tunnels, trees and damp caves.

The Daubenton's bat annual trend is monitored using a volunteer-based programme – the [All Ireland Daubenton's Bat Waterways Survey](#). This scheme has been ongoing since 2006 and the Daubenton's bat trend has been reasonably stable since this time.

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A

Source: NPWS 2013.



IUCN Conservation Status

Ireland: Least Concern

Europe: Least Concern

Global: Least Concern

Sources: (1) Marnell, F. et al 2009; (2) Hutson T., et al 2007 (3) Hutson, A.M. et al 2008

Legal status

Protected by the following legal instruments:

- Habitats Directive (92/43/EEC), Annex IV
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II
- Agreement on the Conservation of Populations of European Bats (EUROBATS)
- Wildlife Act (1976)
- Wildlife (Amendment) Act (2000)
- Wildlife (N.I.) Order of 1985

Natterer's bat

Myotis nattereri

One of the rarer Irish bat species, the Natterer's bat likes woodland, mature hedgerow and pasture habitats. The Natterer's bat has broad wings so can fly with great manoeuvrability among trees and around hedgerows. It sometimes gleans insects or even spiders from foliage and may eat larger prey at a feeding perch. Its usual roost sites are in tree holes, old stone buildings such as churches and barns, and under bridges. This species has a fringe of stiff bristles along the trailing edge of its tail membrane, which may help to hold or trap its prey.

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A

Source: NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Least Concern

Global: Least Concern

Sources: (1) Marnell, F. et al 2009; (2) Hutson T., et al 2007 (3) Hutson, A.M. et al 2008

Legal status

Protected by the following legal instruments:

- Habitats Directive (92/43/EEC), Annex IV
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II
- Agreement on the Conservation of Populations of European Bats (EUROBATS)
- Wildlife Act (1976)
- Wildlife (Amendment) Act (2000)
- Wildlife (N.I.) Order of 1985



Whiskered bat

Myotis mystacinus

Another uncommon and little-known bat, the whiskered is closely related to the Natterer's, Daubenton's and Brandt's bats. The whiskered bat typically forages along forest tracks or near water. It has a rapid fluttering flight and flies along a regular 'beat' over and over again. It is sometimes found roosting in attics of old buildings but there are very few confirmed roosts in Ireland. It is also sometimes found roosting in crevices under stone bridges and in trees.

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A

Source: NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Least Concern

Global: Least Concern

Sources: (1) Marnell, F. et al 2009; (2) Hutson T., et al 2007 (3) Hutson, A.M. et al 2008

Legal status

Protected by the following legal instruments:

- Habitats Directive (92/43/EEC), Annex IV
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II
- Agreement on the Conservation of Populations of European Bats (EUROBATS)
- Wildlife Act (1976)
- Wildlife (Amendment) Act (2000)
- Wildlife (N.I.) Order of 1985

Brown long eared bat

Plecotus auritus

The huge ears of this bat are its most distinctive feature – they are almost as long as the body. Although they are probably quite common in Ireland, it is difficult to see long-eared bats in flight because they prefer to forage in woodland flying amongst the foliage, picking moths and other insects off leaves. These bats emit their quiet echolocation sounds through their nose. Larger prey items such as noctuid moths are taken to a feeding perch, often in a porch or outhouse. These perches are recognisable by the piles of insect remains, such as moth wings, which collect under them. The long-eared bat roosts in buildings such as houses with large attic spaces, churches, outbuildings and in tree holes.

A scheme for monitoring the brown long-eared bat at its roosts was developed in 2007 (the [Brown Long-eared Bat Roost Monitoring Scheme](#)). Thus far its population has been stable.

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable



Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A

Source: NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Least Concern

Global: Least Concern

Sources: (1) Marnell, F. et al 2009; (2) Hutson T., et al 2007 (3) Hutson, A.M. et al 2008

Legal status

Protected by the following legal instruments:

- Habitats Directive (92/43/EEC), Annex IV
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II
- Agreement on the Conservation of Populations of European Bats (EUROBATS)
- Wildlife Act (1976)
- Wildlife (Amendment) Act (2000)
- Wildlife (N.I.) Order of 1985

Lesser Horseshoe Bat

Rhinolophus hipposideros

The lesser horseshoe bat belongs to the Rhinolophidae family of bats, while the other resident species belong to the Vespertilionidae family. Horseshoe bats differ from the Vespertilionid bats in that they have a number of flaps or folds of skin around their nostrils, called a noseleaf, that form a horseshoe shape. The lesser horseshoe hangs freely by its feet and wraps its wings around its body, the only Irish species to do so.

The range of the lesser horseshoe bat in Ireland is, for the most part, limited to six western counties – Clare, Cork, Galway, Kerry, Limerick and Mayo. The species has been recorded once in Roscommon and twice in Sligo. Fragments of a lesser horseshoe bat skeleton have been found alongside prehistoric remains in a cave in Waterford, indicating that it was formerly more widespread on the island. It roosts mainly in roofs of old houses or in outhouses, stables or old cottages. In winter this species hibernates in caves, disused cellars, mines and souterrains. The lesser horseshoe bat's distribution in the west is strongly linked with broadleaved and mixed woodland and it usually forages in woodland and scrub.

The Irish population of this species is estimated at 14,000 individuals and is considered of International Importance because it has declined dramatically and become extinct in many other parts of Europe.

In Ireland the species has been counted regularly in winter and summer roosts since the 1980s by the [National Parks and Wildlife Service](#) and, more recently, also by [The Vincent Wildlife Trust](#). Bat Conservation Ireland currently manages [this scheme to monitor the species](#). Data collected from this scheme shows that the species increased significantly between from the early 1990s to present. Population increases may be the result of improved protection, increased woodland cover or climate change, or a combination of these and other reasons.

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable



Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A

Source: NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Near Threatened

Global: Least Concern

Sources: (1) Marnell, F. et al 2009; (2) Hutson T., et al 2007 (3) Hutson, A.M. et al 2008

Legal status

Protected by the following legal instruments:

- Habitats Directive (92/43/EEC), Annex IV
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II
- Agreement on the Conservation of Populations of European Bats (EUROBATS)
- Wildlife Act (1976)
- Wildlife (Amendment) Act (2000)
- Wildlife (N.I.) Order of 1985

Legislation

Bats are protected under the 1996 Wildlife Act, the 2000 Wildlife (Amendment) Act, S.I. No 477 of 2011, The Habitats Directive, The Bonn and Bern Convention, and the Eurobats agreement.

The European Community (Natural Habitats) Regulations S.I. No 477 of 2011 states:

51. (1) The Minister shall take the requisite measures to establish a system of strict protection for the fauna consisting of the species referred to in Part 1 of the First Schedule. (2) Notwithstanding any consent, statutory or otherwise, given to a person by a public authority or held by a person, except in accordance with a licence granted by the Minister under Regulation 54, a person who in respect of the species referred to in Part 1 of the First Schedule— (a) deliberately captures or kills any specimen of these species in the wild, (b) deliberately disturbs these species particularly during the period of breeding, rearing, hibernation and migration, (c) deliberately takes or destroys eggs of those species from the wild, (d) damages or destroys a breeding site or resting place of such an animal, or (e) keeps, transports, sells, exchanges, offers for sale or offers for exchange any specimen of these species taken in the wild, other than those taken legally as referred to in Article 12(2) of the Habitats Directive, shall be guilty of an offence. (3) The prohibitions referred to in paragraph (2) shall apply to all stages of life of the biological cycle of fauna to which this Regulation applies. (4) The Minister shall establish a system to monitor the incidental capture and killing of fauna consisting of the animal species referred to in Part 1 of the First Schedule and, having regard to the information gathered, he or she shall conduct further research or take such conservation measures as required to ensure that incidental capture and killing does not have a significant negative impact on the species concerned.

The EU Habitats Directive (92/43/EEC) lists all Irish bat species in Annex IV and one Irish species, the lesser horseshoe bat (*Rhinolophus hipposideros*), in Annex II. Annex II includes animal and plant species of community interest whose conservation requires the designation of Special Areas of Conservation (SACs) because they are endangered, rare, vulnerable or endemic. Annex IV includes various species that require strict protection. Article 11 of the Habitats Directive requires member states to monitor all species listed in the Habitats Directive and Article 17 requires States to report to the EU on the findings of monitoring schemes.



The Bern and Bonn Conventions:

Ireland is also a signatory to a number of conservation agreements pertaining to bats such as the Bern and Bonn Conventions. The European Bats Agreement (EUROBATS) is an agreement under the Bonn Convention. Ireland and the UK are two of the 31 signatories. The Agreement has an Action Plan with priorities for implementation. Devising strategies for monitoring of populations of selected bat species in Europe is among the resolutions of EUROBATS.

1.3.1 The Bern Convention:

Article 6 of the “Convention on the Conservation of European Wildlife and Natural Habitats’ (Berne Convention) reads:

“Each Contracting Party shall take appropriate and necessary legislative and administrative measures to ensure the special protection of the wild fauna species specified in Appendix II. The following will in particular be prohibited for these species:

- a) all forms of deliberate capture and keeping and deliberate killing;
- b) the deliberate damage to or destruction of breeding or resting sites;
- c) the deliberate disturbance of wild fauna, particularly during the period of breeding, rearing and hibernation, insofar as disturbance would be significant in relation to the objectives of this Convention; ...

Appendix II lists strictly protected fauna species and this list includes “Microchiroptera, all species except *Pipistrellus pipistrelles*”.

The EUROBATS Agreement:

The ‘Agreement on the Conservation of Populations of European Bats’ (EUROBATS) was negotiated under the ‘Convention for the Conservation of Migratory Wild Species’ (Bonn Convention) and came into force in January 1994. The legal protection of bats and their habitats are given in Article III as fundamental obligations:

“1. Each Party shall prohibit the deliberate capture, keeping or killing of bats except under permit from its competent authority

2. Each Party shall identify those sites within its own area of jurisdiction which are important for the conservation status, including for the shelter and protection, of bats. It shall, taking into account as necessary economic and social considerations, protect such sites from damage or disturbance. In addition, each Party shall endeavour to identify and protect important feeding areas for bats from damage or disturbance.”

The Agreement covers all European bat species.

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About Our Team

Wildlife Surveys Ireland Ltd. was founded by Brian Keeley and Donna Mullen. The company undertakes a variety of ecological evaluations and operations and have provided advice to County Councils, government departments, NPWS, OPW, developers, individuals applying for planning applications, local community



groups, Tidy Towns organisations and many more. Brian and Donna have been engaged in bat detector surveys since the late 1980s on a voluntary basis, and were first trained by Bat Conservation Trust in 1992. They have been involved in surveying for over 30 years and have surveyed in every county on the island of Ireland.

Brian and Donna are engaged in all surveys undertaken by Wildlife Surveys Ireland and are involved in the fieldwork for all larger projects or where there is a project that requires long-term experience and expertise. All reports are co-written by either Director and the principal fieldworker, to ensure that they address the issues of bat conservation correctly and thoroughly.

We trial our mitigation at our own nature reserve in North Meath – Golashane Nature Reserve, so we have first hand knowledge of working mitigation.

Our company was a finalist in the RDS Rural Sustainability Awards in May 2022. In 2019, we achieved a Rural Inspiration Award and presented our work on our nature reserve to Mr Phil Hogan in Brussels. A tree is planted on our reserve for each survey and 5% of our company profits are given to charities.

Brian Keeley BSc (Hons) zool

Director

Brian has been involved in overseas survey work in Wales, England, France, Hungary and Poland and was involved in the compilation of the NRA / TII publications on bat survey and mitigation for roads. Brian has been involved in bat conservation since 1988 and founded the Dublin Bat Group (and later Bat Conservation Group Dublin) and Bat Conservation Ireland and has served as chair of this group for much of its existence. Brian is still a Council member of BC Ireland. Brian has been vaccinated against Rabies and is licensed to disturb roosts for the purpose of survey.

Donna Mullen M.P.P.M D.E.N.V.S.P

Director

Donna Mullen is a founder member of Bat Conservation Ireland and the Irish Environmental Network. She was involved in drawing up the guidelines for the Heritage Council on bats and traditional farm buildings and has worked on providing new roosts and adapting old roosts to facilitate bats. This work includes surveying, advising architects, working with derogations and monitoring. She has also worked with the Irish Landmark Trust and the OPW providing advice on castles and old buildings. She has a strong interest in environmental law and worked on case 183/05 which was successful in the ECJ. She has recently published a book “Make Your Home A Nature Reserve” – O Brien Press, and is a frequent contributor on wildlife matters with the Claire Byrne Show on RTE. Donna has been vaccinated against Rabies and is licensed to disturb roosts for the purpose of survey.

Ferdia Keeley BSc (Hons). Cert in Field survey techniques

Field ecologist

Ferdia Keeley has been undertaking bat surveys for seven years. During this time, he has been tutored by both Brian and Donna in bat activity survey techniques and has operated a variety of bat detectors including Echometer EM2 and EM3, Echometer Touch, Echometer Touch 2 Pro, Anabat, Batbox III, Pettersson D240X and most recently Batlogger M2. Ferdia has also installed static monitors within sites: Songmeter 2, Songmeter Mini Bat and Songmeter Mini Bat 2. Ferdia has been trained in bat tree surveys with Flight Ecology Surveying England.. He is training with Bat Conservation Ireland for trapping techniques and has been training with WSI in capturing and handling bats and identification of Irish bats. Ferdia has been vaccinated against Rabies and is licensed to disturb roosts for the purpose of survey. (Note: the welfare of bats is paramount in the survey work of WSI and once a roost has been established, no further disturbance to the roost is permitted).



Saoirse Keeley BCL(Hons) (Law and business, Maynooth University)

Legal support

Saoirse has a bachelor's degree in law and business, and has a particular interest in European Law and Environmental Regulation. She helps with the preparation of environmental reports and contributes to applications for derogation licences. Her understanding of legal frameworks – particularly around EU and constitutional environmental legislation – has been really useful in ensuring our work meets regulatory requirements. She also brings strong research, analytical and communication skills to the team. Saoirse has also trained with Bat Conservation Ireland and frequently leads bat walks. Saoirse is rabies vaccinated.

Hugh Keeley

Student surveyor

Hugh assists in surveying under instruction from a senior ecologist. Hugh has an interest in business economics and is studying for a degree in Maynooth University. Hugh assists with bat walks and talks and is particularly good in dealing with bat rehabilitation. Hugh is vaccinated against rabies.

Appendix I-Definition of Effects – EPA 2017



TABLE 3. DEFINITION OF SIGNIFICANCE OF EFFECTS.

Significance of Effects	Definition
Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Profound Effects	An effect which obliterates sensitive characteristics

3.5.2.3 Criteria Used to Define Duration of Effects

In line with the EPA Guidelines (EPA, 2017), the following terms are defined when quantifying duration and frequency of effects. See Table 4, below.

TABLE 4. DEFINITION OF DURATION OF EFFECTS.

Quality	Definition
Momentary Effects	Effects lasting from seconds to minutes
Brief Effects	Effects lasting less than a day
Temporary Effects	Effects lasting less than a year
Short-term Effects	Effects lasting one to seven years.
Medium-term Effects	Effects lasting seven to fifteen years.
Long-term Effects	Effects lasting fifteen to sixty years
Permanent Effects	Effects lasting over sixty years
Reversible Effects	Effects that can be undone, for example through remediation or restoration

Appendix II – Bat Data

Old Connaught, Bray — Static Detector Bat Passes (October 2025)				
Date	Common pipistrelle	Soprano pipistrelle	Leisler's bat	Grand Total
22/10/2025	9	1	19	29



23/10/2025	—	7	64	0
24/10/2025	43	756	62	861
25/10/2025	25	11	125	161
26/10/2025	11	—	66	0
27/10/2025	9	18	52	79
28/10/2025	2	2	87	91
29/10/2025	1	—	114	0
Grand Total	100	795	589	1221

Old Connaught, Bray — Static Detector Bat Passes (May-June 2026)						
Date	Passes of each species					Grand Total
	Myotis	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Brown Long-Eared	
21/05/2026	1	13	27	18	1	60
21-May	1	13	27	18	1	60
22/05/2026	14	84	336	60	1	495
22-May	14	84	336	60	1	495
23/05/2026	5	52	515	7		579
23-May	5	52	515	7		579
24/05/2026	5	104	221	13	2	345
24-May	5	104	221	13	2	345
25/05/2026	11	55	172	12		250
25-May	11	55	172	12		250
26/05/2026	14	44	108	10	1	177
26-May	14	44	108	10	1	177
27/05/2026	6	61	243	11		321
27-May	6	61	243	11		321
28/05/2026	2	82	642	19		745
28-May	2	82	642	19		745
29/05/2026		61	465	20		546
29-May		61	465	20		546
30/05/2026		45	307	11	1	364
30-May		45	307	11	1	364
31/05/2026	7	80	514	17		618
31-May	7	80	514	17		618
01/06/2026		17	124	6		147
01-Jun		17	124	6		147
Grand Total	65	698	3674	204	6	4647



Appendix III – Data from Bat Conservation Ireland – Records from within a 10km radius of the site

Search parameters: Roosts with observations of all species within 10000m of O254187				
Roosts				
Name	Grid reference	Species observed		
67 Shrewsbury Lawn	O2324	Unidentified bat		
Ardmore Sound	O2517	Pipistrellus pygmaeus		
Crow Lane, Ballyorney Road, Enniskerry, Co. Wicklow	O2215	Pipistrellus pygmaeus, Nyctalus leisleri, Pipistrellus pipistrellus		
Ballyboo, Enniskerry	O2217	Pipistrellus pygmaeus		
Barn, Glen Druid Mews	O2423	Plecotus auritus		
Barnacullia	O1724	Unidentified bat		
Brady's Kilpedder	O2608			
Burnaby Heights	O2811	Pipistrellus pygmaeus		
Christchurch, Delgany	O2710	Pipistrellus spp. (45kHz/55kHz)		
Derelict Farmhouse	O2909	Pipistrellus pipistrellus (45kHz)		
Glen Druid Main House and outbuildings	O2423	Pipistrellus spp. (45kHz/55kHz), Unidentified bat		
Grange Hill	O1625	Myotis nattereri, Pipistrellus pipistrellus (45kHz)		
Lehaunestown Park and buildings	O2423	Plecotus auritus		
Meadowbank	O2911	Plecotus auritus		
Saw Mill Building, Powerscourt Estate	O2016	Unidentified bat		
St Patricks Church, Enniskerry	O2217	Plecotus auritus, Myotis daubentonii, Pipistrellus pygmaeus		
St Patricks Powerscourt	O2217	Plecotus auritus		
Stable Block, Druid House	O2423	Plecotus auritus		
Two storey house, Balgarra	O1824	Pipistrellus pipistrellus (45kHz)		
Two storey house, Grasslands	O1824	Plecotus auritus, Pipistrellus pipistrellus (45kHz)		



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