Bat Survey

Large-scale Residential Development
Countess Road
Killarney
Co. Kerry

Report prepared for Dipharma Unlimited Company

By Karen Banks MCIEEM

4th June 2026

Greenleaf Ecology

Tel: 0834218641
Email: greenleafecology@outlook.com

Contents

1 Introduction 1
1.1 Legislative Context 1
1.2 Objectives 2
1.3 Proposed Development 2
2 Methodology 5
2.1 Desk Study 5
2.2 Field Survey 5
2.2.1 Surveyor Information 5
2.2.2 Study Area 5
2.2.3 Preliminary Ecological Appraisal 6
2.2.4 Bat Roost Inspection Survey 7
2.2.5 Bat Roost Emergence Survey 8
2.2.6 Bat Activity Survey 8
2.3 Survey Limitations 9
3 Results 11
3.1 Existing Bat Data 11
3.1.1 Designated Sites 11
3.2 Bat Roost Survey 12
3.2.1 Preliminary Ecological Appraisal 12
3.2.2 Bat Roost Inspection Survey 12
3.2.3 Roost Emergence Survey 13
3.3 Activity Survey 14
4 Evaluation of Survey Results 16
5 Impact Assessment 17
5.1 Construction Phase 17
5.1.1 Loss or Severance of Foraging and Commuting Habitat 17
5.1.2 Loss of Roosting Habitat 18
5.1.3 Lighting 18
5.2 Operational Phase 19
5.2.1 Lighting 19
6 Mitigation 20
6.1 Derogation Tests 20
6.2 Mitigation Measures 21
6.2.1 Construction Phase 21
6.2.2 Lighting 23

6.3 Operational Phase 23
6.3.1 Barrier effect as a result of artificial lighting 23
7 References 25

Appendices

Appendix A Description of Irish bat species
Appendix B Illumination Contour Drawing
Appendix C Derogation License

List of Figures

Figure 1-1: Site location 1
Figure 1-2: LRD Countess Road, Site Layout Plan 3
Figure 1-3: LRD Countess Road- Proposed Landscaping Plan 4
Figure 2-1: Proposed development site at Countess Road- location of passive monitors, 2025 10
Figure 3-1: Location of lesser horseshoe bat colonies that are QI for Killarney National Park SAC (location of proposed site annoted on map) 12
Figure 3-2: Countess Road Residential Development- location of potential tree roosts 13

List of Tables

Table 2-1: Criteria for Assessing the Potential Suitability of the Proposed Development Site for Bats. 6
Table 2-2: Guidelines for assessment of the suitability of trees on proposed scheme area for bats (Collins, 2023) 7
Table 2-3: Categorisation of potential suitability of PRFs in trees at the proposed site 8
Table 2-4: Proposed development site at Countess Road: bat activity survey dates and conditions 9
Table 3-1: NBDC bat records from within a 4km radius of the study area 11
Table 3-2: Countess Road Residential Development: potential tree roosts 13
Table 3-3: Bat passes recorded during passive monitoring completed in 2025 15

1 Introduction

Greenleaf Ecology were commissioned by Dipharma Unlimited Company to undertake a bat survey for the proposed Large-scale Residential Development at Countess Road, Killarney, Co. Kerry. The location of the site is illustrated in Figure 1-1.

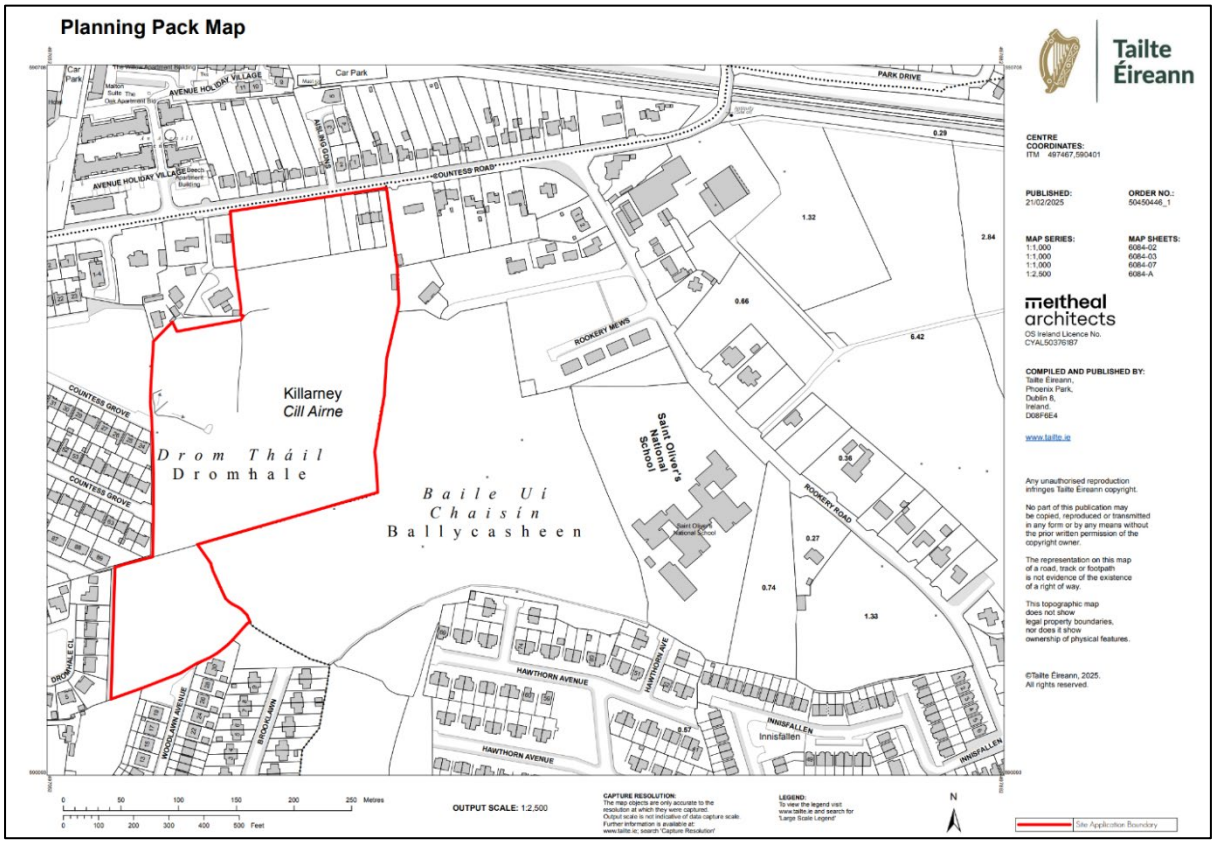


Figure 1-1: Site location

1.1 Legislative Context

All Irish bats are protected under the Wildlife Acts. Also, the EU Habitats Directive, and Irish implementing legislation, seeks to protect rare species, including bats, and their habitats, and requires that appropriate monitoring of populations be undertaken. Moreover, the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982) exists to conserve all bat species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) protects migrant bat species across all European boundaries. Ireland has ratified both these conventions.

All bats are listed in Annex IV to the Habitats Directive (92/43/EC) and the Lesser Horseshoe bat is further listed under Annex II to the same Directive. Article 12 of the Directive requires Member States to establish a system of strict protection for animal species listed in Annex IV. Article 16 provides for derogation from the protection under Article 12 in certain circumstances. Articles 12 and 16 are transposed into Irish law by Regulations 51 and 54, respectively, of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended).

Destruction, alteration or evacuation of a known bat roost is a notifiable action under current legislation and a derogation licence has to be obtained from the National Parks and Wildlife Service (NPWS) before works can commence. Any works interfering with bats and especially their roosts, may

only be carried out under a Regulation 54 licence issued by the NPWS. The details with regards to appropriate assessments, the strict parameters within which derogation licences may be issued and the procedures by which and the order in relation to the planning and development regulations such licences should be obtained, are set out in NPWS Guidance Series 2 – "*Strict Protection of Animal Species: Guidance for Public authorities on the Application of Articles 12 and 16 of the EU Habitats Directive to development/works undertaken by or on behalf of a Public authority*" (Mullen et al., 2021).

1.2 Objectives

The objectives of the bat survey were to:

- Establish the location of any potential or actual bat roosts at the proposed site;
- Establish the value of the proposed site to bats for foraging and commuting;
- Assess the results of the survey and determine the potential impact of the proposed development on any bats that might use the site;
- Provide recommendations for the project design in light of the survey results as appropriate; and
- Provide recommendations for mitigation following the survey.

1.3 Proposed Development

Dipharma Unlimited Company intend to apply for a 10-Year Planning Permission for a Large-Scale Residential Development (LRD) at Countess Road, Dromhale (townland), Killarney, Co. Kerry

The development will consist of:

The construction of a residential development of 259 no. residential units with ancillary single storey creche, landscaping and all associated site development works.

The proposed development includes the demolition of 2 no. existing two-storey semi-detached dwelling houses and an existing ruinous structure on the site and construction of 103 no. two storey houses (3-bed units), comprising of 27 no. terraced units, 62 no. end of terrace units, and 14 no. side entry units, 82 no. courtyard apartment units over 2 no. storeys (42 no. 1-bed units, 40 no. 2-bed units), and 74 no. apartment units (34 no. 1-bed units, 40 no. 2-bed units) in 2 no. part 3 storey and part 4 storey blocks.

Vehicular access to the proposed development will be via one entrance from Countess Road (L2016) to the north, with the entrance design including improvement works on the public road inclusive of a raised crossing point. The design includes pedestrian/cycle infrastructure to/from Countess Road and internally within the development site and to adjoining areas.

Ancillary site works include car parking, provision of bicycle parking and bin storage facilities serving the proposed apartment/courtyard apartment buildings and creche, 2 no. ESB substations, landscaping, water services and drainage infrastructure (including foul and storm network upgrades in Countess Grove), and all associated site development works. The proposed development also provides for the demolition of existing site boundary walls along Countess Road. A Natura Impact Statement (NIS) has been prepared and will be submitted to the Planning Authority with the application.

The proposed site layout (Meitheal Architects, 2026) is illustrated in Figure 1-2 and the proposed landscaping plan (Cunnane Stratton Reynolds, 2026) is illustrated in Figure 1-3.



Figure 1-2: LRD Countess Road, Site Layout Plan



Figure 1-3: LRD Countess Road- Proposed Landscaping Plan

2 Methodology

2.1 Desk Study

A pre-survey data search was conducted in order to collate existing information from the site and the surrounding area on bat activity, roosts and landscape features that may be used by bats. The data search comprised the following information sources:

- Collation of known bat records from within a 4km radius[1] of the site from the National Bat Database held by the National Biodiversity Data Centre (www.biodiversityireland.ie);
- Review of Ordnance Survey mapping and aerial photography of the site and its environs; and
- Records of European and nationally designated sites from within a 4km radius of the site where bats form part or all of the reason for designation (https://www.npws.ie/protected-sites).

2.2 Field Survey

This bat survey was cognisant of the following guidelines:

- Andrews, H. (2018) Bat Roosts in Trees. A guide to identification and assessment for tree-care and ecology professionals. Pelagic Publishing.
- Bat Conservation Ireland (2010) G*uidance notes for Planners, Engineers, Architects, and Developers*;
- Collins, J. (ed.) (2023) *Bat Surveys for Professional ecologists: Good Practice Guidelines (4th ed.)*. The Bat Conservation Trust, London; and
- Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.

2.2.1 Surveyor Information

The survey was undertaken by Karen Banks, MCIEEM.

Karen is an ecologist with 19 years' experience in the field of ecological assessment. She holds a BSc in Environment and Development from Durham University and is a full member of the Chartered Institute of Ecology and Environmental Management. Karen is an experienced and skilled bat surveyor, first gaining a scientific licence to disturb bats from Natural England, UK in 2008. Karen is trained in bat handling and capture methods and currently holds a bat disturbance licence granted by the NPWS (Licence number: DER/BAT 2023-55 (survey licence)). Karen has undertaken bat survey and assessment for numerous projects, including bridge repair and replacement works, domestic dwelling repair and demolition works, wind farm developments and large-scale infrastructure projects such as flood relief schemes, road developments and pipeline schemes. Karen has also represented Cork County Council as an expert witness for bats at an Oral Hearing.

2.2.2 Study Area

The survey area comprised the proposed site as illustrated in Figure 1-1. The study area for the desk study is described in Section 2.1.

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

2.2.3 Preliminary Ecological Appraisal

A walkover survey of areas within the proposed site identified as potential roosting, flight paths and foraging habitat during the desk top study was undertaken on 24th June 2025. Potential bat habitat was assessed using the criteria outlined in Table 2-1[2] and suitability of trees within the site for bats was assessed using the criteria outlined in Table 2-2.

Table 2-1: Criteria for Assessing the Potential Suitability of the Proposed Development Site for Bats

Suitability	Description Roosting habitats in structures	Potential flight paths and foraging habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/ suitable shelter at all ground/ underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/ protection for flight-lines, or generate/ shelter insect populations available to foraging bats).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats).	Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation- the categorisation described in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High quality habitat that is well connected to the wider landscape that is likely to be used

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

	potential to support high conservation status roosts e.g. maternity or classic cool/ stable hibernation site.	regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Table 2-2: Guidelines for assessment of the suitability of trees on proposed scheme area for bats (Collins, 2023)

Suitability	Description
None	Either no PRFs in the tree or highly unlikely to be any
FAR	Further assessment required to establish if PRFs are present in the tree
PRF	A tree with at least one PRF present

2.2.4 Bat Roost Inspection Survey

2.2.4.1 Trees

A detailed inspection of the exterior of trees was undertaken on 7th November 2025 to ascertain whether any features that bats could use for roosting (Potential Roost Features, or PRFs) were present. The objective of the survey was to determine the actual or potential presence of bats to carry out an impact assessment and determine the need for further survey and/or mitigation.

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

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

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

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

It should be noted that bats or bat droppings are the only conclusive evidence of a roost and many roosts have no external signs. In the current survey, potential roost sites were viewed by a bat specialist working from ground level. Trees were categorised in accordance with the criteria detailed in Table 2-3.

Table 2-3: Categorisation of potential suitability of PRFs in trees at the proposed site

Suitability	Description
PRF-I	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.
PRF-M	PRF is suitable for multiple bats and may therefore be used by a maternity colony.

2.2.4.2 Structures

On 25th June 2025 the existing dwellings at the site were surveyed for potential roost sites and signs of bats. The survey utilised a high-powered torch, close focussing binoculars and an endoscope (Explorer Premium 8803 with 9mm camera) where required. The external inspection involved looking for bat droppings on the ground, stuck to walls, windowsills or in crevices in the stonework and recording suitable entry and exit points.

The internal inspection involved looking for features that may be suitable for roosting bats, such as joints and crevices in wood, holes or crevices between stonework in the walls and searching for bat droppings, urine stains and feeding signs on the floor.

2.2.5 Bat Roost Emergence Survey

A dusk survey of the dwellings was undertaken on 2nd July 2025 and 20th July 2025 in order to watch and listen for bats exiting bat roosts to determine the presence or absence of bats at the time of survey. The dusk emergence survey commenced approximately 15 minutes before sunset and ended approximately 90 minutes after sunset. The survey was undertaken in suitable weather conditions (avoiding periods of very heavy rain, strong winds (> Beaufort Force 5), mists and dusk temperatures below (10°C)). Two people surveyed the structure (Karen Banks and Cathál MacPartholan), one surveyor was located at the front of the dwellings and one surveyor was located to the rear of the dwellings.

Anabat Walkabout detectors were utilised for the survey, which record bat echolocation calls directly on to an internal SD memory card. Each time a bat is detected, an individual time-stamped (date and time to the second) file is recorded. Data was then downloaded and all recordings were analysed by the Anabat Insight software analysis programme version 2.1.7.

The emergence survey was aided by the use of the TrackIR Pro 19 thermal imaging scope.

2.2.6 Bat Activity Survey

Bat activity surveys were conducted across the site using an Anabat Walkabout detector, which records bat echolocation calls directly on to an internal SD memory card. Each time a bat is detected, an individual time-stamped (date and time to the second) file is recorded. Data were then downloaded and all recordings were analysed using the Anabat Insight spectrogram sound analysis software Version 2.1.7. Dusk activity surveys (from sunset, for a minimum of 90 minutes) were conducted. These surveys enable a determination of the approximate numbers and species of bats present within the study area, areas used for foraging and commuting routes to and from roosts. The approximate flying height and direction taken by bats were estimated and detailed where possible.

Bat activity transect surveys were undertaken on 2nd July 2025, 24th August 2025 and 8th September 2025. Each survey was conducted in appropriate weather conditions (avoiding periods of very heavy rain, strong winds (> Beaufort Force 5), mists and dusk temperatures below (10°C) (Table 2-4).

Table 2-4: Proposed development site at Countess Road: bat activity survey dates and conditions

Survey Date	Times	Weather conditions
02/07/2025	22:00- 23:35, sunset 22:00	Precipitation: none, temperature at sunset: 11°C, wind F3
24/08/2025	20:40- 22:15, sunset 20:42	Precipitation: none, temperature at sunset: 16°C, wind F3
08/09/2025	20:10-21:40, sunset 20:11	Precipitation: none, temperature at sunset: 15°C, wind F3

In order to supplement the information gathered from the manual activity surveys, a passive monitoring system of bat detection was also deployed for this survey scheme (i.e. a bat detector is left in the field, there is no observer present and bats which pass near enough to the monitoring unit are recorded and their calls are stored for later analysis). This results in a far greater sampling effort over a shorter period of time. Bats are identified by their ultrasonic calls. The passive detectors record bat ultrasonic calls on a continuous basis and store the information onto an internal SD card. Each time a bat is detected, an individual time-stamped (date and time to the second) file is recorded.

Passive monitoring was completed monthly between May and September 2024 using Anabat Swift bat monitors. Three Anabat Swift monitors were deployed each month for the survey and were positioned in or adjacent to hedgerow and scrub habitats as illustrated in Figure 2-2. The detectors were set to record from approximately 30 minutes before sunset until sunrise and recorded for 7 nights at each location. Data were then downloaded and bat echolocation calls were later analysed by the Anabat Insight software analysis programme version 2.1.7. Each time-stamped file was analysed and the species of bat recorded was noted as a bat pass.

2.3 Survey Limitations

Brown long-eared bats can be difficult to detect as they echolocate at a low-amplitude and foraging bats often make no sound. Similarly, lesser horseshoe bat can be difficult to detect as their calls are highly directional. The survey design aimed to increase the likelihood of recording these species by the employment of full spectrum monitoring and the positioning of passive monitors at commuting routes, natural corridors through or adjacent to vegetation and suitable brown long-eared bat and lesser horseshoe bat habitats (such as hedgerows).

The monitors were deployed on a monthly basis between June and September and recording occurred throughout a range of different weather conditions. Bat activity transects were all conducted in optimal weather conditions.

The project timeframes did not allow for monitoring in spring, however, as noted above, monthly monitoring was conducted throughout the summer and autumn months.

No significant constraints to the survey data gathered are noted.



Figure 2-1: Proposed development site at Countess Road- location of passive monitors, 2025

3 Results

3.1 Existing Bat Data

The review of existing records of bat species in the environs of the study area indicates that nine of the ten known Irish species of bat have been recorded within a 4km radius. These bats include common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*P. pygmaeus*), Nathusius' pipistrelle (P. nathusii), Leisler's bat (*Nyctalus leisleri*), brown long-eared bat (*Plecotus auritus*), Daubenton's bat (*Myotis daubentonii*), Natterer's bat (*M. nattereri*), whiskered bat (*M. mystacinus*) and lesser horseshoe bat (Rhinolophus hipposideros) shown in Table 3-1 below. Five species, namely common pipistrelle, Leisler's bat, brown long-eared bat, Daubenton's bat and lesser horseshoe bat have been recorded roosting within 4km of the site.

Table 3-1: NBDC bat records from within a 4km radius of the study area

Common Name	Scientific Name	Present (Y/N)	Known Roost within 4km (Y/N)	Date of Last Record
Pipistrelle sp.	*Pipistrellus pipistrellus sensu lato*	Y	Y	24/09/2021
Common Pipistrelle	*Pipistrellus pipistrellus*	Y	Y	21/05/2021
Soprano Pipistrelle	*Pipistrellus pygmaeus*	Y	N	21/05/2022
Nathusius's Pipistrelle	*Pipistrellus nathusii*	Y	N	23/07/2008
Leisler's Bat	*Nyctalus leisleri*	Y	Y	14/05/2022
Brown Long-eared Bat	*Plecotus auratus*	Y	Y	14/05/2021
Daubenton's Bat	*Myotis daubentoniid*	Y	Y	24/08/2021
Whiskered Bat	*Myotis mystacinus*	Y	N	14/05/2021
Natterer's Bat	*Myotis nattereri*	Y	N	02/08/2019
Lesser Horseshoe Bat	*Rhinolophus hipposideros*	Y	Y	21/05/2021
Brandt's Bat	*Myotis brandtii*	N	N/A	N/A

The bat landscape association model (Lundy *et al,* 2011) suggests that the study area is part of a landscape that is of moderate to high suitability for bats including common pipistrelle, soprano pipistrelle, brown long-eared, Leisler's, Daubenton's, Natterer's, whiskered bat and lesser horseshoe bat; and low to moderate suitability for Nathusius' pipistrelle.

3.1.1 Designated Sites

The proposed site is located c.0.5km to the east of Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC at nearest. Lesser Horseshoe bat is a qualifying interest species for this SAC. According to the Conservation Objectives for Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC (NPWS, 2017), the proposed site is located within the foraging range for lesser horseshoe bat colony site code 296, which roost within Killarney National Park to the south-west of Killarney.

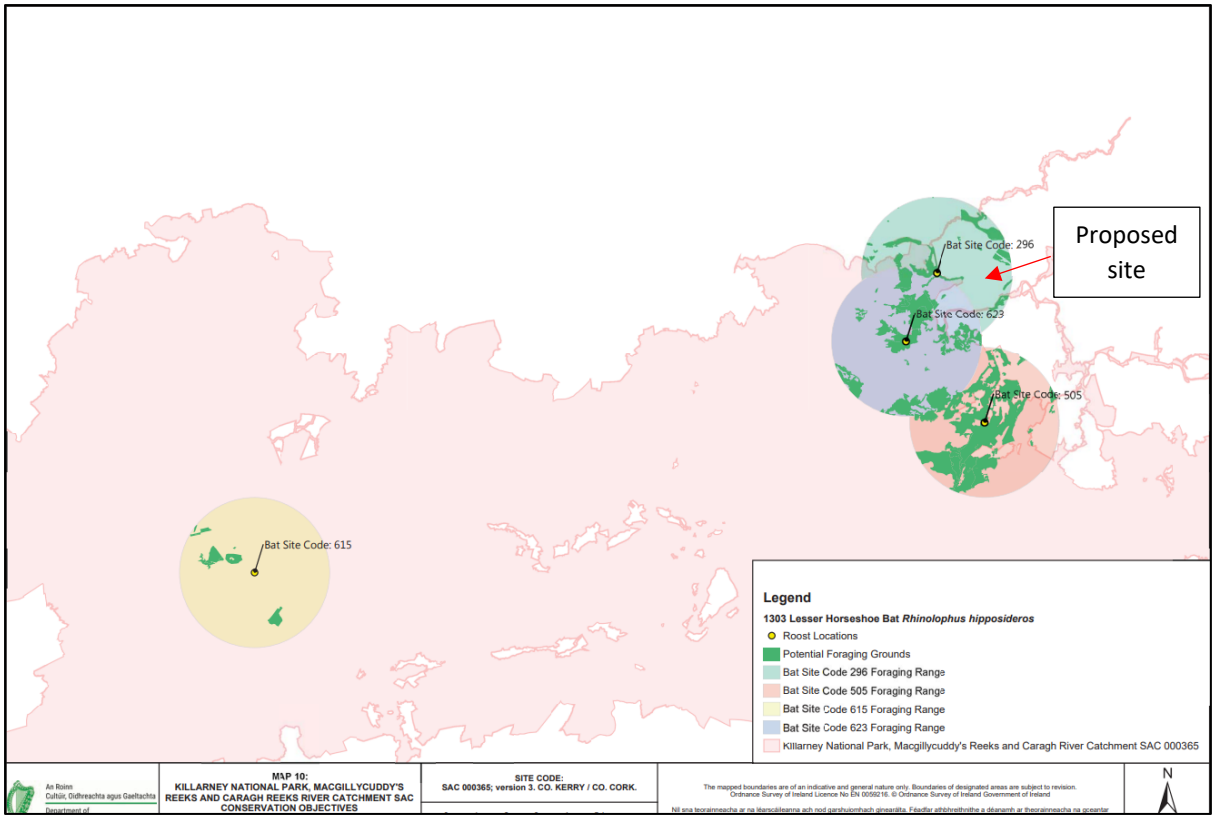


Figure 3-1: Location of lesser horseshoe bat colonies that are QI for Killarney National Park SAC[3] (location of proposed site annoted on map)

3.2 Bat Roost Survey

3.2.1 Preliminary Ecological Appraisal

Review of aerial photography and the results of the site walkover indicate that the site predominantly comprises agricultural fields (improved agricultural grassland (Fossitt code GA1) bound by hedgerows (WL1) and treelines (WL2), with an area of wet grassland (GS4) and occasional scrub (WS1) at the west of the site.

There are no EPA mapped watercourses within the proposed development site boundary, the nearest watercourse is the Flesk River, located c.0.6km to the south of the site.

In accordance with the criteria outlined in Table 2-1, the commuting and foraging habitats within the site are of moderate to high suitability for bats.

A summary of foraging and roosting habitats for Irish bats is included in **Appendix A.**

3.2.2 Bat Roost Inspection Survey

3.2.2.1 Trees

No trees within the proposed site were confirmed as being used as roost sites during the course of the surveys undertaken in 2025. A total of five trees within the proposed site were categorised as being suitable to support multiple bats. The location of the trees with suitability for roosting bats is illustrated in Figure 3-2 and detailed in Table 3-2**.** It is further noted that many of the mature trees at the site boundary support Ivy cover that may hide potential roosting features and may support potential for individual bats to roost opportunistically in warmer months.

[3] Map 10 of ConservationObjectives.rdl (npws.ie)

Table 3-2: Countess Road Residential Development: potential tree roosts

PTR Number	Tree Species	BCT Category	PRFs
1	Oak	PRF-M	Split in limb
2	Oak	PRF-M	2 knot holes on limb
3	Oak	PRF-M	Limb drop and crack in limb
4	Oak	PRF-M	Crack in limb
5	Ash	PRF-M	Knot hole and rot to limb



Figure 3-2: Countess Road Residential Development- location of potential tree roosts

3.2.2.2 Structures

The structures within the proposed site comprise two attached 2-storey disused dwellings. The walls of the houses are rendered, and the roof is constructed of slate tiles with a central chimney breast and wooden fascia boards. Dormer windows are present on the 1st floor.

Potential entry/exit points for bats are present via rot holes in the wooden fascia boards and gaps under the eaves. Internally, large Jackdaw nests are present within the roof space of both dwellings. A small pile (c.10 no.) old bat droppings was present within the roof space of the easternmost dwelling and a single bat dropping was present within the roof space of the westernmost dwelling.

3.2.3 Roost Emergence Survey

Two soprano pipistrelle were recorded emerging from the southern elevation of the westernmost dwelling during the emergence survey conducted on 2nd July and 20th July.

3.3 Activity Survey

The passive monitors recorded eight species of bat, namely common pipistrelle, soprano pipistrelle, Leisler's bat, brown long-eared bat, Natterer's bat, whiskered bat, Daubenton's bat and lesser horseshoe bat. Calls from the *Myotis* genus (unidentifiable to species level) were also recorded.

Soprano pipistrelle was the most frequently recorded species within the site (52% of calls recorded), followed by common pipistrelle then Leisler's bat. Brown long-eared bat was recorded across the site, with the highest level of activity recorded on PM1 at the north of the site in July, and PM2 at the south of the site in August. Generally, a low level of activity from Natterer's bat, whiskered bat and Daubenton's bat was recorded across the site, however, a notable spike in whiskered bat and Daubenton's bat activity was recorded on PM2 at the south of the site in August. Likewise, a low level of activity from the *Myotis* genus (unidentifiable to species level) was recorded across the site, with a higher level of activity recorded at PM2 in August (see Table 3-2). Lesser horseshoe bat was recorded across the site, with a high level of activity at PM1 in July.

Overall, the level of bat activity recorded across the site was variable, with a lower level of activity recorded on PM1 at the north of the site and a higher level of activity on PM2 and PM3 at the south of the site.

The number of bat passes per night recorded on the passive monitors is summarised in Table 3-2, the location of the passive monitors is illustrated in Figure 2-1.

Five species were recorded within the site during the bat activity transects undertaken on 2nd July 2025, 24th August 2025 and 8th September 2025. These species were common pipistrelle, soprano pipistrelle, Leisler's bat, whiskered bat and lesser horseshoe bat. Soprano and common pipistrelle were recorded foraging along the hedgerows and treelines throughout the site and Leisler's bat was recorded foraging and commuting overhead. Whiskered bat was recorded foraging along the treeline at the eastern site boundary and lesser horseshoe bat was recorded in low numbers foraging along the site boundary.

During the transects undertaken in August and September, several Soprano and common pipistrelle were recorded early in the evening flying into the south of the site from adjacent housing, suggesting the likely presence of a maternity pipistrelle roost in the immediate environs of the site, outside of the site boundary. As noted previously, two soprano pipistrelle were also recorded emerging from the disused dwellings at the northeast of the site before foraging along the treelines at the field boundaries.

Table 3-3: Bat passes recorded during passive monitoring completed in 2025

Species	24th- 30th June 2024			20h- 26th July 2025			24th-30th August 2025			8th- 14th September 2025			Total
	PM1	PM2	PM3	PM1	PM2	PM3	PM1	PM2	PM3	PM1	PM2	PM3	
Common pipistrelle	948	11,066	4,140	884	2,439	2,805	1,312	11,394	4,501	1,614	4,451	7,607	**53,161 (52%)**
Soprano pipistrelle	258	6,166	1,758	348	1,934	1,299	314	7,272	6,641	531	3,845	5,039	**35,405 (35%)**
Pipistrelle species	1	17	0	3	6	3	4	39	6	0	22	15	**116 (0%)**
Leisler's	1,798	2,730	662	857	825	1,269	398	560	318	192	422	486	**10,517 (10%)**
Whiskered/ Brandt's	0	17	0	20	2	0	12	458	0	8	0	8	**525 (1%)**
Daubenton's	0	6	0	2	6	2	0	198	2	10	6	0	**232 (0%)**
Natterer's	0	4	0	0	26	2	0	6	0	0	4	2	**44 (0%)**
***Myotis* spp**	1	25	0	17	42	4	1	151	1	0	12	9	**263 (0%)**
Brown long-eared	28	54	2	110	57	9	4	137	4	2	20	4	**431 (0%)**
Lesser horseshoe bat	0	10	12	1,100	52	22	18	44	21	32	34	40	**1,385 (1%)**
NoID	0	0	0	4	2	2	0	1	0	0	0	0	**9 (0%)**
Total	**3,034**	**20,095**	**6,574**	**3,345**	**5,391**	**5,417**	**2,063**	**20,260**	**11,494**	**2,389**	**8,816**	**13,210**	**102,088 (100%)**

4 Evaluation of Survey Results

A review of existing bat records from within a 4km radius of the site indicates that nine of the ten known Irish bat species had been recorded. These include common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, Leisler's, brown long-eared, Daubenton's, Natterer's, whiskered and lesser horseshoe bat. Of these species, common pipistrelle, Leisler's bat, brown long-eared bat, Daubenton's bat and lesser horseshoe bat have been recorded roosting within 4km of the site.

Features within the site that are of potential use by foraging and commuting bats are hedgerows and treelines, which provide connectivity between the site and other foraging areas in the wider landscape. Overall, the site is considered to be of moderate to high suitability for foraging and commuting bats due to the presence of connectivity to other suitable habitats in the wider landscape.

Results from bat surveys undertaken between June and September 2025 indicate that eight species of bat forage within the site. A relatively high amount of common pipistrelle, soprano pipistrelle and Leisler's bat activity was recorded and lower levels of activity from brown long-eared bat, Daubenton's bat, Natterer's bat, whiskered bat and lesser horseshoe bat were also recorded.

Two soprano pipistrelle were recorded emerging from the disused dwellings at the north-east of the site and soprano and common pipistrelle fly into the site from a nearby roost to the south of the site, outside of the site boundary.

Overall, a high level of activity and a high diversity of species was recorded within the site.

Soprano pipistrelle, common pipistrelle, Leisler's bat, Daubenton's, Natterer's, whiskered and brown long-eared bat are all considered to be of Favourable conservation status and the conservation status of lesser horseshoe bat is categorised as being Inadequate (NPWS, 2019).

Overall, the proposed site is considered to be of local conservation interest (higher value) for bats.

5 Impact Assessment

This section of the report provides an assessment of the potential impacts on bats of the proposed development of large-scale residential development at the site.

5.1 Construction Phase

5.1.1 Loss or Severance of Foraging and Commuting Habitat

The results of the bat activity survey undertaken for the proposed development indicate that the site supports eight species of foraging and commuting bat (soprano pipistrelle, common pipistrelle, Leisler's, Daubenton's, Natterer's, whiskered, brown long-eared and lesser horseshoe bat), with a minor soprano pipistrelle roost present within the site and a pipistrelle roost present to the south of the site.

The hedgerows and treelines present on site provide foraging and commuting habitat for a high diversity of bat species, as noted previously. The proposed development will require the removal of trees and hedgerows as follows:

- Removal of 38 no. trees, 17 of which are to be removed to facilitate the development, all other trees are to be removed for safety reasons (see Geotree, 2025).
- Removal of 344 linear metres of hedgerow.

The proposed landscaping plan includes for the following:

- Planting of 205 no. trees comprised of native species.
- Planting of 360 linear metres hedgerows comprised of native species.

As the proposed planting matures, there will be a net gain of 167 trees and 16m hedgerow at the proposed site in the medium to long-term.

As described in the Tree Survey Report (Geotree, 2025), the most extensive tree/ hedgerow removal will be required at the north of the site at the boundary adjacent to Countess Road and the treeline bounding the gardens of the existing dwellings. The highest levels of bat foraging activity were recorded at the eastern and southern site boundaries, away from Countess Road. In view of the landscaping proposals as summarised above, it is expected that the removal of trees and hedgerow habitat will result in a short-term minor adverse effect on common pipistrelle, soprano pipistrelle, Leisler's bat, brown long-eared bat, Daubenton's bat, Natterer's bat and whiskered bat at the local (site) level. No significant adverse effects on these species are expected in the medium to long term.

Lesser horseshoe bats were recorded foraging and commuting at the proposed site. The proposed site is located within the foraging range for lesser horseshoe bat colony site code 296, a qualifying interest for Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC. In 2016, the Bat Conservation Trust (BCT) carried out a review of literature pertaining to mean and maximum bat foraging distances[4]. In their review, a Core Sustenance Zone (CSZ) refers to the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost. The weighted average maximum foraging distance for lesser horseshoe bats was 2.02km. However, as noted in the National Parks and Wildlife Service (NPWS) document *Conservation objectives supporting document – lesser horseshoe*

[4] Collins, J. (ed.) (2016). *Bat Surveys for Professional ecologists: Good Practice Guidelines* (3rd ed.). The Bat Conservation Trust, London

bat (*Rhinolophus hipposideros*)[5], some researchers have found that lesser horseshoe bats normally forage in woodlands/scrub within 2.5km of their roosts, therefore, as specified for the purpose of current site specific conservation objective (SSCO) targets for this species, a 2.5km zone is considered an appropriate distance to foraging areas for each roost.

Lesser horseshoe bat is generally considered to be reluctant to cross open areas more than 10m wide. The proposed development will require the removal of vegetation along Countess Road and the treeline bounding the gardens of the existing dwellings. Aside from this section of hedgerow, all removal of hedgerows/ treeline required (e.g. for facilitation of pedestrian access) will be under 10m in length. As detailed in Table 3-2, lesser horseshoe bat calls recorded on PM1 to the north of the site (as illustrated in Figure 2-1) recorded a lower level of bat activity than the other monitors recording at the site, with the exception of July, when a high level of foraging was recorded. It is expected that the removal of trees and hedgerow habitat at the north of the site will result in a short-term adverse effect on lesser horseshoe bat at the local (site) level. However, in view of the landscaping proposals detailed above, which would retain foraging and commuting habitat at the rest of the site boundary, these effects would not be expected to have an adverse effect at the population level (i.e. they would not be significant).

No significant adverse effects on lesser horseshoe bat are expected in the medium to long term as the proposed landscape planting matures.

5.1.2 Loss of Roosting Habitat

The proposed development will require the removal of 2 no. trees identified as supporting potential roosting features, however no bats were recorded emerging from these trees during the bat activity surveys undertaken in 2025. There is potential for the proposed development to result in the loss of potential roosting habitat. This would result in a minor adverse effect at the local level.

The proposed development will require the demolition of the existing dwellings at the site. This will result in the loss of a minor soprano pipistrelle roost. In the absence of mitigation this would result in a significant adverse effect at the local level.

5.1.3 Lighting

Linear woodland and scrub edge habitat provides important flyways and feeding sites for a diversity of bats. Artificial lighting at night may have an adverse effect on foraging bats as light-averse bats may be repelled from lit areas and restrict their use of commuting or feeding space. In the absence of mitigation, disturbance of bats due to lighting used during the construction phase, should it be required, would have an indirect, temporary, negative effect for the duration of construction. The effect would be significant at the Local geographic level for soprano pipistrelle, common pipistrelle, Leisler's, Daubenton's, Natterer's, whiskered and brown long-eared bat. As outlined previously, there is potential that the lesser horseshoe bat activity recorded at the site is from the QI population for Killarney National Park SAC; applying the precautionary principle, effects on lesser horseshoe bat may be significant at the International Level.

[5] NPWS (2018) Conservation objectives supporting document – lesser horseshoe bat (*Rhinolophus hipposideros*) Version 1. Conservation Objectives Supporting Document Series. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Dublin, Ireland.

5.2 Operational Phase

5.2.1 Lighting

As noted in Section 5.1.3, artificial lighting at night may have an adverse effect on commuting and foraging bats.

Habitat degradation due to the use of artificial lighting at night may result in a long-term to permanent, irreversible negative effect on bats. The effect would be significant at the Local geographic level for soprano pipistrelle, common pipistrelle, Leisler's, Daubenton's, Natterer's, whiskered and brown long-eared bat. There is potential that the lesser horseshoe bat activity recorded at the site is from the QI population for Killarney National Park SAC; applying the precautionary principle, effects on lesser horseshoe bat may be significant at the International Level.

6 Mitigation

6.1 Derogation Tests

Test 1, Reason for the Derogation: The demolition of two semi-detached dwellings currently supporting a minor soprano pipistrelle roost is required to facilitate the construction of a residential development (as described in Section 1.3).

The proposed site is located on lands zoned for residential purposes under the Kerry County Development Plan 2022-2028. The lands are sequentially suitable for development, being within a short walking distance of Killarney Town centre, and adjacent to social and community infrastructure. As such, the development of the site is supported by national, regional and local policy, including the ministerial 'Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities'. The proposed development includes 20% social housing to meet identified needs arising from the Kerry County Council housing waiting list.

As summarised above, the proposed development is required to fulfil a housing need and, as such, is of public interest of a social and economic nature. The provision of a residential development supports social and economic development and, as such, outweighs the conservation interest of the bat species, particularly as the roost is minor and of low conservation importance.

Test 2, Absence of Alternative Solutions: Alternative solutions considered included not constructing the residential development (i.e. do-nothing). However, that option is not feasible due to the need for additional housing provision in the Killarney area. An alternative location was considered; however, the proposed site is on the outskirts of Killarney town in a location that is zoned for residential development. An alternative location is not feasible. An alternative design was also considered; however, the roost is located in disused dwellings that require demolition for the provision of a residential development. An alternative design is not feasible. The proposed development is the most reasonable solution.

Test 3, Impact of a Derogation on Conservation Status: The national population of soprano pipistrelle is estimated at approximately 1.2-2.7 million at summer 2023. The number of soprano pipistrelle roosting in the dwelling is estimated to be 2 no. individuals during the summer period, the site does not support a maternity roost. In the absence of any mitigation, the demolition of the dwelling may potentially result in the mortality of individual/ small numbers of non-breeding soprano pipistrelle, if timed inappropriately. This would result in a slight adverse effect on the conservation status of the local population of soprano pipistrelle but would not be significant on a national scale. With the implementation of the mitigation measures outlined in the supporting report, using established guidelines (e.g. Marnell, 2022) the proposed development and actions outlined within the supporting report will not be detrimental to the maintenance of populations of bat species at favourable conservation status in their natural range (as required under Section 54(2) of the European Communities (Birds and Natural Habitats) Regulations, either locally or nationally.

6.2 Mitigation Measures

6.2.1 Construction Phase

6.2.1.1 Loss of Roosting Habitat

Structures

Two soprano pipistrelle have been recorded roosting within the disused dwellings at the proposed site, therefore, safeguards are required to ensure the safety of this animal during works.

Application for a derogation licence

NB: Work on a known bat roost is a notifiable action under current legislation and a derogation licence has to be obtained from the National Parks and Wildlife Service before works on the roost can commence. Such a licence is required for the demolition of the dwellings at the proposed site and no demolition works shall be undertaken to the dwellings before the licence is granted by the NPWS.

A derogation license for the proposed development has been received and is enclosed in Appendix C.

In accordance with Marnell *et al* (2022), the dwellings at Countess Road support a bat roost considered to be of low conservation significance. As stated in Figure 20, page 46, this necessitates:

"Flexibility over provision of bat boxes, access to new buildings etc. No conditions about timing or monitoring"

While, as noted above, there is no requirement to comply with timing conditions, it is noted that disturbance to individual bats can be avoided by completing works at an appropriate time of year. In accordance with the *Bat Mitigation Guidelines for Ireland*, the optimum time for undertaking works to a building supporting a summer roost (not a proven maternity site) is between 1st September and 1st May.

Demolition works to the existing dwellings shall occur between 1st September and 1st May.

Demolition works shall only proceed under licence.

The existing dwellings will be subject to a dusk survey or daytime inspection for evidence of bat usage immediately prior to the commencement of works. In the event that no evidence of bat usage is found during the inspection, works can commence. Should bats be found within the building, works will be delayed until they are no longer present (i.e. they have naturally flown from the roost). Prior to commencement of works the bat specialist will brief the contractor on the possible presence of bats on the site, the subsequent need to take appropriate care and attention whilst carrying out the works and the steps to take should bats be discovered at the site at any time (i.e. stop works and inform the bat specialist). Active bats will usually keep out of the way of any operations, but torpid bats may need to be gently temporarily placed in a box until dusk and released on site.

The dwellings support a day roost for 2 no. soprano pipistrelle. Soprano pipistrelle are crevice dwellers, as such, it is considered that the inclusion of 3 no. bat boxes suitable for crevice dwellers[6] on trees to be retained in a dark area of the site boundary will provide suitable alternative roosting space.

Trees

[6] For example: Fledermausflachkasten 1FF | 00139/9

Pre-construction Potential Roost Feature (PRF) inspection/presence absence surveys of all trees scheduled for felling shall be undertaken. Following this examination, should any of the trees be identified as a bat roost then a derogation licence application will be made to the NPWS to exclude the bats and fell the tree.

Where bats are recorded roosting in the trees scheduled for felling, the following mitigation will be required:

- Timing: tree-felling can be undertaken from late August to late October/early November and all works should ideally be undertaken in this period. During this period bats are still capable of flight having not entered hibernation and undertaking works in this period may reduce the risks of tree-felling if proper measures are undertaken. To carry out the works any later in the bat season creates an additional risk that bats may be in hibernation and thus unable to fly out from a tree that is being felled, although bats can be removed by hand by a licenced bat handler if required. Additionally, disturbance during winter may reduce the likelihood of survival as the bats' body temperature is too low and they may have to consume too much body fat to survive.

Trees to be felled under the supervision of the bat specialist (as identified during the pre-construction survey) will be examined and where bats are found, they will be translocated to an area where bat boxes will already be installed on appropriate trees within the proposed site.

The proposed process for felling the trees with PRFs is outlined below:

- The bat specialist will be present during the tree felling works;
- Works will be undertaken in mild weather to ensure that if bats are found during works that they can be released or safely removed;
- Tree(s) identified as having potential to support bats will be surveyed during the daytime for bats prior to felling, on the day the felling is due to take place. The bat specialist will inspect all potential bat roost features of the tree, including those above ground level. This will require the services of a qualified arborist to climb the trees/ use a cherry picker and fell the tree in sections and lower potential roost features slowly to the ground to allow the bat specialist to inspect them. This will include visual inspection as well as use of an endoscope to inspect cavities/crevices;
- The arborist will be briefed on the technique to be followed prior to the commencement of operations. Felling will follow best practice and mitigation measures, including wedging open cracks/crevices prior to load removal and cutting limbs in sections and lowering to the ground. Trees will only be felled in longer sections if the bat worker is satisfied that there are no potential roost features present;
- When using a chainsaw, the rate of fall of branches will not be accelerated by the use of a chain and vehicle;
- Any bats found in the trees will be removed by hand to a bat box and will then be relocated to the bat boxes installed in advance of works. Notes of any such activities will be maintained;
- The tree and/or tree sections will be left on the ground for a minimum period of 24 hours to enable any unidentified bats residing in deeper crevices to make good their escape during night time hours.

6.2.1.2 Loss or Severance of Foraging and Commuting Habitat

As noted in Section 5.1.1, the proposed landscaping plan includes for the planting of 205 no. trees comprised of native species and planting of 321 linear metres hedgerows comprised of native species. As the proposed planting matures, there will be a net gain of 167 trees and 237m hedgerow at the proposed site in the medium to long-term. No further specific mitigation measures are required.

For a detailed description of Biodiversity Net Gain achieved by the proposed planting scheme please refer to the Landscaping Plan and Ecological Impact Assessment (EcIA) accompanying the planning application.

6.2.2 Lighting

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

6.3 Operational Phase

6.3.1 Barrier effect as a result of artificial lighting

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

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

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

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

- All luminaires used will lack UV elements to reduce impact.
- LED luminaires will be used due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (<2700 Kelvins) is recommended to reduce the blue light component.
- Light sources shall feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges.

- Column heights shall be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01.
- Luminaires shall always be mounted horizontally, with no light output above 90° and/or no upward tilt.
- Where appropriate, external security lighting shall be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate.
- The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.

For this development specifically, there will be light spill onto Countess Road at the northern site boundary, as exists in the current baseline situation; this is required for safety. The lighting along the hedgerows at the rest of the site boundary has been minimised so that dark areas are retained on the eastern site boundary and the south-western site boundary. The lighting has been pulled back from the southern site boundary as far as is practicable while still allowing for human safety.

A copy of the proposed illumination contour drawing for public lighting is enclosed in Appendix B.

The proposed private lighting has been designed in compliance with ILP "ILP *Guidance notes for the Reduction of Obtrusive light* (GN01:2021). It is recognised that light fittings can be adjusted after handover, which may affect light spill levels. However, up to this point, the proposed lighting design ensures that external lighting shall be limited to downlighters, resulting in a 1.0lx light spill onto footpaths but with a minimal spill outside of these areas.

7 References

Altringham, J. (2003) British Bats The New Naturalist Series 93. Harper Collins.

BCT (Bat Conservation Trust) and ILP (Institution of Lighting Professionals). 2023. Bats and Artificial Lighting at Night. Bats and the Built Environment Series. Guidance Note 08/23. England, UK.

BTHK. 2018. Bat Roosts in Trees – A Guide to Identification and Assessment for Tree-Care and Ecology Professionals. Pelagic Publishing, Exeter UK.

Aughney, T., Kelleher, C., & Mullen, D. (2008): Bat Survey Guidelines, Traditional Farm Buildings Scheme. Heritage Council, Kilkenny.

Bat Conservation Ireland, (2010). Guidance notes for Planners, Engineers, Architects, and Developers.

Bibby, C.J., Burgess, N.D., Hill, D.A. and Mustoe, S.H. (2000). Bird Census Techniques (Second Edition). Academic Press, London.

CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Coastal, Freshwater and Marine. The Institute for Ecology and Environmental Management.

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

Gunnell, K., Grant, G. and Williams, C. (2012) Landscape and Urban Design for Bats and Biodiversity. Bat Conservation Trust.

Hale, J.D., Fairbrass, A.J., Matthews, T.J., Davies, G. & Sadler, J.P. (2015) The ecological impact of city lighting scenarios: exploring gap crossing thresholds for urban bats. Global change biology, 21, 2467–2478.

Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.

NPWS (2019) The Status of EU Protected Habitats and Species in Ireland. Species Assessments Volume 3. Version 1.0. Unpublished Report, National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

National Roads Authority (2006): Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes. National Roads Authority, Dublin.

National Roads Authority (2006): Guidelines for the Treatments of Bats Prior to the Construction of National Road Schemes. National Roads Authority, Dublin.

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

NRA (2008) NRA Guidelines on Ecological Surveying Techniques for Protected Flora and Fauna on National Road Schemes). National Roads Authority.

Russ (2012) British Bat Calls: A Guide to Species Identification. Pelagic Publishing.

Appendix A: Description of Irish Bat Species

Ireland has ten known bat species from two distinct families. Each is briefly described below. For a more comprehensive overview see Roche *et al* (2014). The conservation status of each species is derived from NPWS (2019).

Vespertilionidae:

Common pipistrelle (*Pipistrellus pipistrellus*)

This species was only recently separated from its sibling, the soprano or brown pipistrelle *P. pygmaeus*, which is detailed below (Barratt et al, 1997). The common pipistrelle's echolocation calls peak at 45 kHz. The species forages along linear landscape features such as hedgerows and treelines as well as within woodland. The conservation status of this species is Favourable.

Soprano pipistrelle (*Pipistrellus pygmaeus*)

The soprano pipistrelle's echolocation calls peak at 55 kHz, which distinguishes it readily from the common pipistrelle on detector. The pipistrelles are the smallest and most often seen of our bats, flying at head height and taking small prey such as midges and small moths. Summer roost sites are usually in buildings but tree holes and heavy ivy are also used. Roost numbers can exceed 1,500 animals in mid-summer. The conservation status of this species is Favourable.

Nathusius' pipistrelle (*Pipistrellus nathusii*)

Nathusius' pipistrelle is a recent addition to the Irish fauna and has mainly been recorded from the north-east of the island in Counties Antrim and Down (Richardson, 2000) and also in Fermanagh, Longford and Cavan. It has also been recorded in Counties Cork and Kerry (Kelleher, 2005). However, the known resident population is enhanced in the autumn months by an influx of animals from Scandinavian countries. The conservation status of this species is Favourable.

Leisler's bat (*Nyctalus leisleri*)

This species is Ireland's largest bat, with a wingspan of up to 320mm; it is also the third most common bat, preferring to roost in buildings, although it is sometimes found in trees and bat boxes. It is the earliest bat to emerge in the evening, flying fast and high with occasional steep dives to ground level, feeding on moths, caddis-flies and beetles. The echolocation calls are sometimes audible to the human ear being around 15 kHz at their lowest. The audible chatter from their roost on hot summer days is sometimes an aid to location. The conservation status of this species is Favourable.

Brown long-eared bat (*Plecotus auritus*)

This species of bat is a 'gleaner', hunting amongst the foliage of trees and shrubs, and hovering briefly to pick a moth or spider off a leaf, which it then takes to a sheltered perch to consume. They often land on the ground to capture their prey. Using its nose to emit its echolocation, the long-eared bat 'whispers' its calls so that the insects, upon which it preys, cannot hear its approach (and hence, it needs oversize ears to hear the returning echoes). As this is a whispering species, it is extremely difficult to monitor in the field as it is seldom heard on a bat detector. Furthermore, keeping within the foliage, as it does, it is easily overlooked. It prefers to roost in old buildings. The conservation status of this species is Favourable.

Natterer's bat (*Myotis nattereri*)

This species has a slow to medium flight, usually over trees but sometimes over water. It usually follows hedges and treelines to its feeding sites, consuming flies, moths, caddis-flies and spiders. Known roosts are usually in old stone buildings but they have been found in trees and bat boxes. The Natterer's bat is one of our least studied species and further work is required to establish its status in Ireland. The conservation status of this species is Favourable.

Daubenton's bat (*Myotis daubentonii*)

This bat species prefers feeding close to the surface of smooth water, either over rivers, canals, ponds, lakes or reservoirs but it can also be found foraging in woodlands. Flying at 15 kilometres per hour, it gaffs insects with its over-sized feet as they emerge from the surface of the water - feeding on caddis flies, moths, mosquitoes, midges etc. It is often found roosting beneath bridges or in tunnels and also makes use of hollows in trees. The conservation status of this species is Favourable.

Whiskered bat (*Myotis mystacinus*)

This species, although widely distributed, has been rarely recorded in Ireland. It is often found in woodland, frequently near water. Flying high, near the canopy, it maintains a steady beat and sometimes glides as it hunts. It also gleans spiders from the foliage of trees. Whiskered bats prefer to roost in buildings, under slates, lead flashing or exposed beneath the ridge beam within attics. However, they also use cracks and holes in trees and sometimes bat boxes. The conservation status of this species is Favourable.

Brandt's bat (*Myotis brandtii*)

According to NPWS (2013), whiskered and Brandt's bats are cryptic species and can only be told apart using DNA techniques. Brand't bat has been confirmed only once from Ireland; a single specimen found in 2003 in Wicklow (Mullen, 2006). Following this discovery, an intensive re-survey, involving DNA testing, was undertaken of all known whiskered bat roosts in Ireland, by the Centre for Irish Bat Research. Woodland mist-netting was also conducted for the species. Despite the extensive survey-work, no further Brandt's bats were identified. The most recent Red Data List for Irish Mammals (Marnell *et al*. 2009) lists Brandt's bat as data deficient. There is no evidence of any roosts for this species in the country and at present the single record for the species is considered an anomaly. Boston et al (2010) concluded that "M. brandtii …. cannot currently be considered a resident species. This species is now considered a vagrant to the country and consequently, a detailed assessment has not been carried out.

Rhinolophidae:

Lesser horseshoe bat (*Rhinolophus hipposideros*)

This species is the only representative of the Rhinolophidae or horseshoe bat family in Ireland. It differs from our other species in both habits and looks, having a unique nose leaf with which it projects its echolocation calls. It is also quite small and, at rest, wraps its wings around its body. Lesser horseshoe bats feed close to the ground, gleaning their prey from branches and stones. It often carries its prey to a perch to consume, leaving the remains beneath as an indication of its presence. The echolocation call of this species is of constant frequency and, on a heterodyne bat detector, sounds like a melodious warble. The species is confined to six counties along the Atlantic seaboard: Mayo, Galway, Clare, Limerick, Kerry and Cork. The current Irish national population is estimated at 12,500 animals. This species is listed on Annex II of the EC Habitats Directive and 41 Special Areas of Conservation have been designated in Ireland for its protection. Where it occurs, it is often found roosting within farm buildings. The conservation status of this species is Inadequate.

Appendix B Illumination Contour Drawing



Appendix C Derogation License

Derogation Number
DER-BAT-2026-177

EUROPEAN COMMUNITIES (BIRDS AND NATURAL HABITATS) REGULATIONS, 2011 (S.I. No 477 of 2011)

DEROGATION

Granted under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011, hereinafter referred to as "the Habitats Regulations".

The Minister for Housing, Local Government & Heritage, in exercise of the powers conferred on him by Regulation 54 of the Habitats Regulations hereby grants to **Tadhg Twohig** of **Dipharma Unlimited Company, Cahernard, Castleisland, County Kerry** a derogation. It is stated that this derogation is issued:

A. In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment
B. As there is no satisfactory alternative, and the action authorised by this derogation will not be detrimental to the maintenance of the population of **bats** referred to below at a favourable conservation status in their natural range.

This derogation authorises the following:

1. Roost disturbance
2. Actions authorised within the derogation

The derogation is issued in respect of the following **bat species**:

- **Soprano Pipistrelle** **Pipistrellus Pygmaeus**

Terms and Conditions

1. This derogation is granted solely to allow the activities specified in connection with the works located at **Countess Road, Killarney, County Kerry** for **Tadhg Twohig**
2. All activities authorised by this derogation, and all equipment used in connection herewith, shall be carried out, constructed and maintained (as the case may be) so as to avoid unnecessary injury or distress to any species of **BAT**. Anything done other than in accordance with the terms of this derogation may constitute an offence
3. This derogation may be modified or revoked, for stated reasons, at any time. In addition, the Minister reserves the right to revoke the derogation where updated information indicates that the basis upon which the derogation was granted has materially changed.
4. The mitigation measures outlined in the application report **(Bat Survey Large-scale Residential Development Countess Road Killarney Co. Kerry)** together with any changes or clarification agreed in correspondence between NPWS and the agent or applicant, are to be carried out. Strict adherence must be paid to all the proposed measures in the application.
5. The actions which this derogation authorise shall be completed between **2nd April – 31st December 2026, inclusive.**
6. The works will be supervised by bat ecologist(s): **Karen Banks**
7. If this derogation addresses works that are subject of a planning application, no such works permitted under this derogation can occur until planning permission is granted.
8. If this derogation expires prior to works permitted under this derogation commencing, a new application must be sought in advance, including the provision of any updated data or reports.
9. This derogation shall be produced for inspection on a request being made on that behalf by a member of An Garda Síochána or an authorised NPWS officer appointed under Regulation 4 of the Habitats Regulations.
10. The local **NPWS Conservation Ranger – Jason Lyne,** jason.lyne@npws.gov.ie**,** must be contacted prior to the commencement of any activity, and if bats are detected on site during the course of the work, under the terms of this derogation.
11. On completion of the actions which this derogation authorises, all recordings of bat species affected will be made using the standardised Returns form and must be submitted to the NPWS **within four weeks of the expiry date of this derogation**. Included with the Returns form, a report will also be submitted to wildlife.reports@npws.gov.ie detailing results of works and success of mitigation. **Both documents must be submitted to constitute a derogation return.**

For the Minister for Housing, Local Government & Heritage

(an officer authorised by the Minister to sign on his behalf)

02 April 2026

Any query in relation to this derogation should be sent to reg54derogations@npws.gov.ie



Derogation Assessment

Name of Applicant: Tadhg Twohig

Location/Name of Project: Countess Road, Killarney, County Kerry

Tick the following prohibition as chosen on the application:

(a) Deliberately capture or kill any specimen of the relevant species in the wild	☐
(b) Deliberately disturb these species particularly during the period of breeding, rearing, hibernation and migration	☐
(c) Deliberately take or destroy eggs of the relevant species in the wild	☐
(d) Damage or destroy a breeding or resting place of such an animal, or	☒
(e) Keep, transport, sell, exchange, offer for sale or offer for exchange any specimen of the relevant species taken in the wild, other than those taken legally as referred to in Article 12(2) of the Habitats Directive.	☐
(a) Deliberately pick, collect, cut, uproot or destroy any specimen of these species in the wild, or	☐
(b) Keep, transport, sell, exchange, offer for sale or offer for exchange any specimen of these species taken in the wild, other than those taken legally as referred to in Article 13(1)(b) of the Habitats Directive.	☐

Test 1: A reason(s) listed in Regulation 54 (a)-(e) applies to the proposed activity

i. Tick which reason <u>the applicant claims</u> should be applied to the derogation

(a) In the interests of protecting wild flora and fauna and conserving natural habitats,	☐
(b) To prevent serious damage, in particular to crops, livestock, forests, fisheries and water and other types of property	☐
(c) In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment,	☒
(d) For the purpose of research and education, of re-populating and re-introducing these species and for the breeding operations necessary for these purposes, including artificial propagation of plants, or	☐
(e) To allow, under strictly supervised conditions, on a selective basis and to a limited extent, the taking or keeping of certain specimens of the species to the extent specified therein, which are referred to in the First Schedule.	☐

ii. Test 1: Conclusion

Please tick the following where it applies:

There is a valid reason(s) listed in Regulation 54 (a)-(e) which applies to the proposed activity:	Yes	☒
	No	☐

Please outline your analysis below and state how the applicant has provided evidence to support your conclusion:

The application form and associated documentation provided by the applicant has been reviewed in full. The application relies on regulation 54(2)(c) '*in the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment*' as the reason chosen for a derogation that they believe applies to the proposed activity.

In the detail provided, it is clear that the applicants are relying on the imperative reasons of overriding public interest, including those of a social or economic nature aspect of Reason C. As outlined on page two of the accompanying report titled "Bat Survey Countess Road", a derogation is required for proposed works at Countess Road, Dromhale (townlands), Killarney, Co. Kerry.

The objective of the works is the construction of a large-scale residential development, a crèche and associated development and infrastructure works. The report further outlines on page 20 that the proposed development located within walking distance to Killarney Town centre will support local housing needs and provide employment while being "adjacent to social and community infrastructure. The development will allocate 20% of the stock to social housing, which will assist with Kerry County Councils housing waiting list and the crèche will also providing a social and economic benefit for the area.

The applicant has provided evidence as to the nature and scale of the public interest including those of a social or economic nature for the proposed works and the proposed activity is necessary to achieve these overall objectives. Based on the above this application has passed Test 1 and can now proceed to Test 2

Test 2: Absence of a satisfactory alternative

Please tick the following where it applies and add a comment below to support the recommendation:

The applicant has provided satisfactory evidence that alternative solutions have been considered and have given reasons why the proposed approach is the only satisfactory alternative:	Yes	☒
	No	☐

Please outline your analysis below and state how the applicant has provided evidence to support your conclusion (If you wish to add additional conditions please complete pg. 6):

The documentation submitted by the applicant has been reviewed, including the evidence for alternative solutions.
The purpose of the derogation is to allow the following activity to take place: The demolition of two semi-detached dwellings currently supporting a minor soprano pipistrelle roost is required to facilitate the construction of a residential development.

The specific situation that needs to be addressed is that the proposed development is required to fulfil a housing need and, as such, is of public interest of a social and economic nature. The provision of a residential development supports social and economic development and, as such, outweighs the conservation interest of the bat species, particularly as the roost is minor and of low conservation importance.

The alternative solutions suggested by the applicant are:
"Do-Nothing" scenario [NPWS regional staff accept the reasoning outlined by the applicant in their report as to why this is not a satisfactory alternative, do-nothing would result in loss of much needed residential properties. The dwellings themselves are of limited use by bats, alternative roost are present in the wider environment considering the presence of Killarney National Park roughly 700m from the dwellings.

"Alternative Location" scenario [NPWS regional staff accept the reasoning outlined by the applicant in their report as the location of the works is in a location zoned for residential development, situated in an urban setting. An alternative location is not feasible.]

"Alternative Design" scenario [NPWS regional staff accept the reasoning outlined by the application in their report as, the demolition of the dwellings, is required for the provision of residential developments. An alternative design is not feasible

Upon completion of your assessment, please return this Recommendation to WLU to continue the application process.

Test 3: Impact of a derogation on conservation status of the species

Please tick the following where it applies and add a comment below to support the recommendation:

The derogation would NOT be detrimental to the maintenance of the populations of the species in question at a favourable conservation status in their natural range.	Yes	☒
	No	☐

Please outline your analysis below and state how the applicant has provided evidence to support your conclusion. (If you wish to add additional conditions please complete pg. 6)

A small soprano pipistrelle roost is present within one of the buildings on site. This species is widespread and abundant in Ireland and is in favourable conservation status. This species is also adaptable and quick to occupy new roosting features.

Suitable and proportionate mitigation has been proposed, including the erection of bat boxes and sensitive lighting.

Providing these mitigation measures are implemented, I am satisfied that the works will not be detrimental to the maintenance of the populations of the species in question at a favourable conservation status in their natural range.

If the answer above is Yes then the derogation may be granted, providing Tests 1 and 2 have also been met.

Upon completion of your assessment, please return this Recommendation to WLU to continue the application process.

Derogation decision

The application for a derogation under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. 477 of 2011), as amended, has been assessed by officials in the Department and the following decision has been made:

Tick box where appropriate:

There is no satisfactory alternative	☒
and the derogation is not detrimental to the maintenance of the populations of the species to which the Habitats Directive relates at a favourable conservation status in their natural range.	☒

Therefore, a derogation may be granted to the applicant, since it is—

(a) in the interests of protecting wild fauna and flora and conserving natural habitats	☐
(b) to prevent serious damage, in particular to crops, livestock, forests, fisheries and water and other types of property,	☐
(c) in the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment,	☒
(d) for the purpose of research and education, of repopulating and re-introducing these species and for the breeding operations necessary for these purposes, including the artificial propagation of plants, or	☐
(e) to allow, under strictly supervised conditions, on a selective basis and to a limited extent, the taking or keeping of certain specimens of the species to the extent specified therein, which are referred to in the First Schedule.	☐
OR **This application has been refused as one or more of the conditions set out above have not been met**	☐

The following conditions should be attached to the derogation:

1.
2.
3.
4.

[add additional conditions where required]

Signed: 

Date: April 2, 2026

Position: Ecologist