

# Bat Assessment Report

---

Kilfinane Market House, The Square, Kilfinane, Co. Limerick

Prepared by: Beo Ecology  
Prepared for: Limerick City & County Council



Revision	Document Number	Description	Prepared By	Checked By	Date
Final	PR61P003	Bat Assessment Report	SM	SM	16.11.2023

Sheila Murphy B.Sc. M.Sc. MCIEEM trading as Beo Ecology.  
Office: Shrulce, Co. Mayo  
Contact: [info@beoecology.ie](mailto:info@beoecology.ie)

# Table of Contents

<b>1</b>	<b>Introduction</b> .....	<b>3</b>
1.1	Statement of Authority .....	3
1.2	Site Location .....	3
1.3	Legal and Conservation Status .....	4
1.4	Information Consulted for this Report .....	5
<b>2</b>	<b>Methodology</b> .....	<b>6</b>
2.1	Aims and Objectives.....	6
2.2	Visual Roost Inspection Survey .....	6
2.3	Dawn/Dusk Re-Entry/Emergence Survey .....	7
<b>3</b>	<b>Recommendations</b> .....	<b>8</b>
3.1	Mitigation Measures .....	8
3.1.1	Vegetation Removal .....	8
3.1.2	Lighting.....	9
<b>4</b>	<b>References</b> .....	<b>11</b>
	 <b>Figure 1-1: Site Location of Kilfinane Market House</b> .....	 <b>3</b>
	 <b>Table 1-1: Irish Bat Species and their Legal and Conservation Status</b> .....	 <b>4</b>
	<b>Table 2-1: Roost Suitability (Collins, 2016)</b> .....	<b>6</b>
	<b>Table 2-2: Level of Survey Effort Required as per Roost Suitability</b> .....	<b>7</b>
	<b>Table 2-3: Recommended Start &amp; End Times for Activity Surveys</b> .....	<b>8</b>
	 <b>Image 4-1: View of derelict building from the front</b> .....	 <b>4</b>
	<b>Image 4-2: Internal view of the building space</b> .....	<b>4</b>
	<b>Image 4-3: Ivy covered internal wall and stone steps to the rear of the building</b> .....	<b>4</b>

# 1 Introduction

Beo Ecology has been commissioned by Limerick City & County Council to conduct a provisional bat assessment of Kilfinane Market House, Kilfinane, Co. Limerick

## 1.1 Statement of Authority

Sheila Murphy trading as Beo Ecology holds a B.Sc. (Hons) in Environmental Science, and M.Sc. in Biodiversity and Conservation, she has over 13 years' experience in her field. She has extensive experience in the field of ecology and bat assessments having worked on numerous large road developments, flood relief schemes and smaller scale bridge repairs which required bat assessment and survey work. She has experience in conducting the following: identification of buildings and trees as potential bat roosts (PBR), inspection of structures to determine presence/absence of bat species, conducting bat surveys (dawn/dusk/transects) using equipment such as Batbox Duet, Echometer touch and Pettersson handheld detectors, the deployment of static recorders (SM2+/SM4BAT), and analysis of audio data using Kaleidoscope. Sheila is a Full Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM) and currently holds a general bat survey licence (DER/BAT 2023-83).

## 1.2 Site Location

See **Figure 1.1** for the site location of Kilfinane Market House and **Images 1.1** to **Image 1.3** of building.



Figure 1-1: Site Location of Kilfinane Market House



Image 1-1: View of derelict building from the front



Image 1-2: Internal view of the building space

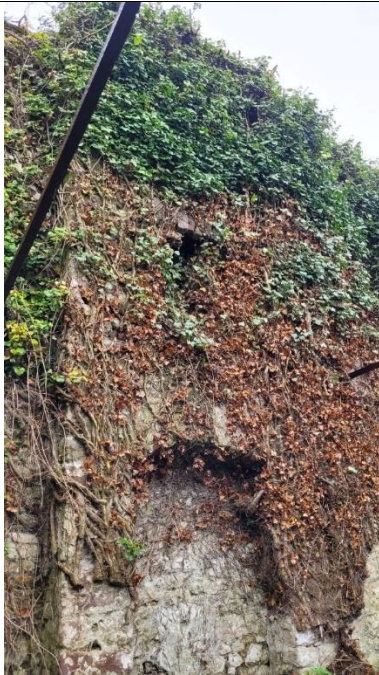


Image 1-3: Ivy covered internal wall and stone steps to the rear of the building.

### 1.3 Legal and Conservation Status

Bats are protected by law in the Republic of Ireland under the Wildlife Act 1976 and subsequent amendments. It is an offence to intentionally disturb, injure or kill a bat or disturb its resting place. In addition to domestic legislation bats are also protected under the EU Habitats Directive (92/43/EEC). The lesser horseshoe bat which is found in the Republic of Ireland, is the only bat species also listed in Annex II of the EU Habitats Directive, while all bat species are listed in Annex IV of the same Directive. The EU Habitats Directive has been transposed into both Irish and Northern Irish law with the European Communities (Birds and Natural Habitats) Regulations 2011 and the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 as amended.<sup>1</sup>

All Irish bats are protected under national and EU legislation. Both the animals themselves and their roosts are protected, and it is an offence to disturb or interfere with them without a licence. **Table 1-1** below lists the bat species presence in Ireland the legal and conservation status.

**Table 1-1: Irish Bat Species and their Legal and Conservation Status**

<sup>1</sup> <https://www.batconservationireland.org/irish-bats/protection-law>

Common Name	Scientific Name	Status	Irish Red List Status <sup>2</sup>
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	EU Habitats Directive (Annex IV) Wildlife Acts	Least Concern
Nathusius' pipistrelle	<i>Pipistrellus nathusii</i>	EU Habitats Directive (Annex IV) Wildlife Acts	Not referenced
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	EU Habitats Directive (Annex II, IV) Wildlife Acts	Least Concern
Daubenton's bat	<i>Myotis daubentonii</i>	EU Habitats Directive (Annex IV) Wildlife Acts	Least Concern
Natterer's bat	<i>Myotis nattereri</i>	EU Habitats Directive (Annex IV) Wildlife Acts	Least Concern
Whiskered bat	<i>Myotis mystacinus</i>	EU Habitats Directive (Annex IV) Wildlife Acts	Least Concern
Brown Long-eared Bat	<i>Plecotus auritus</i>	EU Habitats Directive (Annex IV) Wildlife Acts	Least Concern
Leisler's Bat	<i>Nyctalus leisleri</i>	EU Habitats Directive (Annex IV) Wildlife Acts	Least Concern
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	EU Habitats Directive (Annex IV) Wildlife Acts	Least Concern

## 1.4 Information Consulted for this Report

A desk study was undertaken as part of this assessment. This has been informed by the following sources of data;

- Information on the location, nature and design of the proposed project as provided by the client;
- National Parks and Wildlife Service protected site and species information and data (<https://www.npws.ie/protected-sites>);
- National Biodiversity Data Centre ([www.biodiversityireland.ie](http://www.biodiversityireland.ie));
- Ordnance Survey of Ireland mapping and aerial photography ([www.osi.ie](http://www.osi.ie)); and,
- Geological Survey Ireland online mapping and data (<https://www.gsi.ie/en-ie/Pages/default.aspx>).

The following guidance documents have been referred to as part of this assessment:

- *Bat Survey Guidelines: Traditional Farm Buildings Scheme*. The Heritage Council, Áras na hOidhreachta, Church Lane, Kilkenny (2008)
- *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4<sup>th</sup> edn). The Bat Conservation Trust, London (2023);
- *The Best Practice for the Conservation of Bats in the Planning of National Road Schemes*, National Roads Authority (2005); and
- *Guidelines for the Treatment of Bats during the construction of National Road Schemes*, National Roads Authority (2009).

<sup>2</sup> [Irish Red List No. 12: Terrestrial Mammals](#)

## 2 Methodology

### 2.1 Aims and Objectives

As per the *Bat Survey Guidelines: Traditional Farm Buildings Scheme* (The Heritage Council, 2008) a bat survey should aim too:

- Determine if bats are currently present in the building(s) or have been present in the past.
- The bat species using the building(s).
- The number of bats in the building(s).
- The roost category or categories e.g. the purpose and therefore the importance of the building(s) for bats.
- The bats' entry and exit points within the structure(s).
- The bats' roosting locations within the building(s).
- The commuting corridors used by bats to and from their roost(s) with a description of any vegetation or other linear features of importance to bats that should be retained.
- Describe any ongoing or recent renovations that may have lead to loss of evidence of roosts.

### 2.2 Visual Roost Inspection Survey

A visual roost inspection survey was undertaken in line with Collins (2016) guidelines. The site consists of a derelict stone building (BL3), with no roof or windows. The stonework is crumbling in places and supports dense ivy scrub growth (WS1) which has been cut at the base. The stonework was relatively pointed however difficult to assess due to the presence of ivy. The ground floor of the site is open to the elements and recolonising vegetation.

The following signs were looked for as part of the Potential Roost survey;

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

The suitability of a roost can be classified as per **Table 2-1** (Collins, 2016) assessing the potential of the structure and surrounding habitat, taking into account the location, structure type, and the level of disturbance.

**Table 2-1: Roost Suitability (Collins, 2016)**

Suitability	Description of Roosting Habitats	Commuting & Foraging Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat feature on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used opportunistically by individual bats. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions <sup>3</sup> and/or suitable surrounding habitat to be used on a regular basis or by larger	Habitat that could be used by a small number of commuting bats such as isolated hedgerows with substantial gaps in them or un-vegetated streams that are not very well connected to the surrounding landscape by other habitats.  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.

<sup>3</sup> For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

Suitability	Description of Roosting Habitats	Commuting & Foraging Habitats
	<p>numbers of bats (i.e., unlikely to be suitable for maternity or hibernation<sup>4</sup>).</p> <p>A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential<sup>5</sup>.</p>	
Moderate	A structure or tree with one or more potential roost location 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 – the assessment in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscaper that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitats that are connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland and water.
High	A structure or tree 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.	Continuous high-quality habitat connected to the wider landscaper that could be used by bats for commuting such as river valleys, streams, hedgerows, lines of trees and woodland edge.

## 2.3 Dawn/Dusk Re-Entry/Emergence Survey

A detector survey of the structure(s) may be necessary following the daytime inspection for a number of reasons (The Heritage Council, 2010):

- To assess species composition and/or numbers of bats present.
- To determine bat access points.
- Full access to the structure during daytime inspection may not have been possible.

The level of survey effort is determined by the classification of the PRF. See **Table 2-2** which outlines the survey effort requirements as per Collins (2016) guidelines.

**Table 2-2: Level of Survey Effort Required as per Roost Suitability**

Low Roost Suitability	Moderate Roost Suitability	High Roost Suitability
One survey visit. One dusk emergence or dawn re-entry survey (structures) No further surveys required (trees)	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey.	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn.

<sup>4</sup> Evidence from the Netherlands shows mass swarming events of common Pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten et., al., 2015). This phenomenon requires some research in the UK and Ireland but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments.

<sup>5</sup> This system of categorising aligns with BD 8596:2015 Surveying for bats in trees and woodland (BSI, 2015).



A dusk survey should begin approximately 15 minutes before sunset and should last for two hours as different bat species may choose to emerge at different times. **Table 2-3** outlines the recommended start and end times for activity surveys (Collins, 2016).

**Table 2-3: Recommended Start & End Times for Activity Surveys**

Survey Type	Sunset Time	End Time
Dusk Survey – Bat Activity	Sunset <sup>6</sup>	2-3 hours after sunset
Dusk Survey -Swarming	2 hours after sunset	5 hours after sunset
Dusk to pre—dawn survey	Sunset	Sunrise or later if bat still active
Automated bat detectors survey	30 minutes before sunset	30 minutes after sunrise.

### 3 Recommendations

A search of the National Biodiversity Data Centre (NBDC) database (<https://maps.biodiversityireland.ie/Map>) was conducted for any records of bat species located within the 2km<sup>2</sup> grid square (R62W) in which the building is located and the adjoining 2km<sup>2</sup> (R62R). Neither grid squares supported records of bat species in the area.

The building has low roost potential, with no roof, doors or windows to provide shelter, as a result the shell of the building is very open to the elements. However, there is dense ivy growth on a section of the building. This has been recently cut at the base and is dying back significantly. The building is pointed however does support cracks and crevices; these were not inspected due to the presence of ivy.

Although of low bat potential, giving the presence of the ivy around the building cracks and crevices, along with the network of older buildings, treelines and hedgerows in the wider landscape it is recommended to conduct a dusk emergence survey at an appropriate time of year prior to works commencing. The bat survey will be carried out by a suitably qualified ecologist.

It is recommended that the ivy removal is supervised by a suitably qualified ecologist. In the event bats are identified as roosting or utilising the site, suitable mitigation measures will be put in place regards exclusion and provision of alternative roosting habitat. This will be carried out under the guidance of a suitably qualified and licenced bat ecologist.

It is recommended the following additional mitigation measures are adhered too to protect the potential on-site bat population.

#### 3.1 Mitigation Measures

##### 3.1.1 Vegetation Removal

The following guidelines will be adhered too in consultation with a suitably qualified ecologist. The following should be noted regards vegetation removal:

- No scrub clearance, tree-felling or other removal of vegetation should occur during the bird breeding season from 1<sup>st</sup> March to 31<sup>st</sup> August as outlined by;
- Restrictions on cutting hedgerows are set out in Section 40 of the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000 and the Heritage Act 2018. These Acts stipulate that it is an offence to

<sup>6</sup> Adjust to earlier if in darker habitats such as woodland or if data justifies (e.g. if bats are already out by sunset on previous surveys or automated detectors show pre-sunset activity).

destroy vegetation on uncultivated land between the **1st of March** and the **31st of August** each year (NPWS).

- It is illegal under the Wildlife Act 1976 to wilfully take or remove the eggs or nest of a protected wild bird otherwise than under and in accordance with such a licence, wilfully destroy, injure or mutilate the eggs or nest of a protected wild bird and wilfully disturb a protected wild bird on or near a nest containing eggs or unflown young.

Trees identified for felling should be inspected by a suitably qualified ecologist/ bat specialist for presence of bats species. The following NRA's *Guidelines for the Protection of Bats during the Construction of National Road Schemes*<sup>7</sup> will be adhered to:

- All bats, and trees that are identified as bat roosts, are afforded legal protection by the Wildlife Acts, 1976 and 2000 and the EU Habitats Directive (under S.I. 94 of 1997). To proceed with the felling of these trees, it is necessary to obtain a licence from the NPWS.
- Tree-felling should ideally be undertaken in the period late August to late October/early November. During this period bats are capable of flight and may avoid the risks of tree-felling if proper measures are undertaken.
- Immediately prior to felling, the trees should be examined for the presence or absence of bats, and/or other bat activity. This survey should be carried out by a suitably qualified bat specialist and should include a visual inspection of the tree during daylight hours followed by a night-time detector survey. The survey should be carried out from dusk through the night till dawn to ensure that bats do not re-enter the tree.
- Where an autumn examination of a tree has shown that bats have not emerged or returned to a tree, it is safe to proceed with the felling of the tree the following day, once the appropriate tree-felling licence, if required, has been secured. Such an inspection confirms the status of the tree only at the time of inspection and where there is a delay of one day or greater the tree must be re-assessed.
- In areas where bats are known to exist, tree-felling should not be undertaken in June, July and early August, in order to ensure that breeding populations of bats are protected. Bats typically form maternity roosts from late May onwards and single young are born in June or July.
- Felling during the winter months is to be avoided as this creates the additional risk that bats may be in hibernation and thus unable to escape from a tree that is being felled.
- Tree-felling can be undertaken using heavy plant and chainsaw.
- Normally trees are pushed over, with a need to excavate and sever roots in some cases. In order to ensure the optimum warning for any roosting bats that may still be present, the tree should be pushed lightly two to three times, with a pause of approximately 30 seconds between each nudge to allow bats to become active.
- The tree should then be pushed to the ground slowly and should remain in place until it is inspected by a bat specialist.
- Trees that are known to be bat roosts should not be sawn up or mulched immediately.
- A period of at least 24 hours, and preferably 48 hours, should elapse prior to such operations to allow bats to escape.
- When felling trees with a chainsaw, it is important to ensure that the rate of fall is not accelerated by the use of a chain and vehicle (e.g. tractor). It is unlikely that a bat would survive such a heavy impact.

### 3.1.2 Lighting

In the event lighting is put in place at the site, the following guidelines outline lighting measures to avoid impacts to bat species;<sup>8</sup>

---

<sup>7</sup> <https://www.tii.ie/tii-library/environment/construction-guidelines/Guidelines-for-the-Treatment-of-Bats-during-the-Construction-of-National-Road-Schemes.pdf>

<sup>8</sup> [https://www.batconservationireland.org/wp-content/uploads/2013/09/BCIrelandGuidelines\\_Lighting.pdf](https://www.batconservationireland.org/wp-content/uploads/2013/09/BCIrelandGuidelines_Lighting.pdf)

- Directional lighting means lighting is directed to where it is needed and thus prevent light spillage and light pollution. Avoid the use of mercury or metal halide lamps.
- Minimise light spills using shields, masking & louvres
  - Luminary (Light) accessories Shields – these can be mounted at the front or back of luminaire.
  - Masking – by painting a section of the luminaire protectors, light will be blocked from penetrating through.
  - Louvres – these can be either internal or external rows of slates angled to block light in a certain direction
- Keep light columns as low as possible.
- Using modern light technology that restricts the horizontal plane of the luminaries thereby directing the lighting to where required (e.g. HiLux Projectors). Use luminaries that ensure light is not directed at an angle greater than 70° from the vertical plane (i.e. using flat glass protector).
- Hours of illumination – provide some hours of darkness.

## 4 References

Aughney, T., Kelleher, C. & Mullen, D. (2008) *Bat Survey Guidelines: Traditional Farm Buildings Scheme*. The Heritage Council, Áras na hOidhreachta, Church Lane, Kilkenny.

Collins, J(ed) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3<sup>rd</sup> edn). The Bat Conservation Trust, London.

Gilbert G, Stanbury A and Lewis L (2021), "*Birds of Conservation Concern in Ireland 2020 –2026*". Irish Birds 9: 523–544

Lundy, M.G., Aughney, T., Montgomery, W.I., & Roche, N., (2011) *Landscape conservation for Irish bats & species specific roosting characteristics*. Bat Conservation Ireland.

National Roads Authority (2005), *The Best Practice for the Conservation of Bats in the Planning of National Road Schemes*.

National Roads Authority (2009), *Guidelines for the Treatment of Bats during the construction of National Road Schemes*.