
Appendix 15.6
Preliminary Bat Roost
Assessment – Structures

Methodology

Desktop Review

A desktop review of publicly available relevant data was undertaken on the National Biodiversity Data Centre (NBDC) and National Parks & Wildlife Service (NPWS) websites. The National Biodiversity Data Centre was reviewed for relevant data, specifically i) existing species records for the 10km square in which the study site is located and ii) an indication of the relative importance of the wider landscape in which the study site is located, based on Model of Bat Landscapes for Ireland (Lundy *et al.*, 2011). In the latter, the index ranges from 0 to 100, with 0 being least favourable and 100 most favourable for bats.

Visual Roost Inspection Survey

All surveys undertaken on site followed the methods outlined in the Collins (2016) guidelines. As part of these guidelines, it is suggested that an initial site visit and daylight roost inspection takes place for two reasons:

- To ascertain if there were any obvious signs of bat activity at the structure/potential roosting areas associated with the structure; and
- To ascertain if there were any health and safety hazards associated with the structure.

The initial daytime search involved a methodical search, using high powered torches and an endoscope, where the structure is examined using best practice techniques to locate droppings beneath gable ends, on windowsills, under hanging tiles, fascia's, on windows or on walls. In addition, the structure is examined for urine and oily residue stains, scratch marks and the remains of insect prey (moth wings etc.) to try to identify Potential Roost Features (PRFs).

Following the external search, all of the internal areas are examined for bat signs in the form of bat droppings, urine and oily residue stains as well individual bats present in lofts or crevice locations. Head torches, handheld torches and endoscopes are used for these searches.

The aims of the bat roost survey in buildings are to:

- Determine if bats are currently present or have been present in the past;
- Determine the bat species;
- Determine the number of bats;
- Determine the roost category or categories e.g., the purpose and therefore the importance of the structure/ tree;
- Determine the bats' entry and exit points within the structure(s);
- Determine the bats' roosting locations within the structure; and
- Determine 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.

It is important to note that each species of bat have specific roosting requirements. For example, brown long-eared bats have a preference for older buildings where pipistrelles are commonly found in modern buildings. Daubenton's bats are frequently found roosting underneath bridges, and Leisler's colonies are most frequently found in big trees. However, each species can be found in alternate roosting locations. Roost suitability/condition is determined by site context and the characteristics of the PRF in questions; such as temperature, humidity, height above ground level, light levels or levels of disturbance etc.

If PRFs are identified following the inspection, they are categorised according to the description in Collins (2016) and are subsequently ranked in order of priority. The descriptions, classification and rankings assigned to each PRF are then used to identify the requisite level of surveying required to ensure compliance with the guidelines. The dawn/dusk survey effort required for each of the roost suitability categories followed Collins (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines.

For roost inspection surveys it is obligatory that surveys be undertaken by licenced, appropriately trained and experienced bat specialists to prevent roost abandonment and accidental injury or death to bats.

Dusk/Dawn Emergence/Re-entry Bat Survey

Using the evidence gathered during the initial daylight site inspections at each potential roost, dusk/dawn roost surveys are then conducted using Echo Meter Touch Pro's. A dusk survey is conducted a 15 mins before dusk until 1.5 – 2 hours after dusk and a dawn survey is conducted 1.5 – 2 hours before dawn until 15 mins after dawn. The dusk/dawn surveys should be carried out in optimal weather conditions e.g., mild temperatures, light winds and no rainfall to maximise the results of the roost surveys (Kelleher and Marnell 2007, Collins 2016).

Once surveys have concluded and a roost is located an assessment as to the significance of the roost can be conducted using best practice guidelines (NRA, 2005). These guidelines provide a basis for comparing the importance of different building roosts nationally and internationally (**Table 38**). Evaluation of ecological features follows the NRA (now TII) publication 'Guidelines for Assessment of Ecological Impacts of National Roads Schemes' (2009). Impact assessment follows 'Guidelines on The Information to be Contained in Environmental Impact Assessment Reports' published by the EPA (2017). Reporting follows Chartered Institute of Ecology and Environmental Management (2018) 'Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater, Coastal and Marine'.

Table 38. Bat species roosts and their ecological significance

Species	Indicator	Significance
Lesser Horseshoe Bat	SAC	Very significant
	If present	Significant
Whiskered/Brandt's	>10	Very significant
	If present	Significant
Natterer's	>10	Very significant
	If present	Significant
Daubenton's	Maternity roost	Very significant
Leisler's	Maternity roost	Very significant
Common Pipistrelle	Maternity roost	Significant
Soprano Pipistrelle	Maternity roost	Significant
Brown long-eared	Maternity roost	Significant

Results

Desktop Review

The following species have previously been recorded in the 10 km square (N97) in which the site is located:

- Brown Long-eared Bat (*Plecotus auritus*)
- Daubenton's Bat (*Myotis daubentonii*)
- Nathusius's Pipistrelle (*Pipistrellus nathusii*)
- Leisler's Bat (*Nyctalus leisleri*)
- Natterer's Bat (*Myotis nattereri*)
- Common Pipistrelle (*Pipistrellus pipistrellus*)
- Soprano Pipistrelle (*Pipistrellus pygmaeus*)
- Whiskered Bat (*Myotis mystacinus*)

The absence of other bat species records may reflect lack of data as opposed to an absence of bats from the relevant area.

The overall bat suitability index value (33.33) according to 'Model of Bat Landscapes for Ireland' (Lundy *et al.*, 2011) suggests the landscape in which the proposed site is located is of low suitability for bats in general. Species specific scores are provided in **Table 39**.

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Table 39. Suitability of the study area for the bat species according to ‘Model of Bat Landscapes for Ireland’ (Lundy *et al.*, 2011)

Common name	Scientific name	Suitability index
All bats		33.33
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	43
Brown long-eared bat	<i>Plecotus auritus</i>	41
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	47
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	0
Leisler’s bat	<i>Nyctalus leisleri</i>	48
Whiskered bat	<i>Myotis mystacinus</i>	33
Daubenton’s bat	<i>Myotis daubentonii</i>	35
Nathusius pipistrelle	<i>Pipistrellus nathusii</i>	10
Natterer’s bat	<i>Myotis nattererii</i>	43

Visual Roost Inspection Survey

Daytime visual assessments were carried out by Domhnall Finch (DER/BAT 2020-03 and C20/2021), on the 15th of July 2021 to identify any bat roosting potential which may exist associated with the two buildings (*Plate 1 – 7*).

Bats were not confirmed to be roosting in either Building A or B during the internal and external visual inspections.

However, based on this inspection, potential roosting locations were identified in Building A both within and surrounding the chimney, as well as the between the wooden boards at the apex of the roof. There were holes in the wire mesh in the windows and a large gap between the door the wall above it, which would allow access to the building. Some roosting potential was also identified in Building B, mainly the small cracks between the walls and ceilings (where present), as well as within an area beside the fireplace which was enclosed apart from the lower half of the area (*Plate 7*).

Based upon the results of the visual roost survey, and considering the local context, the Building A and B were considered to be of ‘low’ likelihood to support roosting bats.

Dusk/Dawn Emergence/Re-entry Bat Survey

An emergence survey was carried out on Building A by Domhnall Finch and Kieran Finch (**Table 40**).

Table 40. Details of the emergence survey undertaken at Building A.

Date	Sunset [HH:MM]	Start Time [HH:MM]	End Time [HH:MM]	Temp [°C]	Precipitation	Cloud Cover [%]	Wind Condition [km/h]
15.07.2021	21:48	21:29	23:20	18.6 - 18.8	Dry	20	1.4 – 2.5

No bats were recorded emerging from Building A during the emergence survey.

During the surveys, a low level of bat activity was detected foraging and commuting around Building A. Three species were observed being active on the survey site including Leisler’s, common pipistrelle and soprano pipistrelle.

Photographs (Plates)



Plate 1. View from the north eastern side of Building A



Plate 2. View from the south western side of Building A



Plate 3. View from the south eastern side of Building A



Plate 4. View from the interior of Building A showing chimney



Plate 5. View of the north side of Building B



Plate 6. View of some of the cracks in the wall with potential roosting spaces in Building B



Plate 7. View of the area beside (left) the fireplace with a high roof which is enclosed in Building B