



A bat assessment of the house at Tinnahinch, Carlow prior to approved major alterations and extension

By Brian Keeley
Wildlife Surveys Ireland
Golashane Nature Reserve
Tierworker, Kells, Co. Meath
A82 VE86
www.wildlifesurveys.net

For James and Keelin Coyle
17/7/25



Summary

Bat species roosting within the house

Soprano pipistrelle *Pipistrellus pygmaeus*

One soprano pipistrelle was recorded returning to the house roof at 04.34 am prior to sunrise (05.11 am) on July 2nd 2025. 3 soprano pipistrelles were seen to pass over the roof at emergence time on July 1st 2025, of which one was seen to emerge from the small dormer over the front door. It is likely that there were 3 soprano pipistrelles present on July 1st 2025 and only 1 soprano pipistrelle within the house on July 2nd 2025. The presence of even one bat identifies a structure as a bat roost and the structure is afforded legal protection as such under the Wildlife Act and all Irish implementations of the Habitats Directive.

While other species were noted to fly over and around the house, this was the only resident species.

Bat species found feeding and commuting on the site

Common pipistrelle *Pipistrellus pipistrellus*

Soprano pipistrelle *Pipistrellus pygmaeus*

Leisler's bat *Nyctalus leisleri*

Daubenton's bat *Myotis daubentonii*

Myotis species *Myotis nattereri* and *mystacinus*
probably Natterer's bat and potentially whiskered bat

There is high bat activity under mature trees upriver of the house and all along the river especially along the upriver section. The river is a highly important site for bats of the area, in particular soprano pipistrelles and Daubenton's bats.

Mitigation and Recommendations

Mitigation by remedy

- (1) A derogation shall be acquired from NPWS prior to any work that would affect the roof area of the building.
- (2) A bat specialist shall attend for all work that will involve ceiling or roof alterations or attic work close to the roost site identified. Any bats shall be taken into

protective care to allow the work to progress and shall be released once it is safe.

- (3) 1 x 1FF Schwegler bat box shall be incorporated into the building. The position shall be confirmed as suitable by the consulting bat specialist. This box can be purchased from www.nhbs.com and must be placed in a dark area.
- (4) 3 x 2F Schwegler bat boxes shall be attached to mature trees where lighting will not fall upon them. Boxes must be 3 metres or higher above ground and away from high scrub or clutter.
- (5) No lighting shall be directed towards the River Barrow. No lighting shall spill on to the area within which the bat boxes have been provided.

Lighting design will be in accordance with:

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

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

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

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

Mitigation Options and Recommendations (Eurobats)

The Eurobats guidelines (Voigt et al. 2018) for lighting at night and bat conservation considerations include:

- **Limiting the duration of night-time lighting**
- **Dimming illuminance and limiting light trespass**
- **Limiting the short wavelength (UV and blue) content of the light spectrum** (wavelengths in the UV range can be filtered without any decrease in *illuminance* level)

- (6) Monitoring of the bat boxes should take place within 2 years of the bat exclusion and the provision of additional bat boxes may be required as a consequence of this evaluation.



Under the three Derogation Tests for An Application for Derogation Under Regulation 54 & 54A of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended, the following conclusions have been drawn by the bat specialist engaged for this project:

Test 1: Reason for the Derogation

a.	In the interests of protecting wild flora and fauna and conserving natural habitats (proceed to 2a)	☐
b.	To prevent serious damage, in particular to crops, livestock, forests, fisheries and water and other types of property (proceed to 2b)	☐
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 (proceed to 2c)	☒
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 (proceed to 2d)	☐
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 (proceed to 2e)	☐

- The project provides a fully functional house as opposed to an occasional weekend away building with very basic facilities. This brings a house into full use.
- At present, the lock house is a building with a requirement for significant structural alteration to ensure its stability and safety. The building is in need of new windows, a new roof and other measures to protect it from sliding into uninhabitable. The owners have chosen to embrace this opportunity to expand the house significantly and make it useable throughout the year. This will involve expansion on the stretch of canal downstream of Tinnahinch village, but will require major changes to the house itself. This will include re-roofing. The 1 to 3 bats noted were within the roof close to the main door of the house and this roof will be replaced as part of the repairs. The house is in need of expansion to allow full occupancy and a move away from a holiday break house. The house has received approval to add a large area to it that will involve work throughout the building and including the roof area where bat(s) are present.
- Without any mitigation measures, there may be a loss of a minor roost and individual bats may be placed at risk. However, there are measures in place to provide future roost sites for bats within and around the building and there will be a monitoring of roof work to prevent risk to bats during the stripping of the roof.



Conclusion for Test 1

The roost is a very minor soprano pipistrelle roost. This species is one of the most inquisitive and adventurous species and will occupy bat boxes and new buildings at a very early stage. The building will still be available as a potential roost site and there will be bat roost boxes provided around and within the building. This will have no negative impact upon bat conservation.

Test 2: Absence of Alternative solutions

Do-Nothing	• Retaining the existing structures would leave bat roosts undisturbed and there would be a small number of bats using the house. The house would potentially become less used as its condition deteriorates and bats may be able to use the building for a sustained period until the building began to deteriorate to a stage where the roost sites no longer offer the conditions required by the bats. • In contrast to the proposed mitigation by which there will be mitigation for at least 20 years by using Schwegler bat boxes.
Avoidance of all roosts •	• Avoidance of all bat roost locations within the site was considered. • However, the roosts are located in the roof of the house and this will require works to continue the stability of the structure, regardless of any house extension.

Test 3: Impact of a Derogation on Conservation Status

Given the abundance of soprano pipistrelle bats within the landscape and their uptake and early use of bat boxes and other structures when provided, and given the very small number of bats involved, this work will have no impact upon the conservation of the species. There is a possibility for increased roost opportunities from the work undertaken on the house and for more sustained and lasting roost sites.

There are a maximum of 3 bats affected by the work and following completion, there will be more bat roost opportunities for a longer period on-site.

Preliminary survey details

Habitat classification and descriptions (Fossitt 2000) available to bats

Lowland depositing river, woodland, treelines, hedgerow

Light levels: 0 lux at the house

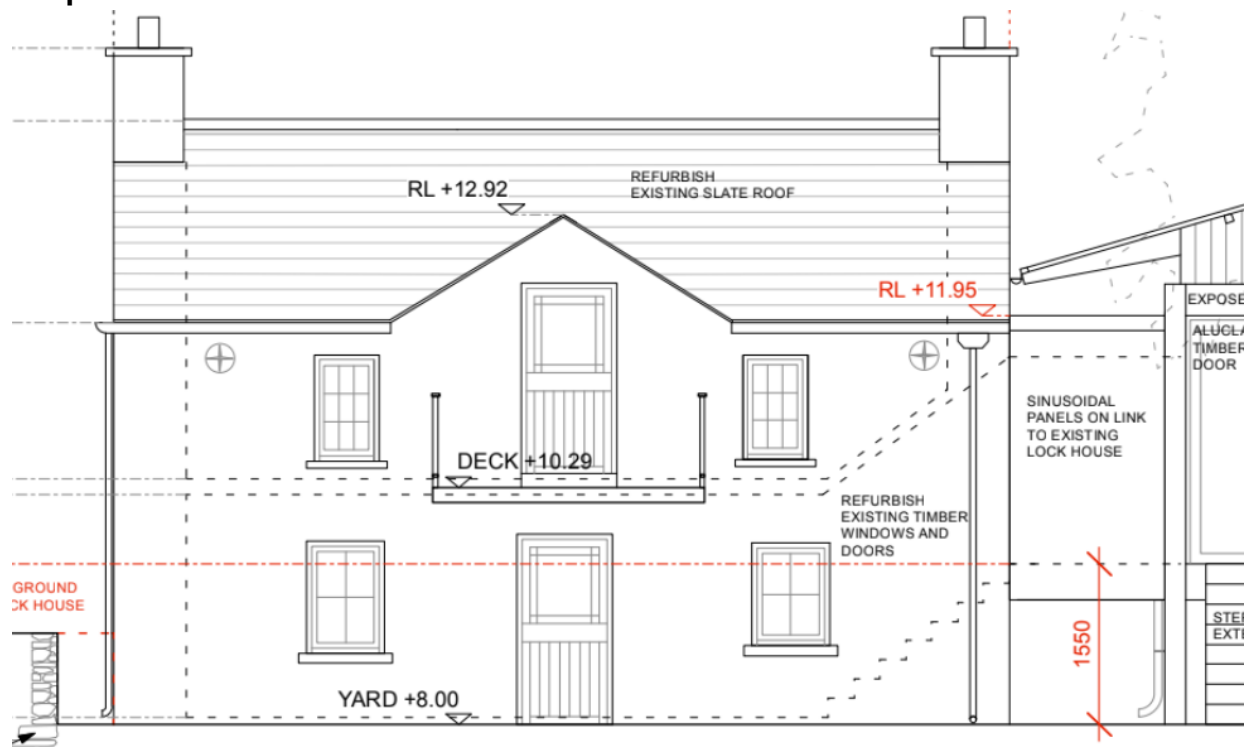
Temperature and weather conditions

The temperature survey was 14°C during the morning survey. Dry with a light breeze.

Date: [Tuesday, 01/07/25] **Sunset time:** [21:54] **Sunrise time:** [05:11]

Temperature and weather conditions The temperature during the night survey was 14°C at sunset and remained at this up to sunrise.

Proposed works



"Refurbish Existing Blue / Black Natural Slate Roof"

The area has great bat habitat including the river and numerous trees, including some directly upriver of the house where bat activity was very high.



Survey constraints

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

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

(3) Timing of survey: Bat surveys generally take place when the bats are active – May – September. A bat survey which takes place outside these dates may miss roosting activity. This survey was ideally timed for evaluating for breeding bats and for high levels of bat activity.

Methodology

Surveyors

Brian Keeley and Hugh Keeley of Wildlife Surveys Ireland carried out this survey.

Equipment

- Exide Lamps (one per surveyor)
- Petzl Tikka Head torches (one per surveyor)
- Batlogger M2 time expansion detectors and Kaleidoscope Pro sound analysis software with GPS (one per surveyor)
- One thermal imager per surveyor
- One Songmeter Mini Bat detector placed overnight at the front of the house
- Mobile phones for communication during the survey (one per surveyor)
- One lux meter per surveyor



River beyond the house and static monitor on the window sill

Survey procedure

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

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

Surveyors return to a site approximately 90 minutes before sunrise the next morning. At this time, any changes in temperature and weather conditions are noted, as well as any other factors (e.g. street lighting) that may have impacted bat activity during the night.



Surveyors cover the site area again, this time with particular attention paid to possible roosts, as bats can be seen returning to their roosts during this time period. Any static monitors left out the previous night are collected for analysis.

There was one thermal imager mounted on a tripod pointing at the front of the house. The second imager was handheld for the duration of the survey.

Surveys are conducted with reference to the following documents –

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

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

Survey

Assessment of buildings as potential roosts with photos

The house is a small structure but given its proximity to the River Barrow, the age of the structure and the complexity of the roof (the additional dormer roof and the quantity of slate and old timber), it offers high roost potential. No accumulations of droppings or staining were evident on the building, at gable ends, on windows or window sills, stairways or gullies or valleys and there is no external indication that bats roost within the building.



2 storey but small lockkeeper's house near Tinnahinch. There were no signs of bat occupancy on the building but the number of roof angles and the slated roof and proximity to water and tree cover offer high roost potential to bats

Emergence/re-entry survey

Bat roosts noted

One soprano pipistrelle was recorded returning to the house roof at 04.34 am prior to sunrise (05.11 am). 3 soprano pipistrelles were seen to pass over the roof at emergence time, of which one was seen to emerge from the small dormer over the front door. It is likely that there were 3 soprano pipistrelles present on July 1st 2025 and only 1 soprano pipistrelle within the house on July 2nd 2025. The presence of even one bat identifies a structure as a bat roost and the structure is afforded legal protection as such under the Wildlife Act and all Irish implementations of the Habitats Directive.

While other species were noted to fly over and around the house, this was the only resident species.



Bat activity survey

Bat species found feeding and commuting on the site

Common pipistrelle	<i>Pipistrellus pipistrellus</i>
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>
Leisler's bat	<i>Nyctalus leisleri</i>
Daubenton's bat	<i>Myotis daubentonii</i>
Myotis species	<i>Myotis nattereri</i> and <i>mystacinus</i>
probably Natterer's bat and potentially whiskered bat	

There is high bat activity under mature trees directly upriver of the house and all along the river especially along the upriver section. The river is a highly important site for bats of the area, in particular soprano pipistrelles and Daubenton's bats.

Surveyor 1 Bat Data

Species	Bat passes per hour				
	10	11	03	04	Grand Total
Daubenton's bat	1		1		2
MYOTIS		1		1	2
Leisler's bat	1				1
Pipistrelle species			4		4
Common Pipistrelle			1		1
Common Pipistrelle Soprano Pipistrelle		1			1
Soprano Pipistrelle	44	197	122	27	390
Grand Total	46	199	128	28	401



Surveyor 2 Bat Data

Species	Bat passes per hour				
	11	12	04	05	Grand Total
Daubenton's bat	4	2	4		10
Whiskered bat		1	1		2
Natterer's bat			1		1
MYOTIS	3				3
Leisler's bat	2		1	1	4
Pipistrelle species	5		2		7
Common Pipistrelle	5	3	1	1	10
Soprano Pipistrelle	34	103	67	43	247
Soprano Pipistrelle Leisler's bat		1			1
Grand Total	53	110	77	45	285

Song Meter Mini Location





Roost entry point for soprano pipistrelle



Song Meter Mini Data

Species	Bat passes per hour							
	10	11	12	01	02	03	04	Grand Total
MYOTIS		1					1	2
Leisler's bat	2				1			3
Pipistrelle species	1							1
Common Pipistrelle		3	1	1	3	1		9
Soprano Pipistrelle	12	158	176	126	136	97	6	711
Social Calls (soprano)				1				1
Grand Total	15	162	177	128	140	98	7	727

Potential impacts

Predicted Impacts Before Mitigation

(1) Loss of roost and risk of injury to bats.

Bats are slow to arouse from daily torpor and especially from hibernation and roof / attic renovations may place bats at risk of injury or death

While this will have no detectable impact on the bat population, it would be an infringement of the Wildlife Act and would lead to the likely death of a small number of bats. This would be a negligible negative impact to bat populations but direct loss of bats within the house.

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

There will be a slight negative long-term impact if increased lighting associated with the house renovation and extension is introduced.



Mitigation and recommendations

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

Mitigation by remedy

- (1) A derogation shall be acquired from NPWS prior to any work that would affect the roof area of the building.
- (2) A bat specialist shall attend for all work that will involve ceiling or roof alterations or attic work close to the roost site identified. Any bats shall be taken into protective care to allow the work to progress and shall be released once it is safe.
- (3) 1 x 1FF Schwegler bat box shall be incorporated into the building. The position shall be confirmed as suitable by the consulting bat specialist. This box can be purchased from www.nhbs.com and must be placed in a dark area.
- (4) 3 x 2F Schwegler bat boxes shall be attached to mature trees where lighting will not fall upon them. Boxes must be 3 metres or higher above ground and away from high scrub or clutter.
- (5) No lighting shall be directed towards the River Barrow. No lighting shall spill on to the area within which the bat boxes have been provided.

Lighting design will be in accordance with:

- Bats and Lighting – Guidance Notes for Planners, Engineers, Architects and Developers (Bat Conservation Ireland, 2010);
- Bats and Lighting in the UK – Bats and the Built Environment Series (Institute of Lighting Professionals, September 2018);
- Guidance Notes for the Reduction of Obtrusive Light GN01 (Institute of Lighting Professionals, 2011).

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



Lighting design will be in accordance with:

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

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

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

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

Mitigation Options and Recommendations (Eurobats)

	Measure	Recommendations
Avoidance	<i>Conserve dark areas</i>	High priority areas that should remain dark: • protected areas, including roosting and underground hibernation sites • feeding areas (natural areas, vegetation patches) • commuting routes (forest edges, hedgerows, rivers, tree lines)
Only if lighting is necessary, and after an assessment of bat occupancy and patterns of activity within the landscape framework of functional habitats:		
Mitigation	<i>Part-night lighting</i>	Turn off public outdoor lighting within 2 hours after sunset (civil twilight): • Especially during bat reproduction and migration periods • Particular attention within home ranges of maternity colonies
	<i>Dimming</i>	• Adapt dimming strategy to human activities • Keep illuminance levels as low as possible according to EU standards (not going over minimum illuminance required)
	<i>Avoid light trespass</i>	Avoid light trespass over 0.1 lx on surrounding surfaces: • Use fully shielded luminaires • No illumination at or above horizontal • Control street light height, especially along pedestrian pathways and tree lines • Use fewer light sources at points low to the ground • Consider the interaction between light from luminaires and reflecting structures, such as roads and walls
General lighting	<i>Adapt lamp spectra</i>	Avoid lamps emitting wavelengths below 540 nm (blue and UV ranges) and with a correlated colour temperature > 2700 K
Compensation	<i>Restore dark areas</i>	No net loss of darkness: • Restore darkness to the same extent as the proportion of dark areas lost • Enhance alternative dark corridors that connect roosts and feeding areas

The Eurobats guidelines (Voigt et al. 2018) for lighting at night and bat conservation considerations include:

- **Limiting the duration of night-time lighting**
- **Dimming illuminance and limiting light trespass**

- **Limiting the short wavelength (UV and blue) content of the light spectrum** (wavelengths in the UV range can be filtered without any decrease in *illuminance* level)

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

1. Lighting must be cowled if required to prevent light overspill on to surrounding trees

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

2. Lighting operation should be based on levels of activity

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

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

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

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

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

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



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

Impacts after mitigation

1. Loss of Feeding and Commuting Habitat

The introduction of semi-mature native trees and hedgerows will compensate for vegetation loss. These features will maintain habitat connectivity and support insect prey availability.

This will reduce the impact to a slight long-term negative impact on individual bats.

2. Loss of Roosting Opportunities

Although no roosts were found during the survey, the proactive installation of bat boxes will provide alternative roosting options. Monitoring will ensure effectiveness.

This will reduce the impact to an imperceptible long-term negative impact on individual bats.

3. Light Pollution

Implementation of dark sky corridors, cowled lighting, low-level bollards, and light-sensitive controls will limit light spill onto sensitive bat areas. Lighting design will follow best-practice ecological guidance.

This will reduce the impact to a slight negative impact.

Appendices

Bat Biology

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



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

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

Common Pipistrelle and Soprano Pipistrelle

Pipistrellus pipistrellus and *Pipistrellus pygmaeus*

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

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

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

Conservation status



HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A

Source: NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Least Concern

Global: Least Concern

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

Legal status

Protected by the following legal instruments:

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

Nathusius' pipistrelle

Leisler's bat

Nyctalus leisleri

This is the biggest Irish bat and it is often found roosting in buildings although 13% of its roosts recorded in Ireland have been in trees. The Leisler's bat has distinctive level flight at greater heights than the other Irish species, from which it

dives down after dung flies and beetles. It can be seen soon after sunset flying over open spaces such as parks and fields. Because it is one of the first bats to emerge in the evening and is quite large, the Leisler's may be confused with swifts that may also be flying around. They are best told apart by the wing shape, the swift's wings are smoothly curved and scimitar-like. Swifts also shriek, while the Leisler's bat is inaudible without a bat detector. The Leisler's bat is rare in Britain and the rest of Europe but it is relatively common here. For this reason the Irish population of Leisler's bats is considered of International Importance.

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

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A

Source: NPWS 2013.

IUCN Conservation Status

Ireland: Near Threatened

Europe: Least Concern

Global: Least Concern

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

Legal status

Protected by the following legal instruments:

- Habitats Directive (92/43/EEC), Annex IV
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II

- Agreement on the Conservation of Populations of European Bats (EUROBATS)
- Wildlife Act (1976)
- Wildlife (Amendment) Act (2000)
- Wildlife (N.I.) Order of 1985

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A

Source: NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Least Concern

Global: Least Concern

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

Legal status

Protected by the following legal instruments:

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

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A

Source: NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Near Threatened

Global: Least Concern

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

Legal status

Protected by the following legal instruments:

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



Legislation

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

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

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

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



The Bern and Bonn Conventions:

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

1.3.1 The Bern Convention:

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

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

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

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

The EUROBATS Agreement:

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

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



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

The Agreement covers all European bat species.

Contact Details: [REDACTED]
[REDACTED]. Our
website is <https://www.wildlifesurveys.net/>



About Our Team

Wildlife Surveys Ireland Ltd. was founded by Brian Keeley and Donna Mullen. The company undertakes a variety of ecological evaluations and operations and have provided advice to County Councils, government departments, NPWS, OPW, developers, individuals applying for planning applications, local community groups, Tidy Towns organisations and many more. Brian and Donna have been engaged in bat detector surveys since the late 1980s on a voluntary basis, and were first trained by Bat Conservation Trust in 1992. They have been involved in surveying for over 30 years and have surveyed in every county on the island of Ireland.

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

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

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

Brian Keeley BSc (Hons) in Zool

Director

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



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

Director

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

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

Field ecologist

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

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

Legal support

Saoirse has a bachelor's degree in law and business, and has a particular interest in European Law and Environmental Regulation. She helps with the preparation of



environmental reports and contributes to applications for derogation licences. Her understanding of legal frameworks – particularly around EU and constitutional environmental legislation – has been really useful in ensuring our work meets regulatory requirements. She also brings strong research, analytical and communication skills to the team. Saoirse has also trained with Bat Conservation Ireland and frequently leads bat walks. Saoirse is rabies vaccinated.

Appendix I -Definition of Effects – EPA 2017

TABLE 3. DEFINITION OF SIGNIFICANCE OF EFFECTS.

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

3.5.2.3 Criteria Used to Define Duration of Effects

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

TABLE 4. DEFINITION OF DURATION OF EFFECTS.

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