



A bat and bird assessment of Castlelost Church

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For Westmeath County Council

Aug 1 2025



Summary

Six species of bat were recorded within the site.

Common pipistrelles and soprano pipistrelles fed around the church throughout the night. There are no bats currently within the chamber where a roost was found, however a swallow is sitting on eggs within the building. This may be preventing the bats from roosting close by. A myotis, probably a natterer's bat, and a Daubenton's bat were recorded passing near the roost chamber during the night. A Leisler's bat also flew over the site during the night. There is one signal of a brown long eared bat flying near the southern wall of the church.

Bat species found roosting in 2023/2024.

Daubenton's bat - *Myotis daubentonii*

Brown long eared bat – *Plecotus auritus*

Bat species found feeding and commuting 2025.

Common pipistrelle – *Pipistrellus pipistrellus* -

Soprano pipistrelle – *Pipistrellus pygmaeus* –

Leisler's bat – *Nyctalus leisleri*

Daubenton's bat - *Myotis daubentonii*

Natterer's bat *Myotis nattereri*

Brown long eared bat – *Plecotus auritus*

(1)The church is a roost of two species, and a derogation licence must be applied for prior to the commencement of any work on the site. An ecologist must supervise the work. The work must not commence in the underground area or that part of the church until the swallow chicks have fledged. It is possible that a further brood may be attempted in September and this brood must be allowed to fledge and leave the church prior to any work near the nest.

The wildlife ranger must be contacted before commencement of any work.



(2) As one bat access area will be blocked, a bat access brick must be fitted in this area, to allow bat access if the other exits are inadvertently blocked. It can be purchased from –

<https://www.nhbs.com/1fe-schwegler-bat-access-panel?bkfno=183033>

or

<https://www.veldshop.nl/en/ans-3-bat-box.html>

It must be used without the back plate to allow access into the roost area.



As an alternative, a gap can be retained in the existing area.

These have been used successfully in Golashane Nature Reserve in Meath.

In addition, cracks and crevices must be retained where possible. At least 15 crevices must be retained in each wall. Bat tubes have successfully been used by Daubenton's bats in Gubbalaun Abbey, Rossinver, Leitrim. Two Schwegler 2FR bat tubes must be built into the walls for restoration. (<https://www.veldshop.nl/en/bat-tube-1fr-and-2fr.html>)

(3) If bats are discovered at any stage of the building work, building work must cease and myself and the wildlife ranger must be contacted.

(4) No work can take place from May to September as bats may be breeding. Crevices must be checked carefully with a torch and/or fibrescope before repointing.



(5) Providing long swards of grass by fencing livestock out of the church area, would provide bat feeding and additional areas for the ghost moth and shrews which were noted in 2023. It is important that adequate fencing is used to keep livestock out of the church area.

(6) There are low light levels on sites, and this is crucial to the usage of the bats and the buildings. Lighting levels must remain low.

(7) No vegetation can be removed during the nesting season

Preliminary survey details

Results from 2024 bat survey

Summary of report

Although the numbers of individual bats on this site are low, there are six of our nine species present, and two species – Daubenton's and brown long eared bats – are roosting within the underground chamber. The brown long eared bat may be using this area as a night perch, as it was only seen during the night. The Daubenton's bat was present within the stonework at dusk and dawn.

Six species of bat were recorded within the site.

Bat species found roosting

Daubenton's bat - *Myotis daubentonii*

Brown long eared bat – *Plecotus auritus*

Bat species found feeding and commuting

Common pipistrelle – *Pipistrellus pipistrellus* -

Soprano pipistrelle – *Pipistrellus pygmaeus* –

Leisler's bat – *Nyctalus leisleri*

Daubenton's bat - *Myotis daubentonii*

Natterer's bat *Myotis nattereri*

Brown long eared bat – *Plecotus auritus*



Birds

Birds noted in 2025

Swallow (*Hirundo rubecula*) - Nesting

Wren (*Troglodytes troglodytes*)

Robin (*Erithacus rubecula*)

Blackbird (*Turdus merula*)

Woodpigeon (*Columba palumbus*)

Hooded crow (*Corvus cornix*)

Rook (*Corvus frugilegus*)

Yellowhammer (*Emberiza citrinella*)

There was only one bird species clearly nesting within or in the structure in August 2025). This was a swallow within the vaulted chamber to the rear of the church. The nest was poorly constructed but was lined with feathers and a female was anxious to remain within it despite nearby human activity until the surveyor was considered too close. The swallow returned to the nest by 22.00 hours having left it for several minutes.

The only other species within the church structure were a robin and a wren. All other birds were noted at a distance from the church including a singing yellowhammer near the access track to the field. The reduced vegetation has further reduced the bird fauna around the church from the 2024 list (Goldcrest, Dunnock, Song thrush, Chaffinch not observed during this assessment).

Results from the survey in 2023 of Castlelost church and castle

Bat species found roosting at Castle Lost Church

Brown long eared bat – *Plecotus auritus*



Bat species found feeding and commuting on the church site

Common pipistrelle -*Pipistrellus pipistrellus*

Soprano pipistrelle –*Pipistrellus pygmaeus*

Leisler's bat – *Nyctalus leisleri*

Brown long eared bat – *Plecotus auritus*

Bat species found roosting at Castle Lost Castle

Soprano pipistrelle –*Pipistrellus pygmaeus* – roosting in 2 places

Natterer's bat – *Myotis nattereri*

Brown long eared bat – *Plecotus auritus*

Bat species found feeding and commuting on the site of the castle

Common pipistrelle -*Pipistrellus pipistrellus*

Soprano pipistrelle –*Pipistrellus pygmaeus*

Leisler's bat – *Nyctalus leisleri*

Brown long eared bat – *Plecotus auritus*

Natterer's bat – *Myotis nattereri*

Report on the implementation of derogation licence recommendations 2024 and 2025

Recommendation

(1)The church is a roost of two species, and a derogation licence must be applied for prior to the commencement of any work on the site. Although the work on the exterior wall is away from the roost, the presence of scaffolding and people will impact the roost area .An ecologist must supervise the work.

The wildlife ranger must be contacted before commencement of any work.



Measures Implemented

Two derogation licences were issued to allow work to proceed.

DER-BAT-2024-142 valid from Sept 12 to December 31st, 2024

DER-Bat-2025-01 valid from January 1st, 2024 – April 30th, 2025

Recommendation

(1) Damian Murtagh NPWS was contacted prior to commencement of the work.

The work was supervised by ecologist Donna Mullen, with site visits and weekly updates via WhatsApp.

Recommendation

(2) With the permission of the landowner, 2 2F Schwegler bat boxes could be placed near this site. These must be placed on trees, buildings, or poles, at least 3 meters high, with a clear drop below them – as bats must drop to fly. They must be placed in a dark area. They can be purchased here - <https://www.veldshop.nl/en/schwegler-bat-box-2f.html?id=46351610>

In addition, cracks and crevices must be retained where possible. At least 30 crevices must be retained in each wall. Two Schwegler 2FR bat tubes must be built into the wall for restoration. (<https://www.veldshop.nl/en/bat-tube-1fr-and-2fr.html>)

Measures Implemented

A tree on the site was identified for the bat boxes, which have been purchased and installed.



It was not possible to purchase the Schwegler bat tubes, so a similar type – Vivara pro bat tubes, and Woodstone bat boxes have been ordered. I have successfully used these boxes in Meath and Leitrim.



Installed bat tubes.

Each wall has at least 30 retained crevices of different depths and sizes.



Recommendation

(3) If bats are discovered at any stage of the building work, building work must cease and myself and the wildlife ranger must be contacted.



Measures Implemented

All stonework was undertaken carefully by hand.



On 26th September Donna Mullen discovered a brown long eared bat in the underground section of the church. This area was previously a roost and is not scheduled for stonework. The area was made safe from disturbance by people and animals. It was not present on a subsequent visit in October .Pallets blocking one of the roost exits on 25 October, were removed, and goats at the area were securely fenced.



Bat in crevices and retention of bat access

(4) No work can take place from May to September as bats may be breeding. Work on the nave must take place after Sept 1st as there is a nest present.

Measures Implemented

No work has taken place in the nesting season.



Recommendation

(5) To compensate for the loss of vegetation with the removal of ivy, some new hedgerows should be installed and allowed to grow tall, with the landowner's permission. These should be native and include native trees. A company such as Ramor landscaping can provide the hedge planting service -

<https://www.ramorlandscaping.ie/>.

In addition, providing long swards of grass by fencing livestock out, would provide additional areas for the ghost moth and shrews which were noted in 2023.

Measures Implemented

Discussions with the landowner on habitat enhancement are ongoing.

Recommendation

(6) There are low light levels on sites, and this is crucial to the usage of the bats in the buildings. Lighting levels must remain low.

Measures Implemented

Lighting levels on site are low, with no external lighting.

Recommendation

(7) It is possible that the castle and church is used by bats as a hibernation or swarming site. A remote song meter mini could be placed in the underground section of the castle and church at intervals over the autumn and winter to see if there is bat activity.

Measures Implemented

Brown long eared bats have been found at intervals in the autumn. No Daubenton's bats were seen.

Recommendation

(8) No vegetation can be removed during the nesting season.

Measures Implemented

No vegetation was removed in the nesting season.



Conclusion

Gaps have been retained in the new stonework, and bat boxes have been built into the new stonework. There was no disturbance to the existing bat roost, and a brown long eared bat was seen continuing to use the roost during the building work.

Desktop survey of the existing environment

Thanks to Bat Conservation Ireland for their data. All data from this report will be placed on their database.

Bat data from within 1km of the site:

BCIreland data: search results 5 Aug 2025					
Search parameters: Roosts Transects Ad-hoc observation sites with observations of all species within 1000m of N4493741809					
Roosts					
Name	Grid reference	Grid ref easting	Grid ref northing	Address	Species observed
Castle Lost Castle	N4507941369	245079	241369	Castle Lost, Westmeath	Myotis nattereri, Pipistrellus pipistrellus (45kHz), Plecotus auritus



Castle Lost Church	N44937417 84	24493 7	24178 4	Near Rocherfordbrid ge westmeath	Plecotus auritus, Myotis daubentonii
Transects					
Name	Grid reference start	Grid ref eastin g start	Grid ref northin g start	Species observed	
Ad-hoc observations					
Survey	Grid reference	Grid ref eastin g	Grid ref northin g	Date	Species observed
BATLA S 2020	N44210423 40	24421 0	24234 0	#####	Pipistrellus pygmaeus
BATLA S 2020	N44210423 40	24421 0	24234 0	6/9/2016	

See Appendix III for bat data from within 10km of the site.

Habitat classification and descriptions (Fossitt 2000)

WD5 Scattered trees and parkland.



This category can be used in situations where scattered trees, standing alone or in small clusters, cover less than 30% of the total area under consideration but are a prominent structural or visual feature of the habitat. This usually occurs in areas of cultivated grassland, particularly amenity areas. In the case of parkland or parks which originate from former planting and landscaping, the proportion of non-native trees is typically high. This category can also be used for scattered fruit trees in orchards but commercial orchards with heavily pruned trees should be considered under horticultural land - BC2.

This habitat is present onsite

BL3 Buildings and artificial surfaces

This broad category incorporates areas of built land that do not fit elsewhere in the classification. It includes all buildings (domestic, agricultural, industrial and community) other than derelict stone buildings and ruins (see stone walls and other stonework - BL1). It also includes areas of land that are covered with artificial surfaces of tarmac, cement, paving stones, bricks, blocks or astroturf (e.g. roads, car parks, pavements, runways, yards, and some tracks, paths, driveways and sports grounds). Unpaved areas are excluded (see spoil and bare ground - ED2). Any other built structures that are not made of natural stone, including walls made of bricks, cement blocks and mass concrete, should be considered here. Note that greenhouses and polythene tunnels are excluded (see horticultural land - BC2), as are refuse dumps (see refuse and other waste - ED5). Plant cover should not exceed 50%.

This habitat is present onsite

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



Yellow circle = Castlelost church

The site connects to farmland on all sides, with the castle to the south and a conifer plantation to the east.

Date: Aug 1, 2025

Sunrise time: 5.45

Sunset time: 21.25

Lux Levels 0 lux

Temperature and weather conditions 14C to 10C .Slight rain during the night



Proposed works

Scope of Works The following works to be carried out under a CMF grant in 2025 consist of: 1. Completion of masonry repairs of the south wall of the nave incl. repair of internal arch of the window head, repointing of elevations and flaunching of wall tops. 2. Masonry repairs of the south wall of the tower 3. Masonry repairs of the west wall of the tower 4. Masonry repairs of the north wall of the tower 5. Masonry repairs of the cross wall of the tower

Proposed Works to the south wall of the nave – Repairs to the south wall of the nave were partially completed under the CMF grant 2024 including the removal of vegetation, repointing of the internal and external elevations at low level and consolidation of loose masonry to the base of the lancet windows. – The relieving arch of the window to the eastern end was temporarily propped as part of the first phase of the works. Masonry of the arch has slipped from its original position. The relieving arch requires urgent repairs to prevent collapse. – The window to be temporarily propped to allow repairs works to be carried out. The two courses of masonry above the section of the relieving arch to be recorded and carefully lifted and set aside on the scaffold. The masonry of the arch to be carefully moved into its original position in consultation with the project engineer. Masonry above the arch to be reinstated. Further fallen masonry from the site to be lifted and used in the consolidation of the masonry along the wall top. – Repairs of the exposed core masonry to the western end of the wall to be carried out. Fallen rubble stone masonry lifted from the vicinity of the wall to be used in the consolidation of the wall. – Localised pointing repairs to the upper section of both elevations to be carried out using hot mixed lime or NHL 2. Sample of pointing detail to be agreed onsite. Pinning stones to be used in repointing match surviving fabric. – Wall tops to be flaunched with lime mortar to allow rainwater run-off to approved sample.

Proposed Works to North Wall of the tower – Minor excavations of fallen rubble stone to be carried out to both sides of the wall. – The collapse of masonry has resulted in an opening occurring to the NE corner of the vaulted chamber. Rebuilding of a section of the collapsed north wall to the east of the tower is required to close the opening. The stairs to the upper level were in this area although the configuration is uncertain. – The remains of the north wall of the tower are largely intact although



covered in vegetation across the upper level. Following the careful removal of vegetation, the condition and surviving features of the upper section of the wall to be assessed by the project team from the scaffolding. – Localised pointing repairs to the upper section of both elevations to be carried out using hot mixed lime or NHL 2 to approved detail. Pinning stones to be used in repointing match surviving fabric. – The architectural features of the interior face of the north wall to be consolidated. The surviving niches to be repaired where necessary. Any further features uncovered following the removal of vegetation to be consolidated. – Wall tops to be flaunched with lime mortar to allow rainwater run-off to approved sample.

Proposed Works to South wall of the tower – Minor excavations of fallen rubble stone to be carried out along the extent of the wall on both sides. – The upstanding remains to the east to be consolidated. – The masonry to the east of the collapsed section to be consolidated. – The low level remains to be consolidated. Rebuilding to be confined to the stabilising of the upstanding remains of the south wall to the east. – The remains of the south wall of the tower are largely intact although covered in vegetation across the upper level. Following the careful removal of vegetation, the condition and surviving features of the upper section of the wall to be assessed by the project team from the scaffolding. – Localised pointing repairs to the upper section of both elevations to be carried out using hot mixed lime or NHL 2 to approved detail. Pinning stones to be used in repointing match surviving fabric. – The architectural features of the interior face of the south wall to be consolidated. The surviving niches to be repaired where necessary. Any further features uncovered following the removal of vegetation to be consolidated. – Surviving historic plaster to be retained. – Wall tops to be flaunched with lime mortar to allow rainwater run-off to approved sample.

Proposed Works to West Wall of the tower – Minor excavation of fallen rubble stone to be carried out along the extent of the west gable. – The largely intact masonry remains of the west wall to be consolidated. – If uncovered during excavation works, quoin stones of the NW and SW corners to be reinstated where strong evidence of their historic position is found. – Outer facing masonry which has fallen away from the west wall to be reinstated. – The surviving window centrally positioned at the upper level to be consolidated. – Localised pointing repairs to the upper section of both elevations to be carried out using hot mixed lime or NHL 2 to approved detail. Pinning stones to be used in repointing match surviving fabric. – The internal west wall of the vaulted chamber is in good condition. Lime mortar is missing in areas. No architectural features



were recorded. – At the upper level internally, masonry above the window opening is in poor condition and requires repair. Further inspection to be carried out following erection of scaffolding and careful removal of vegetation. – The niche and remains of the fireplace to the internal west wall to be consolidated and repaired where necessary. – Wall tops to be flanchued with lime mortar to allow rainwater run-off to approved sample.

Proposed Works to the Cross Wall of the tower – The upstanding east wall of the tower is in remarkably good condition retaining its arched opening to the vaulted chamber and opening at the upper level which historically looked over the nave. However, it is extensively covered in ivy and dense roots. – The upstanding remains to be consolidated including the opening at the upper level. – Localised pointing repairs to the upper section of both elevations to be carried out using hot mixed lime or NHL 2 to approved detail. Pinning stones to be used in repointing match surviving fabric. – The architectural features of the west face of the cross wall to be consolidated. The surviving door opening at ground level and window opening at the upper level to be repaired where necessary. Any further features uncovered following the removal of vegetation to be consolidated. – Wall tops to be flanchued with lime mortar to allow rainwater run-off to approved sample.

Proposed Works to the Interior of the Church – Subject to National Monuments Services approval, build-up of debris, tree roots in the tower and nave interior to be removed. – Minor excavations of fallen rubble stone to be carried out within the interior of the church and vaulted chamber under the close consultation with the Project Archaeologist. – The decorative altar tomb recorded in 1826 to be uncovered during the minor excavation works. Repairs where required to be carried out under the supervision of the Conservation Architect. – The upright and fallen grave slabs to be repaired where necessary.

Conservation Principles All works to the building to be carried out in accordance with best conservation practice, as defined by the International Council on Monuments and Sites (ICOMOS) in the Venice Charter of 1964, and in subsequent charters. The following basic principles should be adhered to at all times: – Conservation work should be based on an understanding of the building and its historical development and the primary aim should be to retain and recover the significance of the building. – Any alterations should be carried out in accordance with the principle of 'minimal



intervention'. – Repairs to original fabric should always be favoured over replacement. Where replacement of an original element is unavoidable, this should be historically accurate in form and materials. – Where lost elements must be reconstructed, these should aim for historic authenticity and avoid conjecture in as far as possible. – Modern interventions should be reversible and if appropriate visually identifiable. New work should be recorded. – Works should be carried out by suitably skilled craftspeople with proven expertise in their trade working with historic buildings.

Complexity of lands and ability to cover ground during surveys

All areas were accessible

Ownership of the land

Westmeath County Council. The adjacent land is owned by

Mary Casserly-Gavin
Knocknacrieve
Slanmore
Mullingar
Co Westmeath

Survey constraints

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

(2) Identification of bats: It can be difficult to differentiate *Myotis* species. For this reason, sound files are included within the report. Brown long eared bats are very quiet,



and their presence can be overlooked in bat surveys as they may not register on bat detectors.

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



Methodology

Surveyors

Donna Mullen and Brian 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
- Two Songmeter Mini Bat detector placed overnight at the southern wall, and the underground roost area.
- Mobile phones for communication during the survey (one per surveyor)
- One lux meter per surveyor

Survey procedure

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

Over the next 90 minutes, surveyors cover the walkable area of the site along their planned routes, with adjustments being made to account for especially high or low bat



activity in an area – for example, a surveyor may examine a tree associated with a high level of bat activity, as it may be a bat roost. After the 90 minutes have elapsed, most bats will already have emerged from their roosts in order to feed for the night, making the period shortly after sunset one of the best times to identify roosts and feeding habitats.

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

Surveys are conducted with reference to the following documents –

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

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

A bird assessment was based on observations of the church prior to sunset and again prior to and up to sunrise. This involved examination of the structure with a thermal imager in addition to visual and aural evidence.



Survey:

Assessment of buildings as potential roosts with photos



Castlelost church

Very high bat roost potential. Crevices, cracks and built in bat boxes.

Map of the placement of the static detectors.



Blue circles – Placement of static detectors. One was placed in the underground area, and the other on a wall.

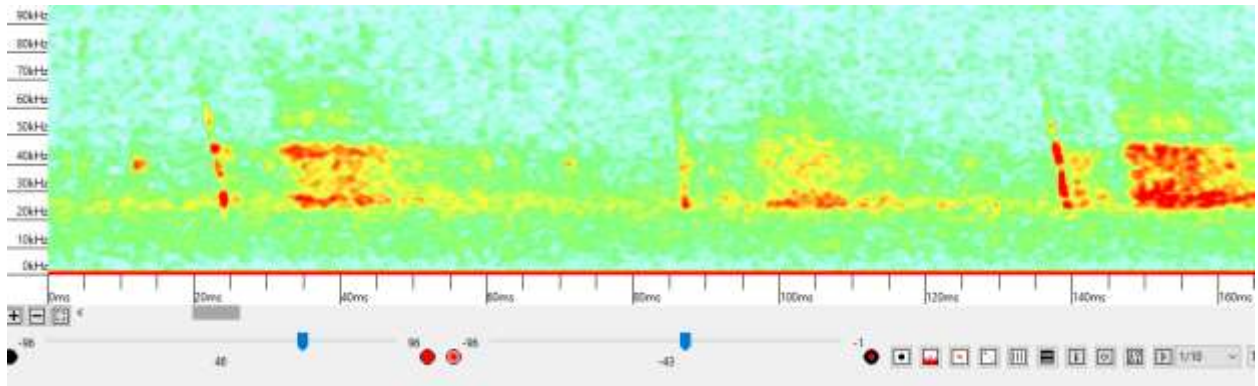
Results of survey

The survey commenced at 21.00. One static detector was placed high on the southern wall and a second was placed in the underground chamber. A swallow was sitting on eggs in the underground chamber.

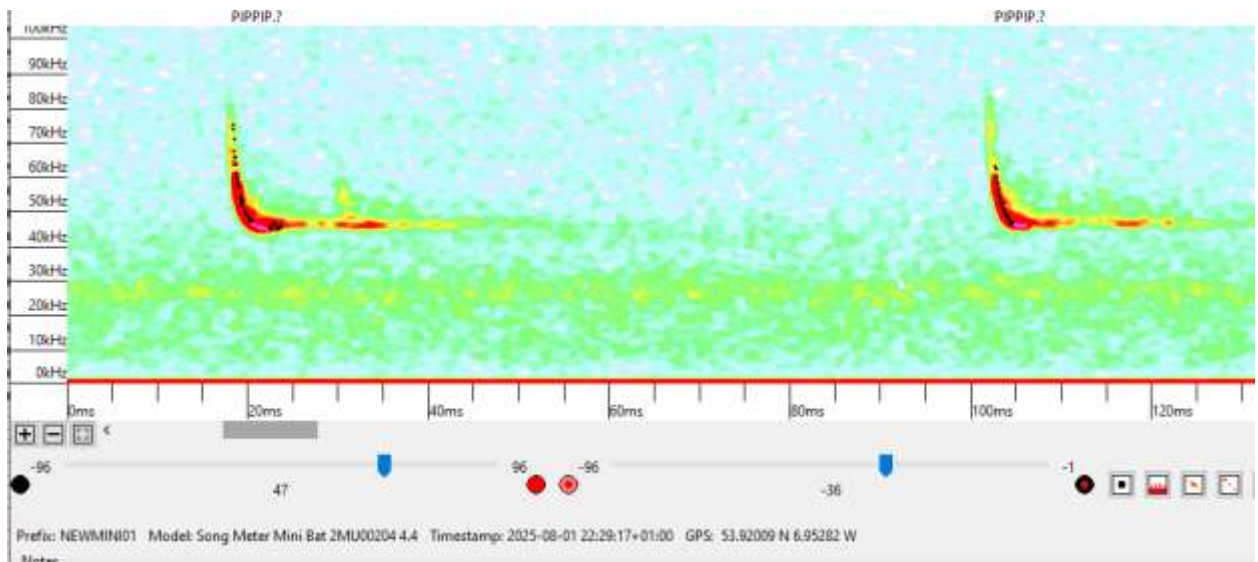
At 20.59 a soprano pipistrelle flew from the east, past the church. It fed around the church until 22.05. At 22.13 a soprano pipistrelle flew from the eastern forestry area, onto the site, feeding around the vestry and moving east at 22.26. A common pipistrelle fed around the church from 22.33 until 22.39, moving to the south at 22.43, and a second common pipistrelle came onto the site than moved off towards the eastern forest at 22.43.



A faint Daubenton's bat signal was recorded to the west at 23.24.

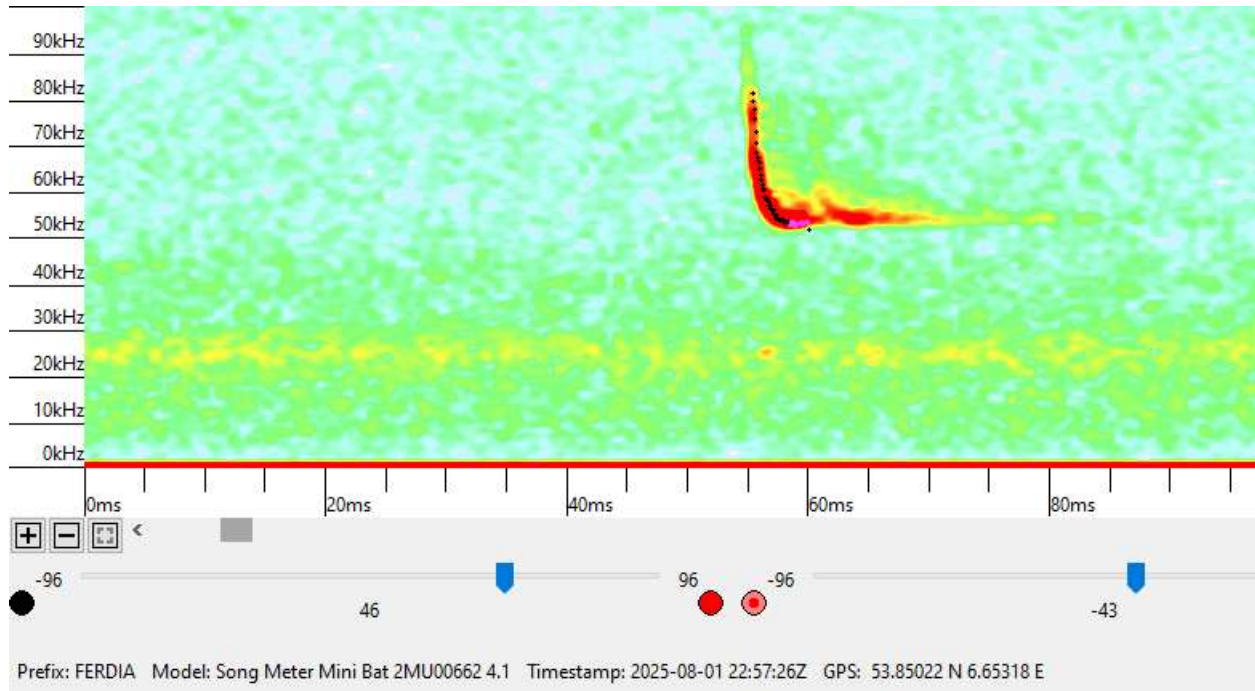


Daubenton's bat 23.24



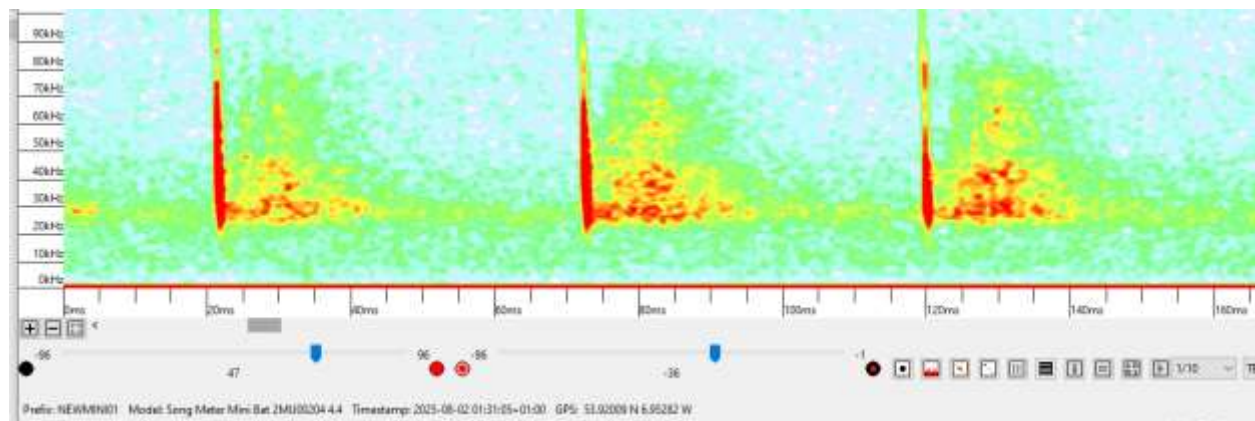
Common pipistrelle 22.29

A common pipistrelle was seen to the north of the church at 22.46, feeding until 22.55, then moving east. A soprano pipistrelle fed at the sycamore to the front (south) of the church at 23.00.



Soprano pipistrelle 22.57

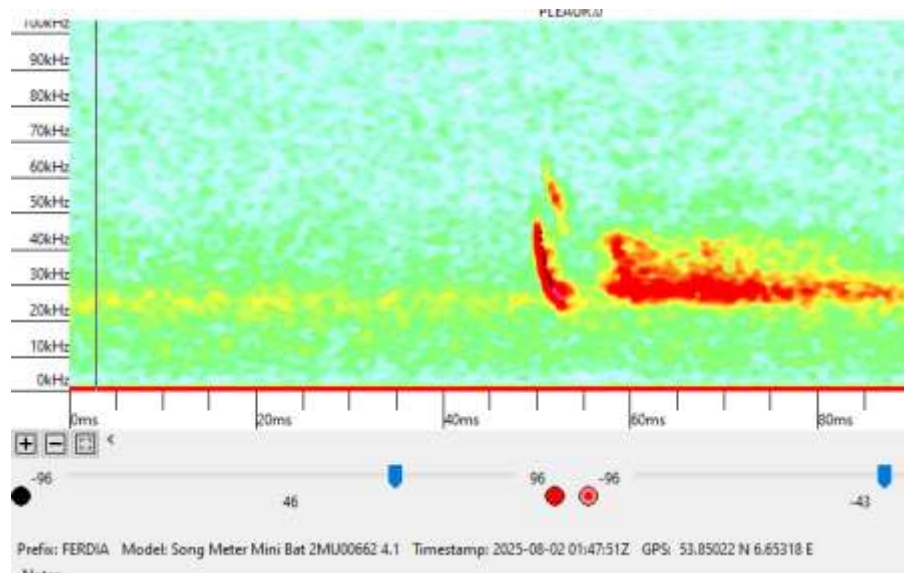
At 1.31, a Natterer's bat was recorded by the static detector underground.



Natterer's bat

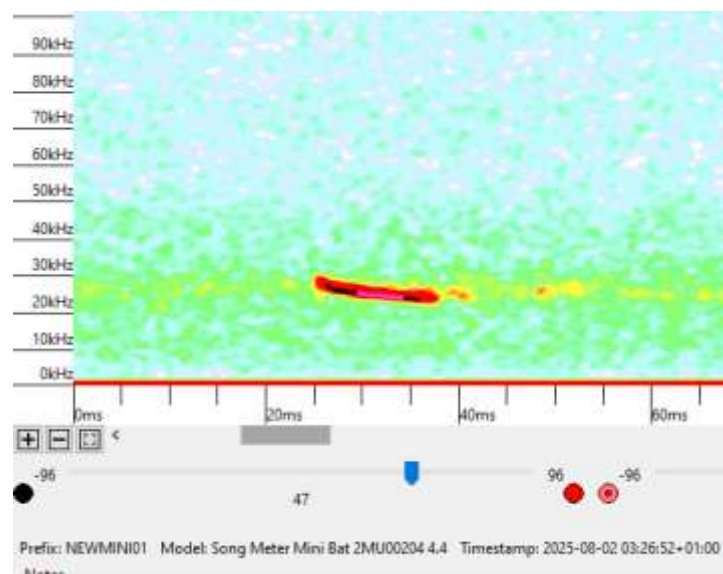


At 1.47 a brown long eared bat flew south of the church



Brown long eared bat

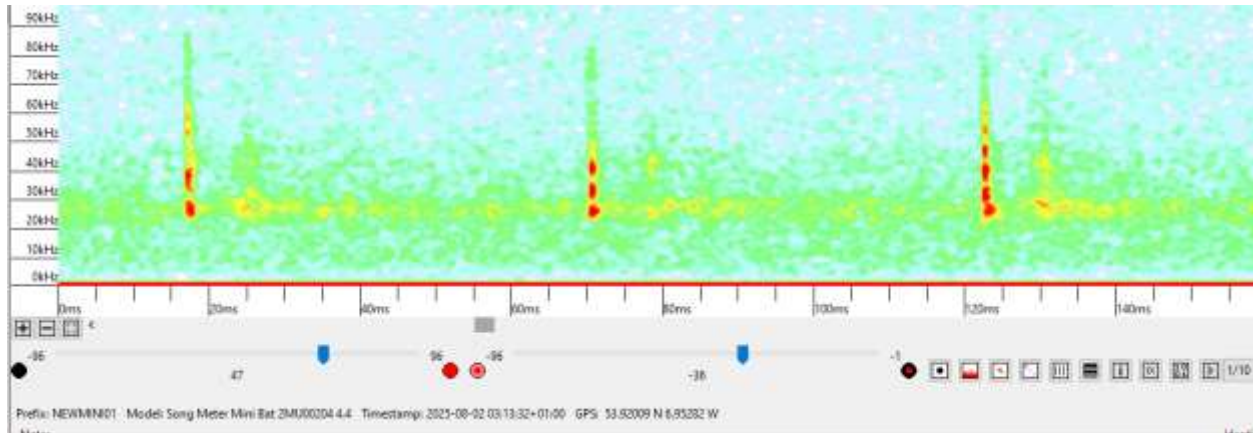
A Leisler's bat was recorded in this area at 3.06.



Leisler's bat

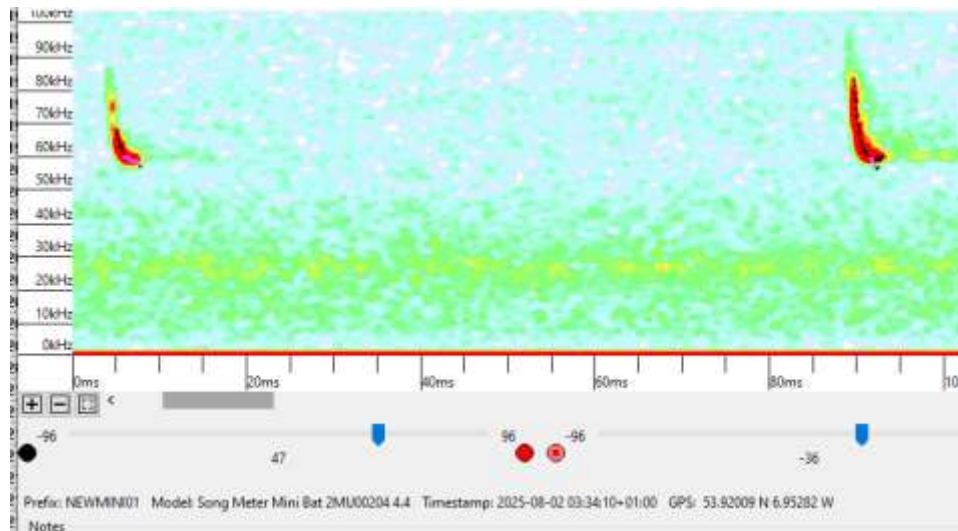


At 3.12 a myotis was recorded on a static detector at the southern wall of the church



Myotis 3.12

A soprano pipistrelle was recorded in this area at 3.34.



Soprano pipistrelle 3.34

At 4.25 a common pipistrelle was seen feeding around the trees in the graveyard, moving over the church until 4.38. At 4.46 a common pipistrelle was seen commuting at



the east of the churchyard, then feeding around the yew and sycamore, before moving offsite at 4.52.

Results

Common pipistrelles and soprano pipistrelles fed around the church throughout the night. There are no bats currently within the chamber where a roost was found, however a swallow is sitting on eggs within the building. This may be preventing the bats from roosting close by. A myotis, probably a natterer's bat, and a Daubenton's bat were recorded passing near the roost chamber during the night. A Leisler's bat also flew over the site during the night. There is one signal of a brown long eared bat flying near the southern wall of the church.

Six species of bat were recorded within the site.

Bat species found roosting in 2023

Daubenton's bat - *Myotis daubentonii*

Brown long eared bat – *Plecotus auritus*

Bat species found feeding and commuting

Common pipistrelle – *Pipistrellus pipistrellus* -

Soprano pipistrelle – *Pipistrellus pygmaeus* –

Leisler's bat – *Nyctalus leisleri*

Daubenton's bat - *Myotis daubentonii*

Natterer's bat *Myotis nattereri*

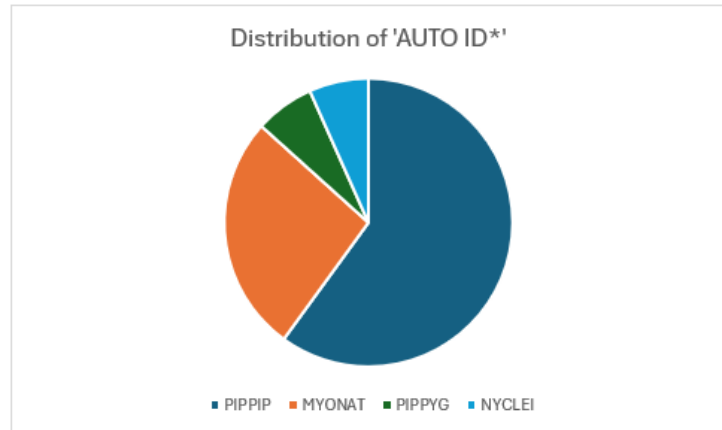
Brown long eared bat – *Plecotus auritus*



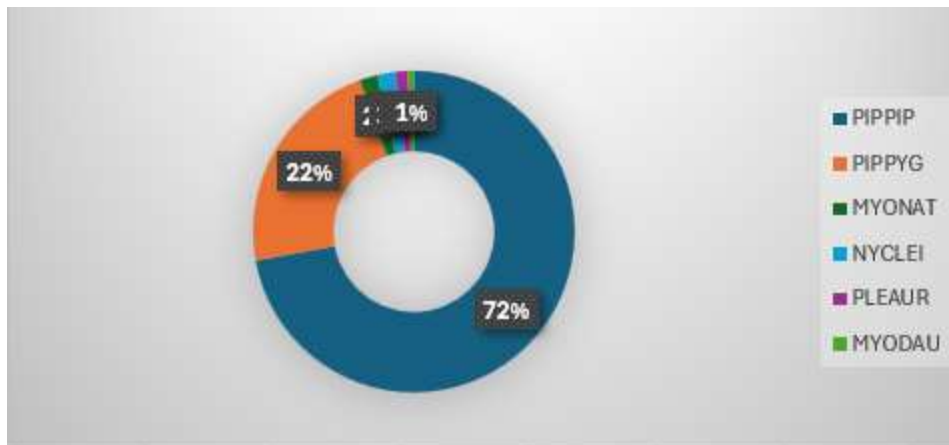
Distribution of calls from static detector placed in the chamber.

Distribution of 'AUTO ID*'

AUTO ID*	Count of AUTO ID*
PIPPIP	9
MYONAT	4
PIPPYG	1
NYCLEI	1
Grand Total	15



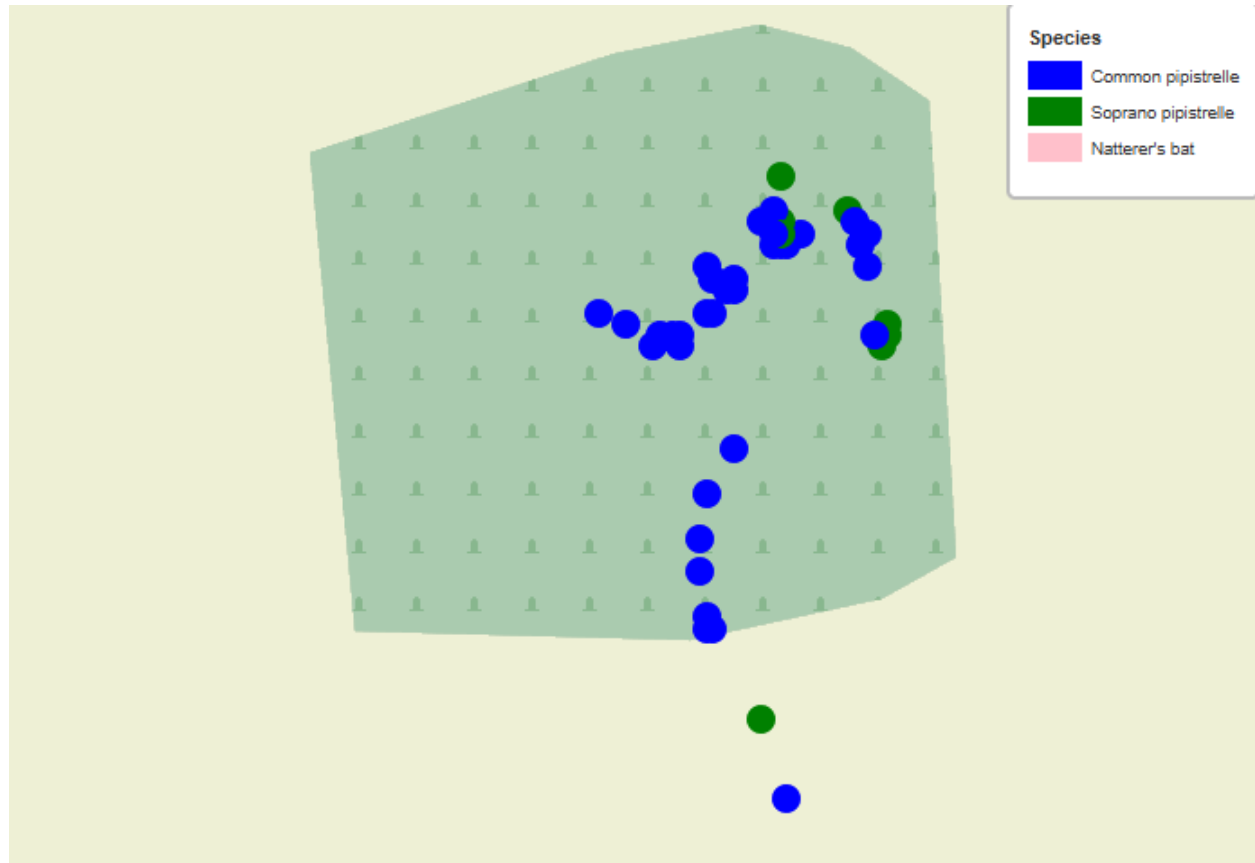
Distribution of bat calls from static detector placed on the southern wall.

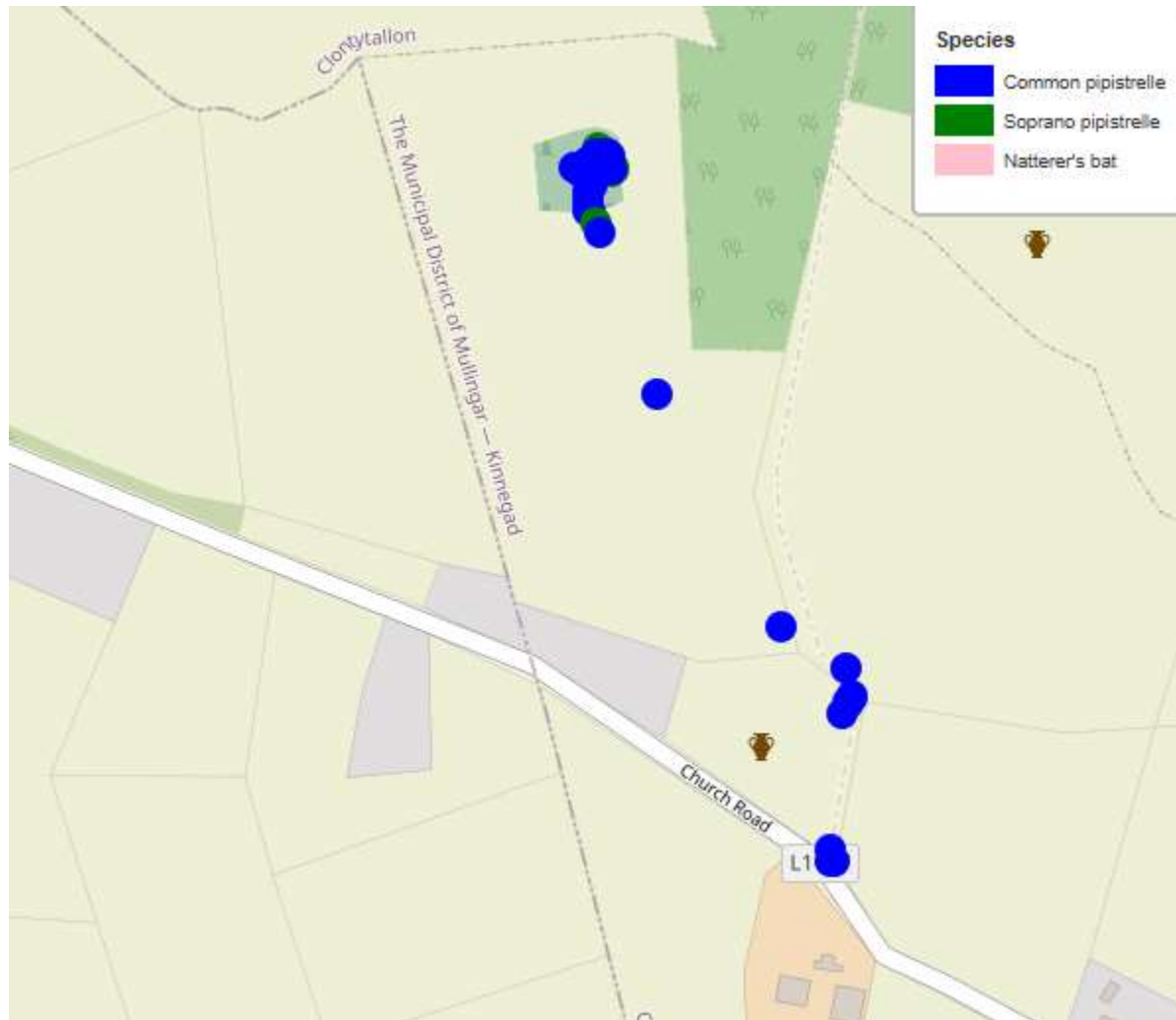


	AUTO ID*	Count of AUTO ID*
2		
3	PIPPIP	119
4	PIPPYG	37
5	MYONAT	3
5	NYCLEI	3
7	PLEAUR	2
3	MYODAU	1
9	Grand Total	165
0		

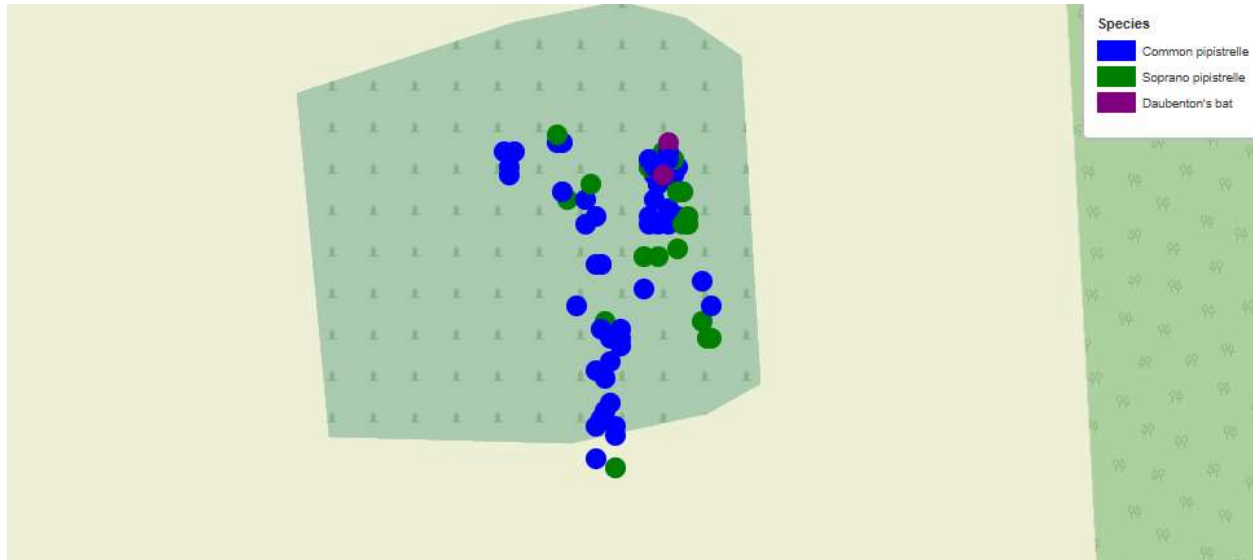


Map from Batlogger handheld by Donna Mullen





Map of Batlogger data handheld by Brian Keeley



Potential impacts

Predicted Impacts Before Mitigation

(1) Loss of feeding and commuting habitat.

Removal of vegetation will have a moderate long-term impact on individuals within these species.

(2) Loss of roosting habitat. Work on the repointing of the walls of the roost without mitigation could cause entombment or roost loss. This would have a permanent long term negative effect on individual bats.

(3) Abandonment of nest by swallows prior to the successful fledging of young. Work within the vaulted chamber in September may lead to abandonment of the nest by the breeding pair if it is undertaken while young cannot fly. All other bird species were either at a distance from the structure or were not nesting within or on the structure in August 2025.

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 avoidance

No work shall take place within the vaulted chamber or adjoining it until the swallow nesting and breeding has ceased. This may continue into September or the final brood may be raised in late August. Any other area may be repaired that is not likely to disturb the nesting birds.

Mitigation by remedy

Details of any mitigation measures planned for the species affected by the derogation at the location, along with evidence that such mitigation has been successful elsewhere

(1) The church is a roost of two species, and a derogation licence must be applied for prior to the commencement of any work on the site. An ecologist must supervise the work. The work must not commence in the underground area or that part of the church until the swallow chicks have fledged (as noted above).

The wildlife ranger must be contacted before commencement of any work.

(2) As one access area will be blocked, a bat access brick must be fitted in this area, to allow bat access if the other exits are inadvertently blocked. It can be purchased from –

<https://www.nhbs.com/1fe-schwegler-bat-access-panel?bkfno=183033>

or

<https://www.veldshop.nl/en/ans-3-bat-box.html>

It must be used without the back plate to allow access into the roost area.



As an alternative, a gap can be retained in the existing area.

These have been used successfully in Golashane Nature Reserve in Meath.

In addition, cracks and crevices must be retained where possible. At least 15 crevices must be retained in each wall. Bat tubes have successfully been used by Daubenton's bats in Gubalaun Abbey, Rossinver, Leitrim. Two Schwegler 2FR bat tubes must be built into the walls for restoration. (<https://www.veldshop.nl/en/bat-tube-1fr-and-2fr.html>)

(3) If bats are discovered at any stage of the building work, building work must cease and myself and the wildlife ranger must be contacted.

(4) No work can take place from May to September as bats may be breeding. Crevices must be checked carefully with a torch and/or fibrescope before repointing.

(5) Providing long swards of grass by fencing livestock out of the church area, would provide bat feeding and additional areas for the ghost moth and shrews which were noted in 2023. It is important that adequate fencing is used to keep livestock out of the church area.

(6) There are low light levels on sites, and this is crucial to the usage of the bats and the buildings. Lighting levels must remain low.

(7) No vegetation can be removed during the nesting season.

Evidence that actions permitted by a derogation licence will not be 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 as is required under Section 54(2) of the European Communities (Birds and Natural Habitats) Regulations. Data from The Status of EU Protected Habitats and Species in Ireland SPECIES ASSESSMENTS Volume 3 2019

Daubenton's bat

5 Range within the biogeographical/marine region concerned.

5.1 Surface area 74,200 km²

5.2 Short-term trend Period 2007–2018

5.3 Short-term trend Direction stable

8.2 Sources of information <i>Optional</i>	
8.3 Additional information <i>Optional</i>	Light pollution has been identified as a particular concern for <i>Myotis</i> bats such as Daubenton's bat (Matthews <i>et al.</i>, 2015; Voigt <i>et al.</i> 2018). F24 has been selected to represent this pressure, although lighting from industrial developments and roadway developments also contribute to the problem. Despite some growing awareness of light pollution this pressure is likely to continue into the future and it is also listed as a threat. Ranking of importance is based on expert opinion on likely impact of the pressure on the species. Removal of riparian vegetation, bridge repairs and drainage works may also provide some cause for concern for this species and these issues merit further study. There is no evidence to date of an impact on Daubenton's bat distribution due to these issues and hence they are not listed in 8.1.

10 Future prospects		
10.1 Future prospects of parameters	a) Range	<u>Good</u> / Poor / Bad / Unknown
	b) Population	<u>Good</u> / Poor / Bad / Unknown
	c) Habitat of the species	<u>Good</u> / Poor / Bad / Unknown

The Daubenton's bat is widespread across all parts of the country and Range is assessed as Favourable as there is no evidence of any decline since the Directive came into force. Recent estimates for this species suggest a population size in the order to 57,000-79,000 animals. Ongoing monitoring indicates that the population is stable or even slightly increasing and there is no evidence of decline in suitable habitat. Although

Daubenton's Bat
Myotis daubentonii (1314)
 Article 17 (2013 - 2018) Assessment

Legend:

- Current Distribution (604 cells)
- Current Range (742 cells)
- Favourable Reference Range (742 cells)

Scale: 0 100 200 300 km

North Arrow: N

Án Bliain Cúlraí,
 Oifigeanna Ágairí Gaeltachta
 Department of Culture,
 Heritage and the Gaeltacht

Prepared by: Daubenton's Bat
 Biodiversity Monitoring Unit, Natural Heritage Centre (Biodiversity Unit)
 National Parks and Wildlife Service, 200-202, The Maltings, Dublin 8, Ireland
 Prepared from the 2018 Species and Site Data as of the
 Government of Ireland (GSI) 2018
 National Parks and Wildlife Service, 200-202, The Maltings, Dublin 8, Ireland
 (GSI) 2018

Scale: 1:100,000
 0 100 200 300 km

North Arrow
 N
 1:100,000
 0 100 200 300 km

516



Brown long eared bat

5 Range within the biogeographical/marine region concerned.

5.1 Surface area 62,200 km²

5.2 Short-term trend Period 2007–2018

5.3 Short-term trend Direction stable

8.3 Additional information -As this bat regularly roosts in old buildings (e.g., churches) it can come into conflict with roost owners. The loss of roosts in mature trees due to felling, light pollution and the absence of data on swarming and winter sites are also concerns. However, there is no evidence that any of these issues are impacting on distribution or population and hence they are not listed as medium or important threats for this species.

10 Future prospects		
10.1 Future prospects of parameters	a) Range	<u>Good</u> / Poor / Bad / Unknown
	b) Population	<u>Good</u> / Poor / Bad / Unknown
	c) Habitat of the species	<u>Good</u> / Poor / Bad / Unknown
10.2 Additional information <i>Optional</i>	The dedicated roost-based monitoring programme provides evidence of a significant increase in the population; there is no evidence of any decline in Range or Habitat. In general the Future prospects of these parameters are considered to be good.	

11 Conclusions

Assessment of conservation status at end of reporting period

11.1 Range	<u>Favourable (FV)</u> / Inadequate (U1) / Bad (U2) / Unknown (XX)
11.2 Population	<u>Favourable (FV)</u> / Inadequate (U1) / Bad (U2) / Unknown (XX)
11.3 Habitat for the species	<u>Favourable (FV)</u> / Inadequate (U1) / Bad (U2) / Unknown (XX)
11.4 Future prospects	<u>Favourable (FV)</u> / Inadequate (U1) / Bad (U2) / Unknown (XX)

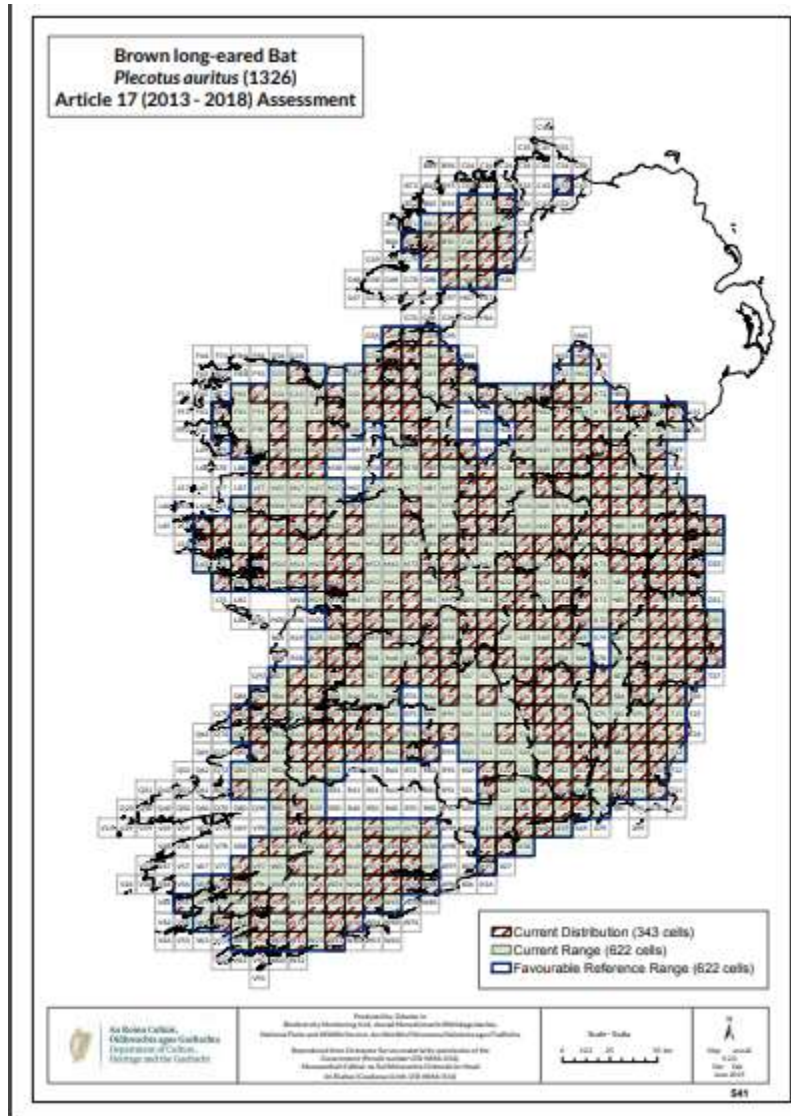
Article 17 report format 2013-2018

538

1326 Brown Long-eared Bat (*Plecotus auritus*)

11.5 Overall assessment of Conservation Status	<u>Favourable (FV)</u> / Inadequate (U1) / Bad (U2) / Unknown (XX)
11.6 Overall trend in Conservation Status	Indicate the trend (qualifier) for FV, U1 and U2: <u>improving</u> / deteriorating / stable / unknown

11.8 Additional information - Recent estimates put the Irish population of brown long-eared bats at 60,000-100,000 animals. Monitoring data suggests a recent significant increase in numbers and both Range and Habitat are considered to be stable and Favourable. There is no indication of any major pressures currently impacting the population and Future prospects are considered good. Overall, the species is assessed as Favourable and the overall trend is demonstrating an on-going increase. There were no qualifiers for Favourable assessments in 2013.



Impacts after mitigation

(1) Loss of feeding and commuting habitat. The addition of areas of long grass will reduce the impact to a slight long-term negative impact.

(2) Loss of roosting habitat. The addition of bat boxes will reduce the impact to a slight long term negative impact on individual bats.



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

Leisler's bat

Nyctalus leisleri

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

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

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A

Source: NPWS 2013.



IUCN Conservation Status

Ireland: Near Threatened

Europe: Least Concern

Global: Least Concern

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

Legal status

Protected by the following legal instruments:

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

Daubenton's bat

Myotis daubentonii

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

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

The Daubenton's bat annual trend is monitored using a volunteer-based programme – the [All Ireland Daubenton's Bat Waterways Survey](#). This scheme



has been ongoing since 2006 and the Daubenton's bat trend has been reasonably stable since this time.

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A

Source: NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Least Concern

Global: Least Concern

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

Legal status

Protected by the following legal instruments:

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

Natterer's bat

Myotis nattereri



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

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A

Source: NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Least Concern

Global: Least Concern

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

Legal status

Protected by the following legal instruments:

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



Brown long eared bat

Plecotus auritus

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

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

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A

Source: NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Least Concern

Global: Least Concern



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

Legal status

Protected by the following legal instruments:

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

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: Our email address is briantkeeleley@gmail.com or batsurveydm@gmail.com. Our phone numbers are 087 7454233 or 087 6753201. 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 firsthand knowledge of working mitigation.

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

Brian Keeley BSc (Hons) zool

Director

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



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

Director

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

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

Field ecologist

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

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

Legal support



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

Hugh Keeley

Student surveyor

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



Appendix I -Definition of Effects – EPA 2017

TABLE 3. DEFINITION OF SIGNIFICANCE OF EFFECTS.

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

3.5.2.3 Criteria Used to Define Duration of Effects

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

TABLE 4. DEFINITION OF DURATION OF EFFECTS.

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



Appendix II – Bat Data

Data from Song meter mini placed underground

IN FILE	OUT FILE FS	AUTO ID	PULSES	MATCHING	MATCH RATIO	MAMMAL ID	DATE	TIME
1 NEWARR01_20250802_011002.wav	NEWARR01_20250802_011002_000.wav	MYCHNAT	8	2	0.667000		2025-08-02	09:10:02
2 NEWARR01_20250802_011005.wav	NEWARR01_20250802_011005_000.wav	MYCHNAT	8	7	0.875000		2025-08-02	09:10:05
3 NEWARR01_20250802_005912.wav	NEWARR01_20250802_005912_000.wav	MYCHNAT	9	4	0.600000		2025-08-02	09:09:12
4 NEWARR01_20250802_011007.wav	NEWARR01_20250802_011007_000.wav	MYCHNAT	9	3	1.000000		2025-08-02	09:10:07
5 NEWARR01_20250802_002048.wav	NEWARR01_20250802_002048_000.wav	MYCHNAT	2	2	1.000000		2025-08-02	09:20:48
6 NEWARR01_20250802_002052.wav	NEWARR01_20250802_002052_000.wav	MYCHNAT	2	2	1.000000		2025-08-02	09:20:52
7 NEWARR01_20250801_213918.wav	NEWARR01_20250801_213918_000.wav	MyID	2	0	0.000000	Thomps	2025-08-01	21:39:18
8 NEWARR01_20250802_004019.wav	NEWARR01_20250802_004019_000.wav	MyID	2	0	0.000000	Thomps	2025-08-02	00:40:19
9 NEWARR01_20250802_005010.wav	NEWARR01_20250802_005010_000.wav	MyID	4	0	0.000000	Thomps	2025-08-02	00:50:10
10 NEWARR01_20250802_005013.wav	NEWARR01_20250802_005013_000.wav	MyID	2	0	0.000000	Thomps	2025-08-02	00:50:13
11 NEWARR01_20250802_001120.wav	NEWARR01_20250802_001120_000.wav	MyID	2	0	0.000000	MyCHNAT	2025-08-02	00:11:20
12 NEWARR01_20250802_002027.wav	NEWARR01_20250802_002027_000.wav	MyID	2	0	0.000000	Thomps	2025-08-02	00:20:27
13 NEWARR01_20250802_002039.wav	NEWARR01_20250802_002039_000.wav	MyID	2	0	0.000000	Thomps	2025-08-02	00:20:39
210 NEWARR01_20250802_004417.wav	NEWARR01_20250802_004417_000.wav	None					2025-08-02	00:44:17
211 NEWARR01_20250802_004503.wav	NEWARR01_20250802_004503_000.wav	None					2025-08-02	00:45:03
212 NEWARR01_20250802_004524.wav	NEWARR01_20250802_004524_000.wav	None					2025-08-02	00:45:24
213 NEWARR01_20250802_004544.wav	NEWARR01_20250802_004544_000.wav	None					2025-08-02	00:45:44
214 NEWARR01_20250802_005013.wav	NEWARR01_20250802_005013_000.wav	PPPP	9	9	1.000000	PPPP	2025-08-02	00:50:13
215 NEWARR01_20250802_005017.wav	NEWARR01_20250802_005017_000.wav	PPPP	10	9	0.900000	PPPP	2025-08-02	00:50:17
216 NEWARR01_20250801_222917.wav	NEWARR01_20250801_222917_000.wav	PPPP	9	8	1.000000		2025-08-01	22:29:17
217 NEWARR01_20250802_001238.wav	NEWARR01_20250802_001238_000.wav	PPPP	9	8	1.000000		2025-08-02	00:12:38
218 NEWARR01_20250802_042816.wav	NEWARR01_20250802_042816_000.wav	PPPP	1	1	1.000000		2025-08-02	04:28:16
219 NEWARR01_20250802_042817.wav	NEWARR01_20250802_042817_000.wav	PPPP	2	2	1.000000		2025-08-02	04:28:17
220 NEWARR01_20250801_230640.wav	NEWARR01_20250801_230640_000.wav	PPPP	4	3	0.750000		2025-08-01	23:06:40
221 NEWARR01_20250802_001246.wav	NEWARR01_20250802_001246_000.wav	PPPP	2	2	1.000000		2025-08-02	00:12:46
222 NEWARR01_20250802_002544.wav	NEWARR01_20250802_002544_000.wav	PPPP	2	2	1.000000		2025-08-02	00:25:44
223 NEWARR01_20250802_002545.wav	NEWARR01_20250802_002545_000.wav	PPPP	2	2	1.000000		2025-08-02	00:25:45

Data from song meter mini placed on the south wall

IN FILE	OUT FILE FS	AUTO ID	PULSES	MATCHING	MATCH RATIO	MAMMAL ID	DATE	TIME
1 PERDA_20250801_210452.wav	PERDA_20250801_210452_000.wav	MYCHNAT	7	3	1.000000	MYCHNAT	2025-08-01	21:04:52
2 PERDA_20250802_003015.wav	PERDA_20250802_003015_000.wav	MYCHNAT	4	4	1.000000	MYCHNAT	2025-08-02	00:30:15
3 PERDA_20250802_012854.wav	PERDA_20250802_012854_000.wav	MYCHNAT	3	3	1.000000	MYCHNAT	2025-08-02	01:28:54
4 PERDA_20250801_210451.wav	PERDA_20250801_210451_000.wav	MYCHNAT	2	2	1.000000		2025-08-01	21:04:51
5 PERDA_20250802_002606.wav	PERDA_20250802_002606_000.wav	MYCHNAT	24	24	1.000000		2025-08-02	00:26:06
6 PERDA_20250802_002636.wav	PERDA_20250802_002636_000.wav	MYCHNAT	12	12	1.000000		2025-08-02	00:26:36
7 PERDA_20250801_232055.wav	PERDA_20250801_232055_000.wav	MYCHNAT	5	4	0.800000		2025-08-01	23:20:55
8 PERDA_20250802_002621.wav	PERDA_20250802_002621_000.wav	MyID	7	0	0.000000		2025-08-02	00:26:21
9 PERDA_20250802_002623.wav	PERDA_20250802_002623_000.wav	MyID	7	0	0.000000		2025-08-02	00:26:23
10 PERDA_20250802_002636.wav	PERDA_20250802_002636_000.wav	MyID	11	0	0.000000		2025-08-02	00:26:36



File Help

	IN FILE	OUT FILE FS	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID	DATE	TIME
182	PERDA_20250802_044759.wav	PERDA_20250802_044759_000.wav	None					2025-08-02	04:47:59
183	PERDA_20250802_044754.wav	PERDA_20250802_044754_000.wav	None					2025-08-02	04:47:54
184	PERDA_20250802_052900.wav	PERDA_20250802_052900_000.wav	FFFF	140	540	0.840000		2025-08-02	05:29:00
185	PERDA_20250801_214920.wav	PERDA_20250801_214920_000.wav	FFFF	121	122	1.000000		2025-08-01	21:49:20
186	PERDA_20250801_215409.wav	PERDA_20250801_215409_000.wav	FFFF	120	119	0.992500		2025-08-01	21:54:09
187	PERDA_20250802_052913.wav	PERDA_20250802_052913_000.wav	FFFF	119	104	0.865500		2025-08-02	05:29:13
188	PERDA_20250802_053026.wav	PERDA_20250802_053026_000.wav	FFFF	103	100	0.971000		2025-08-02	05:30:26
189	PERDA_20250801_214104.wav	PERDA_20250801_214104_000.wav	FFFF	89	88	0.990000		2025-08-01	21:41:04
190	PERDA_20250802_053048.wav	PERDA_20250802_053048_000.wav	FFFF	95	95	1.000000		2025-08-02	05:30:48
191	PERDA_20250801_213855.wav	PERDA_20250801_213855_000.wav	FFFF	93	93	1.000000		2025-08-01	21:38:55
192	PERDA_20250802_052940.wav	PERDA_20250802_052940_000.wav	FFFF	91	93	1.000000		2025-08-02	05:29:40
193	PERDA_20250802_052940.wav	PERDA_20250802_052940_000.wav	FFFF	92	92	0.988000		2025-08-02	05:29:40
194	PERDA_20250802_053020.wav	PERDA_20250802_053020_000.wav	FFFF	103	81	0.780000		2025-08-02	05:30:20
195	PERDA_20250802_053032.wav	PERDA_20250802_053032_000.wav	FFFF	91	79	0.870000		2025-08-02	05:30:32
196	PERDA_20250802_053041.wav	PERDA_20250802_053041_000.wav	FFFF	84	78	0.907000		2025-08-02	05:30:41
197	PERDA_20250801_221503.wav	PERDA_20250801_221503_000.wav	FFFF	78	75	0.962000		2025-08-01	22:15:03
198	PERDA_20250802_053101.wav	PERDA_20250802_053101_000.wav	FFFF	73	71	0.973000		2025-08-02	05:31:01
199	PERDA_20250802_053027.wav	PERDA_20250802_053027_000.wav	FFFF	68	60	0.880000		2025-08-02	05:30:27
200	PERDA_20250802_053430.wav	PERDA_20250802_053430_000.wav	FFFF	67	65	0.970000		2025-08-02	05:34:30
201	PERDA_20250801_210445.wav	PERDA_20250801_210445_000.wav	FFFF	67	67	1.000000		2025-08-01	21:04:45
202	PERDA_20250802_053001.wav	PERDA_20250802_053001_000.wav	FFFF	61	61	1.000000		2025-08-02	05:30:01
203	PERDA_20250802_053116.wav	PERDA_20250802_053116_000.wav	FFFF	64	61	0.953000		2025-08-02	05:31:16
204	PERDA_20250801_212703.wav	PERDA_20250801_212703_000.wav	FFFF	70	61	0.870000		2025-08-01	21:27:03
205	PERDA_20250801_213701.wav	PERDA_20250801_213701_000.wav	FFFF	62	65	0.988000		2025-08-01	21:37:01
206	PERDA_20250802_053157.wav	PERDA_20250802_053157_000.wav	FFFF	60	59	0.983000		2025-08-02	05:31:57
207	PERDA_20250802_053104.wav	PERDA_20250802_053104_000.wav	FFFF	62	58	0.935000		2025-08-02	05:31:04
208	PERDA_20250802_053209.wav	PERDA_20250802_053209_000.wav	FFFF	65	57	0.875000		2025-08-02	05:32:09
209	PERDA_20250801_213422.wav	PERDA_20250801_213422_000.wav	FFFF	58	51	0.872000		2025-08-01	21:34:22
210	PERDA_20250802_053010.wav	PERDA_20250802_053010_000.wav	FFFF	54	54	1.000000		2025-08-02	05:30:10
211	PERDA_20250802_053044.wav	PERDA_20250802_053044_000.wav	FFFF	58	50	0.862000		2025-08-02	05:30:44
212	PERDA_20250801_213942.wav	PERDA_20250801_213942_000.wav	FFFF	40	40	1.000000		2025-08-01	21:39:42
213	PERDA_20250801_213119.wav	PERDA_20250801_213119_000.wav	FFFF	40	40	1.000000		2025-08-01	21:31:19
214	PERDA_20250802_053231.wav	PERDA_20250802_053231_000.wav	FFFF	44	47	0.934000		2025-08-02	05:32:31
215	PERDA_20250801_214420.wav	PERDA_20250801_214420_000.wav	FFFF	52	47	0.940000		2025-08-01	21:44:20
216	PERDA_20250802_053201.wav	PERDA_20250802_053201_000.wav	FFFF	44	44	1.000000		2025-08-02	05:32:01
217	PERDA_20250802_053107.wav	PERDA_20250802_053107_000.wav	FFFF	40	40	0.914000		2025-08-02	05:31:07
218	PERDA_20250802_053200.wav	PERDA_20250802_053200_000.wav	FFFF	41	45	1.000000		2025-08-02	05:32:00
219	PERDA_20250802_053107.wav	PERDA_20250802_053107_000.wav	FFFF	44	44	1.000000		2025-08-02	05:31:07
220	PERDA_20250802_053717.wav	PERDA_20250802_053717_000.wav	FFFF	41	40	0.978000		2025-08-02	05:37:17
221	PERDA_20250802_053851.wav	PERDA_20250802_053851_000.wav	FFFF	41	45	1.000000		2025-08-02	05:38:51
222	PERDA_20250802_055610.wav	PERDA_20250802_055610_000.wav	FFFF	44	42	0.955000		2025-08-02	05:56:10

File Help

	IN FILE	OUT FILE FS	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID	DATE	TIME
301	PERDA_20250801_210148.wav	PERDA_20250801_210148_000.wav	FFFF	2	2	1.000000		2025-08-01	21:01:48
302	PERDA_20250802_053832.wav	PERDA_20250802_053832_000.wav	FFFF	2	2	1.000000		2025-08-02	05:38:32
303	PERDA_20250801_210148.wav	PERDA_20250801_210148_000.wav	FFFF	11	11	1.000000		2025-08-01	21:01:48
304	PERDA_20250801_224119.wav	PERDA_20250801_224119_000.wav	FFFF	54	54	1.000000	FFFF	2025-08-01	22:41:19
305	PERDA_20250802_053020.wav	PERDA_20250802_053020_000.wav	FFFF	54	53	0.981000	FFFF	2025-08-02	05:30:20
306	PERDA_20250802_053043.wav	PERDA_20250802_053043_000.wav	FFFF	48	48	1.000000		2025-08-02	05:30:43
307	PERDA_20250801_204540.wav	PERDA_20250801_204540_000.wav	FFFF	46	46	1.000000		2025-08-01	20:45:40
308	PERDA_20250802_053122.wav	PERDA_20250802_053122_000.wav	FFFF	40	40	1.000000		2025-08-02	05:31:22
309	PERDA_20250802_054530.wav	PERDA_20250802_054530_000.wav	FFFF	47	47	0.975000		2025-08-02	05:45:30
310	PERDA_20250802_053253.wav	PERDA_20250802_053253_000.wav	FFFF	37	37	1.000000		2025-08-02	05:32:53
311	PERDA_20250802_054441.wav	PERDA_20250802_054441_000.wav	FFFF	33	34	0.971000		2025-08-02	05:44:41
312	PERDA_20250801_212713.wav	PERDA_20250801_212713_000.wav	FFFF	29	29	1.000000		2025-08-01	21:27:13
313	PERDA_20250802_054812.wav	PERDA_20250802_054812_000.wav	FFFF	24	22	0.916000		2025-08-02	05:48:12
314	PERDA_20250802_053443.wav	PERDA_20250802_053443_000.wav	FFFF	28	28	1.000000		2025-08-02	05:34:43
315	PERDA_20250801_205813.wav	PERDA_20250801_205813_000.wav	FFFF	19	19	1.000000		2025-08-01	20:58:13
316	PERDA_20250802_053454.wav	PERDA_20250802_053454_000.wav	FFFF	19	18	1.000000		2025-08-02	05:34:54
317	PERDA_20250802_053817.wav	PERDA_20250802_053817_000.wav	FFFF	19	18	1.000000		2025-08-02	05:38:17
318	PERDA_20250802_053117.wav	PERDA_20250802_053117_000.wav	FFFF	31	18	0.571000		2025-08-02	05:31:17
319	PERDA_20250802_053140.wav	PERDA_20250802_053140_000.wav	FFFF	31	18	0.571000		2025-08-02	05:31:40
320	PERDA_20250802_053239.wav	PERDA_20250802_053239_000.wav	FFFF	18	18	0.947000		2025-08-02	05:32:39
321	PERDA_20250802_053541.wav	PERDA_20250802_053541_000.wav	FFFF	20	17	0.850000		2025-08-02	05:35:41
322	PERDA_20250801_223730.wav	PERDA_20250801_223730_000.wav	FFFF	16	16	1.000000		2025-08-01	22:37:30
323	PERDA_20250802_053049.wav	PERDA_20250802_053049_000.wav	FFFF	17	16	0.941000		2025-08-02	05:30:49
324	PERDA_20250801_205140.wav	PERDA_20250801_205140_000.wav	FFFF	15	15	1.000000		2025-08-01	20:51:40
325	PERDA_20250802_050815.wav	PERDA_20250802_050815_000.wav	FFFF	16	15	1.000000		2025-08-02	05:08:15
326	PERDA_20250802_051513.wav	PERDA_20250802_051513_000.wav	FFFF	19	19	1.000000		2025-08-02	05:15:13
327	PERDA_20250802_050813.wav	PERDA_20250802_050813_000.wav	FFFF	14	13	0.929000		2025-08-02	05:08:13
328	PERDA_20250802_053630.wav	PERDA_20250802_053630_000.wav	FFFF	13	10	0.769000		2025-08-02	05:36:30
329	PERDA_20250801_220219.wav	PERDA_20250801_220219_000.wav	FFFF	8	8	1.000000		2025-08-01	22:02:19
330	PERDA_20250802_052712.wav	PERDA_20250802_052712_000.wav	FFFF	8	8	0.966000		2025-08-02	05:27:12
331	PERDA_20250802_054440.wav	PERDA_20250802_054440_000.wav	FFFF	12	8	0.667000		2025-08-02	05:44:40
332	PERDA_20250801_210210.wav	PERDA_20250801_210210_000.wav	FFFF	7	7	1.000000		2025-08-01	21:02:10
333	PERDA_20250802_052714.wav	PERDA_20250802_052714_000.wav	FFFF	8	8	1.000000		2025-08-02	05:27:14
334	PERDA_20250802_052813.wav	PERDA_20250802_052813_000.wav	FFFF	9	9	1.000000		2025-08-02	05:28:13
335	PERDA_20250802_052703.wav	PERDA_20250802_052703_000.wav	FFFF	9	9	1.000000		2025-08-02	05:27:03
336	PERDA_20250802_050204.wav	PERDA_20250802_050204_000.wav	FFFF	6	6	1.000000		2025-08-02	05:02:04
337	PERDA_20250802_050204.wav	PERDA_20250802_050204_000.wav	FFFF	4	4	1.000000		2025-08-02	05:02:04
338	PERDA_20250802_054511.wav	PERDA_20250802_054511_000.wav	FFFF	7	4	0.571000		2025-08-02	05:45:11
339	PERDA_20250802_054510.wav	PERDA_20250802_054510_000.wav	FFFF	2	2	1.000000		2025-08-02	05:45:10
340	PERDA_20250802_053828.wav	PERDA_20250802_053828_000.wav	PLEAUR	6	6	0.889000		2025-08-02	05:38:28
341	PERDA_20250802_054751.wav	PERDA_20250802_054751_000.wav	PLEAUR	2	2	1.000000		2025-08-02	05:47:51

Data from handheld Batlogger DM



C:\Users\donal\OneDrive\Documents\code\test_batlogger\trial.csv

File Help

	IN FILE	OUT FILE FS	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID	DATE	TIME
1	22200102.wav	22200102_00000_000.wav	MYCINAT	11	1	0.030000		2025-08-02	04:28:15
2	22200137.wav	22200137_00000_000.wav	NetID	7	0	0.000000	Noise	2025-08-02	04:47:58
3	22200004.wav	22200004_00000_000.wav	Noise					2025-08-01	21:55:27

File Help

	IN FILE	OUT FILE FS	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID	DATE	TIME
52	22200131.wav	22200131_00000_000.wav	Noise					2025-08-02	04:34:25
53	22200134.wav	22200134_00000_000.wav	Noise					2025-08-02	04:44:09
54	22200136.wav	22200136_00000_000.wav	Noise					2025-08-02	04:47:18
55	22200110.wav	22200110_00015_000.wav	Noise					2025-08-02	04:29:47
56	22200053.wav	22200053_00000_000.wav	PPPP	98	98	1.000000		2025-08-01	22:58:41
57	22200029.wav	22200029_00000_000.wav	PPPP	82	82	1.000000		2025-08-01	22:40:28
58	22200027.wav	22200027_00000_000.wav	PPPP	91	91	1.000000		2025-08-01	22:36:16
59	22200063.wav	22200063_00000_000.wav	PPPP	94	88	0.936000		2025-08-01	22:56:07
60	22200039.wav	22200039_00000_000.wav	PPPP	86	86	1.000000		2025-08-01	22:54:03
61	22200037.wav	22200037_00000_000.wav	PPPP	84	84	1.000000		2025-08-01	22:48:44
62	22200074.wav	22200074_00000_000.wav	PPPP	78	78	0.974000		2025-08-01	23:08:04
63	22200073.wav	22200073_00000_000.wav	PPPP	76	76	0.894000		2025-08-01	23:07:50
64	22200070.wav	22200070_00000_000.wav	PPPP	81	73	0.901000		2025-08-01	23:07:11
65	22200068.wav	22200068_00000_000.wav	PPPP	85	73	0.859000		2025-08-01	23:06:52
66	22200067.wav	22200067_00000_000.wav	PPPP	73	67	0.918000		2025-08-01	23:06:38
67	22200110.wav	22200110_00000_000.wav	PPPP	64	64	1.000000		2025-08-02	04:28:32
68	22200025.wav	22200025_00000_000.wav	PPPP	68	63	0.926000		2025-08-01	22:43:51
69	22200048.wav	22200048_00000_000.wav	PPPP	55	55	1.000000		2025-08-01	22:58:51
70	22200109.wav	22200109_00000_000.wav	PPPP	53	52	0.981000		2025-08-02	04:29:20
71	22200034.wav	22200034_00000_000.wav	PPPP	58	50	0.862000		2025-08-01	22:43:40
72	22200135.wav	22200135_00000_000.wav	PPPP	49	49	1.000000		2025-08-02	04:47:03
73	22200083.wav	22200083_00000_000.wav	PPPP	50	47	0.940000		2025-08-01	23:12:21
74	22200075.wav	22200075_00000_000.wav	PPPP	48	46	0.958000		2025-08-01	23:08:20
75	22200047.wav	22200047_00000_000.wav	PPPP	46	45	0.978000		2025-08-01	22:58:38
76	22200050.wav	22200050_00000_000.wav	PPPP	52	45	0.865000		2025-08-01	22:58:16
77	22200046.wav	22200046_00000_000.wav	PPPP	42	42	1.000000		2025-08-01	22:58:22
78	22200038.wav	22200038_00000_000.wav	PPPP	38	38	1.000000		2025-08-01	22:49:25
79	22200056.wav	22200056_00000_000.wav	PPPP	35	35	1.000000		2025-08-01	23:01:53
80	22200111.wav	22200111_00000_000.wav	PPPP	35	35	1.000000		2025-08-02	04:29:47
81	22200066.wav	22200066_00000_000.wav	PPPP	34	33	0.971000		2025-08-01	23:06:30
82	22200028.wav	22200028_00000_000.wav	PPPP	32	32	1.000000		2025-08-01	22:36:33
83	22200036.wav	22200036_00000_000.wav	PPPP	31	30	0.968000		2025-08-01	22:44:03
84	22200104.wav	22200104_00000_000.wav	PPPP	32	30	0.938000		2025-08-02	04:28:31
85	22200091.wav	22200091_00000_000.wav	PPPP	28	28	1.000000		2025-08-02	04:18:58
86	22200107.wav	22200107_00000_000.wav	PPPP	28	28	1.000000		2025-08-02	04:29:04
87	22200049.wav	22200049_00000_000.wav	PPPP	26	27	0.964000		2025-08-01	22:58:06
88	22200106.wav	22200106_00000_000.wav	PPPP	26	26	1.000000		2025-08-02	04:28:58
89	22200031.wav	22200031_00000_000.wav	PPPP	27	26	0.963000		2025-08-01	22:41:13
90	22200018.wav	22200018_00000_000.wav	PPPP	26	25	0.962000		2025-08-01	22:39:44
91	22200077.wav	22200077_00000_000.wav	PPPP	26	24	0.923000		2025-08-01	23:10:01
92	22200058.wav	22200058_00000_000.wav	PPPP	22	22	1.000000		2025-08-01	23:04:55



	IN FILE	OUT FILE FS	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID	DATE	TIME
109	22200009.wav	22200009_00000_000.wav	PPFP	11	11	1.000000		2025-06-02	04:18:48
110	22200009.wav	22200009_00000_000.wav	PPFP	11	11	1.000000		2025-06-02	04:22:05
111	22200014.wav	22200014_00000_000.wav	PPFP	10	10	1.000000		2025-06-01	22:06:03
112	22200103.wav	22200103_00000_000.wav	PPFP	10	10	1.000000		2025-06-02	04:28:26
113	22200071.wav	22200071_00000_000.wav	PPFP	11	10	0.909090		2025-06-01	23:07:23
114	22200022.wav	22200022_00000_000.wav	PPFP	9	9	1.000000		2025-06-01	22:33:45
115	22200114.wav	22200114_00000_000.wav	PPFP	9	9	1.000000		2025-06-02	04:30:22
116	22200131.wav	22200131_00000_000.wav	PPFP	9	9	1.000000		2025-06-02	04:34:32
117	22200020.wav	22200020_00000_000.wav	PPFP	8	8	1.000000		2025-06-01	22:33:35
118	22200090.wav	22200090_00000_000.wav	PPFP	7	7	1.000000		2025-06-02	04:19:58
119	22200127.wav	22200127_00000_000.wav	PPFP	7	7	1.000000		2025-06-02	04:33:17
120	22200121.wav	22200121_00000_000.wav	PPFP	6	6	1.000000		2025-06-02	04:30:27
121	22200011.wav	22200011_00000_000.wav	PPFP	5	5	1.000000		2025-06-01	22:25:22
122	22200061.wav	22200061_00000_000.wav	PPFP	5	5	0.833333		2025-06-01	23:06:00
123	22200120.wav	22200120_00000_000.wav	PPFP	7	5	0.714286		2025-06-02	04:32:08
124	22200030.wav	22200030_00000_000.wav	PPFP	4	4	1.000000		2025-06-01	22:40:43
125	22200001.wav	22200001_00000_000.wav	PPFP	4	4	1.000000		2025-06-02	04:20:56
126	22200066.wav	22200066_00000_000.wav	PPFP	5	4	0.800000		2025-06-01	23:07:07
127	22200012.wav	22200012_00000_000.wav	PPFP	3	3	1.000000		2025-06-01	22:25:41
128	22200013.wav	22200013_00000_000.wav	PPFP	3	3	1.000000		2025-06-01	22:25:56
129	22200032.wav	22200032_00000_000.wav	PPFP	3	3	1.000000		2025-06-01	22:48:21
130	22200041.wav	22200041_00000_000.wav	PPFP	3	3	1.000000		2025-06-01	22:56:51
131	22200045.wav	22200045_00000_000.wav	PPFP	3	3	1.000000		2025-06-01	22:58:13
132	22200055.wav	22200055_00000_000.wav	PPFP	3	3	1.000000		2025-06-01	23:00:04
133	22200136.wav	22200136_00000_000.wav	PPFP	3	3	1.000000		2025-06-02	04:50:18
134	22200019.wav	22200019_00000_000.wav	PPFP	2	2	1.000000		2025-06-01	22:33:31
135	22200025.wav	22200025_00000_000.wav	PPFP	2	2	1.000000		2025-06-01	22:34:42
136	22200033.wav	22200033_00000_000.wav	PPFP	2	2	1.000000		2025-06-01	22:40:52
137	22200052.wav	22200052_00000_000.wav	PPFP	3	2	0.667000		2025-06-01	22:59:38
138	22200132.wav	22200132_00000_000.wav	PPFP	3	2	0.667000		2025-06-02	04:36:41
139	22200128.wav	22200128_00000_000.wav	PPFVG	28	28	1.000000		2025-06-02	04:54:02
140	22200054.wav	22200054_00000_000.wav	PPFVG	32	24	0.750000		2025-06-01	22:58:55
141	22200133.wav	22200133_00000_000.wav	PPFVG	22	22	1.000000		2025-06-02	04:44:50
142	22200126.wav	22200126_00000_000.wav	PPFVG	16	16	1.000000		2025-06-02	04:34:16
143	22200006.wav	22200006_00000_000.wav	PPFVG	15	15	1.000000		2025-06-01	22:10:53
144	22200002.wav	22200002_00000_000.wav	PPFVG	12	12	1.000000		2025-06-01	21:54:47
145	22200003.wav	22200003_00000_000.wav	PPFVG	8	8	1.000000		2025-06-01	21:53:29
146	22200138.wav	22200138_00000_000.wav	PPFVG	7	7	1.000000		2025-06-02	04:30:01
147	22200003.wav	22200003_00000_000.wav	PPFVG	6	6	1.000000		2025-06-01	21:55:16
148	22200009.wav	22200009_00000_000.wav	PPFVG	3	3	1.000000		2025-06-01	22:23:44
149	22200116.wav	22200116_00000_000.wav	PPFVG	4	3	0.750000		2025-06-02	04:33:55

Batlogger data handheld by Brian Keeley



DATE	TIME	LATITUDE	NS	LONGITUDE	EW	NAME	
8/1/20 25	21:59: 13	53.4243 4	N	7.32452	W	22070000_00000 _000	PIPPIP
8/1/20 25	22:00: 10	53.4243 2	N	7.32446	W	22070001_00000 _000	PIPPY G
8/1/20 25	22:13: 45	53.4244 8	N	7.32455	W	22070002_00000 _000	PIPPY G
8/1/20 25	22:19: 58	53.4244 7	N	7.32454	W	22070003_00000 _000	PIPPY G
8/1/20 25	22:20: 20	53.4244 8	N	7.32455	W	22070004_00000 _000	NOISE
8/1/20 25	22:29: 50	53.4244 9	N	7.32453	W	22070005_00000 _000	NOISE
8/1/20 25	22:31: 09	53.4237	N	7.32423	W	22070006_00000 _000	NOISE



8/1/20 25	22:34: 51	53.4213 7	N	7.32202	W	22070007_00000 _000	PIPPY G
8/1/20 25	22:36: 41	53.4203 2	N	7.32185	W	22070008_00000 _000	NOISE
8/1/20 25	22:36: 52	53.4202 1	N	7.32187	W	22070009_00000 _000	NOISE
8/1/20 25	22:39: 44	53.4212 1	N	7.32176	W	22070010_00000 _000	PIPPIP
8/1/20 25	22:39: 52	53.4213	N	7.32191	W	22070011_00000 _000	PIPPIP
8/1/20 25	22:40: 58	53.4217 9	N	7.32287	W	22070012_00000 _000	PIPPIP
8/1/20 25	22:42: 13	53.4241 5	N	7.32448	W	22070013_00000 _000	PIPPIP
8/1/20 25	22:42: 25	53.4241 9	N	7.32448	W	22070014_00000 _000	PIPPIP
8/1/20 25	22:42: 31	53.4242	N	7.32447	W	22070015_00000 _000	PIPPIP
8/1/20 25	22:43: 09	53.4242 6	N	7.32448	W	22070016_00000 _000	PIPPIP
8/1/20 25	22:45: 28	53.4245 3	N	7.32467	W	22070017_00000 _000	PIPPIP
8/1/20 25	22:45: 52	53.4245 1	N	7.32466	W	22070018_00000 _000	PIPPIP
8/1/20 25	22:49: 23	53.4244 5	N	7.32431	W	22070019_00000 _000	PIPPIP
8/1/20 25	22:49: 54	53.4244 6	N	7.32434	W	22070020_00000 _000	NOISE
8/1/20 25	22:50: 34	53.4244 5	N	7.32437	W	22070021_00000 _000	PIPPIP
8/1/20 25	22:50: 38	53.4244 4	N	7.32437	W	22070022_00000 _000	NoID
8/1/20 25	22:50: 48	53.4244 4	N	7.32437	W	22070022_00010 _001	PIPPIP



8/1/20 25	22:51: 23	53.4244 7	N	7.32436	W	22070023_00000 _000	PIPPIP
8/1/20 25	22:53: 30	53.4244 5	N	7.32448	W	22070024_00000 _000	PIPPIP
8/1/20 25	22:54: 42	53.4244 6	N	7.32433	W	22070025_00000 _000	NOISE
8/1/20 25	22:54: 52	53.4244 5	N	7.32433	W	22070026_00000 _000	PIPPIP
8/1/20 25	22:55: 56	53.4244 4	N	7.32433	W	22070027_00000 _000	PIPPIP
8/1/20 25	22:56: 03	53.4244 4	N	7.32435	W	22070028_00000 _000	PIPPIP
8/1/20 25	23:00: 18	53.4243 1	N	7.32447	W	22070029_00000 _000	PIPPIP
8/1/20 25	23:00: 34	53.4242 9	N	7.32443	W	22070030_00000 _000	PIPPIP
8/1/20 25	23:00: 49	53.4243	N	7.32445	W	22070031_00000 _000	PIPPIP
8/1/20 25	23:01: 01	53.4242 7	N	7.32445	W	22070032_00000 _000	PIPPIP
8/1/20 25	23:01: 11	53.4242 2	N	7.32445	W	22070033_00000 _000	NoID
8/1/20 25	23:01: 21	53.4242 2	N	7.32445	W	22070033_00010 _001	PIPPIP
8/1/20 25	23:01: 30	53.4241 8	N	7.32444	W	22070034_00000 _000	NoID
8/1/20 25	23:01: 40	53.4241 8	N	7.32444	W	22070034_00010 _001	NOISE
8/1/20 25	23:01: 44	53.4241 4	N	7.32444	W	22070035_00000 _000	NoID
8/1/20 25	23:01: 54	53.4241 4	N	7.32444	W	22070035_00010 _001	PIPPY G
8/1/20 25	23:03: 47	53.4229 8	N	7.32378	W	22070036_00000 _000	PIPPIP



8/1/20 25	23:06: 47	53.4214 4	N	7.32227	W	22070037_00000 _000	PIPPIP
8/1/20 25	23:08: 02	53.4211 4	N	7.32162	W	22070038_00000 _000	NoID
8/1/20 25	23:08: 12	53.4211 4	N	7.32162	W	22070038_00010 _001	PIPPIP
8/1/20 25	23:08: 17	53.4211 4	N	7.32162	W		
8/1/20 25	23:08: 18	53.4210 6	N	7.32164	W	22070039_00000 _000	PIPPIP
8/1/20 25	23:08: 24	53.4210 6	N	7.32162	W	22070040_00000 _000	NoID
8/1/20 25	23:08: 34	53.4210 6	N	7.32162	W	22070040_00010 _001	PIPPIP
8/1/20 25	23:08: 39	53.4210 6	N	7.32162	W		
8/1/20 25	23:08: 39	53.4209 8	N	7.32167	W	22070041_00000 _000	NoID
8/1/20 25	23:08: 49	53.4209 8	N	7.32167	W	22070041_00010 _001	PIPPIP
8/1/20 25	23:08: 54	53.4209 8	N	7.32167	W		
8/1/20 25	23:08: 53	53.4209 9	N	7.32172	W	22070042_00000 _000	NoID
8/1/20 25	23:09: 03	53.4209 9	N	7.32172	W	22070042_00010 _001	PIPPIP
8/1/20 25	23:09: 08	53.4209 9	N	7.32172	W		
8/1/20 25	23:09: 08	53.4209 9	N	7.32172	W	22070043_00000 _000	PIPPIP
8/1/20 25	23:09: 15	53.4209 9	N	7.32172	W	22070044_00000 _000	PIPPIP
8/1/20 25	23:09: 20	53.4209 9	N	7.32172	W	22070045_00000 _000	PIPPIP



8/1/20 25	23:09: 29	53.4209 9	N	7.32172	W	22070046_00000 _000	PIPPIP
8/1/20 25	23:09: 44	53.4209 8	N	7.32173	W	22070047_00000 _000	NoID
8/1/20 25	23:09: 54	53.4209 8	N	7.32173	W	22070047_00010 _001	PIPPIP
8/1/20 25	23:09: 59	53.4209 8	N	7.32173	W		
8/1/20 25	23:09: 58	53.4209 9	N	7.32174	W	22070048_00000 _000	NoID
8/1/20 25	23:10: 08	53.4209 9	N	7.32174	W	22070048_00010 _001	PIPPIP
8/1/20 25	23:10: 13	53.4209 9	N	7.32174	W		
8/1/20 25	23:10: 14	53.4208 9	N	7.32177	W	22070049_00000 _000	PIPPIP
8/1/20 25	23:11: 56	53.4200 5	N	7.32191	W	22070050_00000 _000	PIPPIP
8/1/20 25	23:12: 09	53.4200 4	N	7.3219	W	22070051_00000 _000	PIPPIP
8/1/20 25	23:13: 21	53.4199 7	N	7.32189	W	22070052_00000 _000	NOISE
8/1/20 25	23:14: 02	53.4199 6	N	7.32189	W	22070053_00000 _000	PIPPIP
8/1/20 25	23:14: 09	53.4199 6	N	7.32189	W	22070054_00000 _000	PIPPIP
8/1/20 25	23:14: 15	53.4199 6	N	7.32187	W	22070055_00000 _000	NoID
8/1/20 25	23:14: 25	53.4199 6	N	7.32187	W	22070055_00010 _001	PIPPIP
8/1/20 25	23:14: 32	53.4199 7	N	7.32188	W	22070056_00000 _000	PIPPIP
8/2/20 25	4:15:5 2	53.4214 3	N	7.32209	W	22070059_00000 _000	PIPPIP



8/2/20 25	4:17:0 2	53.4219 5	N	7.32268	W	22070060_00000 _000	PIPPIP
8/2/20 25	4:17:1 7	53.4221 2	N	7.32276	W	22070061_00000 _000	PIPPIP
8/2/20 25	4:17:2 8	53.4222 7	N	7.32283	W	22070062_00000 _000	PIPPY G
8/2/20 25	4:18:4 3	53.4230 3	N	7.32333	W	22070063_00000 _000	PIPPY G
8/2/20 25	4:19:4 4	53.4236 1	N	7.32376	W	22070064_00000 _000	PIPPY G
8/2/20 25	4:21:1 1	53.4241 9	N	7.32444	W	22070065_00000 _000	NoID
8/2/20 25	4:21:2 1	53.4241 9	N	7.32444	W	22070065_00010 _001	NOISE
8/2/20 25	4:21:3 8	53.4242 1	N	7.32446	W	22070066_00000 _000	PIPPIP
8/2/20 25	4:21:4 5	53.4242 5	N	7.32446	W	22070067_00000 _000	PIPPIP
8/2/20 25	4:21:5 4	53.4243	N	7.32443	W	22070068_00000 _000	PIPPIP
8/2/20 25	4:21:5 7	53.4243 1	N	7.32443	W	22070069_00000 _000	PIPPIP
8/2/20 25	4:22:0 9	53.4243 6	N	7.32438	W	22070070_00000 _000	PIPPIP
8/2/20 25	4:22:5 0	53.4245	N	7.32436	W	22070071_00000 _000	PIPPIP
8/2/20 25	4:23:2 0	53.4245 4	N	7.32455	W	22070072_00000 _000	PIPPIP
8/2/20 25	4:23:2 5	53.4245 4	N	7.32456	W	22070073_00000 _000	PIPPIP
8/2/20 25	4:23:5 4	53.4245 3	N	7.32465	W	22070074_00000 _000	PIPPIP
8/2/20 25	4:24:0 2	53.4245	N	7.32466	W	22070075_00000 _000	NOISE



8/2/20 25	4:27:3 3	53.4244 7	N	7.3245	W	22070076_00000 _000	PIPPIP
8/2/20 25	4:27:4 9	53.4244 4	N	7.3245	W	22070077_00000 _000	NoID
8/2/20 25	4:27:5 9	53.4244 4	N	7.3245	W	22070077_00010 _001	PIPPIP
8/2/20 25	4:28:0 8	53.4243 9	N	7.32447	W	22070078_00000 _000	PIPPIP
8/2/20 25	4:28:2 3	53.4243 9	N	7.32447	W	22070079_00000 _000	PIPPIP
8/2/20 25	4:28:3 4	53.4243 9	N	7.32447	W	22070080_00000 _000	PIPPIP
8/2/20 25	4:28:4 7	53.4243 9	N	7.32448	W	22070081_00000 _000	NoID
8/2/20 25	4:28:5 7	53.4243 9	N	7.32448	W	22070081_00010 _001	PIPPIP
8/2/20 25	4:28:5 9	53.4243 9	N	7.32447	W	22070082_00000 _000	PIPPIP
8/2/20 25	4:29:4 9	53.4244 9	N	7.32435	W	22070083_00000 _000	PIPPIP
8/2/20 25	4:30:0 0	53.4244 9	N	7.32435	W	22070084_00000 _000	NOISE
8/2/20 25	4:30:0 3	53.4244 9	N	7.32435	W	22070085_00000 _000	PIPPIP
8/2/20 25	4:30:1 8	53.4245	N	7.32434	W	22070086_00000 _000	NoID
8/2/20 25	4:30:2 8	53.4245	N	7.32434	W	22070086_00010 _001	PIPPIP
8/2/20 25	4:30:3 3	53.4245	N	7.32434	W		
8/2/20 25	4:30:3 2	53.4245 1	N	7.32434	W	22070087_00000 _000	NoID
8/2/20 25	4:30:4 2	53.4245 1	N	7.32434	W	22070087_00010 _001	PIPPIP



8/2/20 25	4:30:4 7	53.4245 1	N	7.32434	W		
8/2/20 25	4:30:4 8	53.4245 1	N	7.32431	W	22070088_00000 _000	PIPPIP
8/2/20 25	4:30:5 6	53.4245 1	N	7.32432	W	22070089_00000 _000	NoID
8/2/20 25	4:31:0 6	53.4245 1	N	7.32432	W	22070089_00010 _001	NOISE
8/2/20 25	4:31:0 8	53.4245	N	7.32433	W	22070090_00000 _000	NoID
8/2/20 25	4:31:1 8	53.4245	N	7.32433	W	22070090_00010 _001	PIPPIP
8/2/20 25	4:31:2 3	53.4245	N	7.32432	W	22070091_00000 _000	PIPPIP
8/2/20 25	4:31:2 5	53.4245	N	7.32432	W	22070092_00000 _000	NoID
8/2/20 25	4:31:3 5	53.4245	N	7.32432	W	22070092_00010 _001	PIPPIP
8/2/20 25	4:31:4 0	53.4245	N	7.32432	W		
8/2/20 25	4:31:4 0	53.4245 1	N	7.32437	W	22070093_00000 _000	PIPPIP
8/2/20 25	4:31:4 5	53.4245 2	N	7.32437	W	22070094_00000 _000	PIPPIP
8/2/20 25	4:31:5 4	53.4245 1	N	7.32436	W	22070095_00000 _000	PIPPIP
8/2/20 25	4:32:0 4	53.4245 1	N	7.32434	W	22070096_00000 _000	PIPPIP
8/2/20 25	4:32:1 0	53.4245 1	N	7.32434	W	22070097_00000 _000	PIPPIP
8/2/20 25	4:32:1 5	53.4245 1	N	7.32433	W	22070098_00000 _000	PIPPIP
8/2/20 25	4:32:2 5	53.4245 1	N	7.32434	W	22070099_00000 _000	NoID



8/2/20 25	4:32:3 5	53.4245 1	N	7.32435	W	22070100_00000 _000	PIPPIP
8/2/20 25	4:32:4 1	53.4245 1	N	7.32435	W	22070101_00000 _000	PIPPIP
8/2/20 25	4:32:4 8	53.4245 1	N	7.32436	W	22070102_00000 _000	NOISE
8/2/20 25	4:32:5 0	53.4245 1	N	7.32436	W	22070103_00000 _000	PIPPY G
8/2/20 25	4:32:5 4	53.4245 1	N	7.32437	W	22070104_00000 _000	PIPPY G
8/2/20 25	4:33:0 3	53.4245 1	N	7.32437	W	22070105_00000 _000	PIPPY G
8/2/20 25	4:33:0 9	53.4245 1	N	7.32435	W	22070106_00000 _000	PIPPY G
8/2/20 25	4:33:1 5	53.4245 1	N	7.32434	W	22070107_00000 _000	NoID
8/2/20 25	4:33:1 9	53.4245 1	N	7.32434	W	22070108_00000 _000	NOISE
8/2/20 25	4:33:2 8	53.4245 2	N	7.32433	W	22070109_00000 _000	NOISE
8/2/20 25	4:33:3 0	53.4245 2	N	7.32434	W	22070110_00000 _000	PIPPY G
8/2/20 25	4:33:3 3	53.4245 2	N	7.32435	W	22070111_00000 _000	NOISE
8/2/20 25	4:33:4 1	53.4245 1	N	7.32435	W	22070112_00000 _000	NoID
8/2/20 25	4:33:4 5	53.4245 1	N	7.32436	W	22070113_00000 _000	NoID
8/2/20 25	4:33:5 5	53.4245 1	N	7.32436	W	22070113_00010 _001	PIPPIP
8/2/20 25	4:34:0 0	53.4245 1	N	7.32436	W		
8/2/20 25	4:34:0 0	53.4245 1	N	7.32434	W	22070114_00000 _000	PIPPIP



8/2/20 25	4:34:0 9	53.4245	N	7.32434	W	22070115_00000 _000	PIPPIP
8/2/20 25	4:34:2 0	53.4245	N	7.32434	W	22070116_00000 _000	PIPPIP
8/2/20 25	4:34:3 2	53.4245 1	N	7.32432	W	22070117_00000 _000	NOISE
8/2/20 25	4:34:4 6	53.4245 2	N	7.32433	W	22070118_00000 _000	PIPPIP
8/2/20 25	4:35:0 1	53.4245 2	N	7.32432	W	22070119_00000 _000	PIPPIP
8/2/20 25	4:35:1 2	53.4245 2	N	7.32434	W	22070120_00000 _000	NOISE
8/2/20 25	4:36:0 0	53.4245 2	N	7.32432	W	22070121_00000 _000	PIPPY G
8/2/20 25	4:36:1 1	53.4245 3	N	7.32433	W	22070122_00000 _000	PIPPY G
8/2/20 25	4:36:1 7	53.4245 3	N	7.32434	W	22070123_00000 _000	PIPPY G
8/2/20 25	4:36:2 7	53.4245 2	N	7.32433	W	22070124_00000 _000	NoID
8/2/20 25	4:36:3 4	53.4245 2	N	7.32437	W	22070125_00000 _000	PIPPIP
8/2/20 25	4:37:1 1	53.4245 3	N	7.32433	W	22070126_00000 _000	PIPPIP
8/2/20 25	4:38:0 4	53.4245 4	N	7.32433	W	22070127_00000 _000	NoID
8/2/20 25	4:38:4 0	53.4245 2	N	7.32433	W	22070128_00000 _000	PIPPIP
8/2/20 25	4:41:3 2	53.4245	N	7.32434	W	22070129_00000 _000	MYOM YS
8/2/20 25	4:46:0 2	53.4244 9	N	7.32449	W	22070130_00000 _000	PIPPY G
8/2/20 25	4:48:0 5	53.4245 5	N	7.32456	W	22070131_00000 _000	PIPPY G



8/2/20 25	4:48:5 2	53.4244 8	N	7.3243	W	22070132_00000 _000	PIPPIP
8/2/20 25	4:49:0 1	53.4244 8	N	7.32431	W	22070133_00000 _000	NOISE
8/2/20 25	4:49:0 3	53.4244 8	N	7.32431	W	22070134_00000 _000	PIPPY G
8/2/20 25	4:49:1 0	53.4244 8	N	7.32431	W	22070135_00000 _000	PIPPY G
8/2/20 25	4:49:1 3	53.4244 8	N	7.3243	W	22070136_00000 _000	NoID
8/2/20 25	4:49:2 3	53.4244 8	N	7.3243	W	22070136_00010 _001	NOISE
8/2/20 25	4:49:2 8	53.4244 8	N	7.32431	W	22070137_00000 _000	PIPPY G
8/2/20 25	4:49:5 0	53.4244 8	N	7.3243	W	22070138_00000 _000	PIPPY G
8/2/20 25	4:49:5 7	53.4244 5	N	7.32429	W	22070139_00000 _000	PIPPY G
8/2/20 25	4:50:0 6	53.4244 4	N	7.3243	W	22070140_00000 _000	PIPPY G
8/2/20 25	4:50:1 6	53.4244 4	N	7.32429	W	22070141_00000 _000	PIPPY G
8/2/20 25	4:50:2 3	53.4244 4	N	7.32429	W	22070142_00000 _000	PIPPY G
8/2/20 25	4:50:3 4	53.4244 1	N	7.32431	W	22070143_00000 _000	NOISE
8/2/20 25	4:50:5 2	53.4244	N	7.32438	W	22070144_00000 _000	PIPPY G
8/2/20 25	4:51:0 0	53.4244	N	7.32438	W	22070145_00000 _000	PIPPY G
8/2/20 25	4:51:1 1	53.4244	N	7.32435	W	22070146_00000 _000	PIPPY G
8/2/20 25	4:51:3 3	53.4243 2	N	7.32426	W	22070147_00000 _000	PIPPY G



8/2/20 25	4:51:4 0	53.4243	N	7.32425	W	22070148_00000 _000	PIPPY G
8/2/20 25	4:51:4 5	53.4243	N	7.32425	W	22070149_00000 _000	NOISE
8/2/20 25	4:51:4 8	53.4243	N	7.32424	W	22070150_00000 _000	PIPPY G
8/2/20 25	4:52:1 3	53.4243 4	N	7.32424	W	22070151_00000 _000	PIPPIP
8/2/20 25	4:52:1 7	53.4243 7	N	7.32426	W	22070152_00000 _000	PIPPIP
8/2/20 25	5:30:3 0	53.4245	N	7.32455	W	22070154_00000 _000	NOISE
8/2/20 25	5:37:5 7	53.4242	N	7.32442	W	22070155_00000 _000	NOISE
8/2/20 25	5:38:0 8	53.4241 8	N	7.32441	W	22070156_00000 _000	NOISE
8/2/20 25	5:38:2 5	53.4241 8	N	7.32443	W	22070157_00000 _000	NOISE

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

BCIreland data: search results 5 Aug 2025					
Search parameters: Roosts Transects Ad-hoc observation sites with observations of all species within 10000m of N4493741809					
Roosts					
Name	Grid reference	Grid ref easting	Grid ref northing	Address	Species observed
09WHS1 WC	N3787336256	237873	236256	Split Hills Esker Woodland, Tyrrellspass, Co. Westmeath	Pipistrellus pygmaeus



10WHNF1 WC	N3803937 697	2380 39	23769 7	New Forest Golf Course, Tyrrellspass, Co. Westmeath	Unidentified bat
10WHNF2 WC	N3801837 696	2380 18	23769 6	New Forest Golf Course, Tyrrellspass, Co. Westmeath	Nyctalus leisleri
11WHN521 WC	N4137043 062	2413 70	24306 2	N52, Mullingar, Co. Westmeath	Pipistrellus pygmaeus
11WHN522 WC	N4137243 062	2413 72	24306 2	N52, Mullingar, Co. Westmeath	Unidentified bat
11WHN523 WC	N4137443 065	2413 74	24306 5	N52, Mullingar, Co. Westmeath	Unidentified bat
11WHN524 WC	N4137443 069	2413 74	24306 9	N52, Mullingar, Co. Westmeath	Unidentified bat
11WHN525 WC	N4242545 233	2424 25	24523 3	N52, Mullingar, Co. Westmeath	Pipistrellus spp. (45kHz/55kHz)
11WHN526 WC	N4242545 233	2424 25	24523 3	N52, Mullingar, Co. Westmeath	
Castle Lost Castle	N4507941 369	2450 79	24136 9	Castle Lost, Westmeath	Myotis nattereri, Pipistrellus pipistrellus (45kHz), Plecotus auritus
Castle Lost Church	N4493741 784	2449 37	24178 4	Near Rocherfordbridge westmeath	Plecotus auritus, Myotis daubentonii
Commercial grain stores	N503511	2503 00	25110 0	Three storey farm building with barns and commercial grain stores, Downes, County Westmeath	Pipistrellus pipistrellus (45kHz)
Knockmant	N5267850 933	2526 78	25093 3	Knockmant, County Westmeath N91 Y02P	Pipistrellus pygmaeus
Ladestown	N4049	2400 00	24900 0	Lough Ennel, Mullingar, County Westmeath	Unidentified bat
Lynburry Stable	N4305048 800	2430 50	24880 0	Lynnbury B&B, Mullingar, County Westmeath	Myotis spp., Pipistrellus pygmaeus



Lynnbury House	N4305048800	243050	248800	Mullingar, County Westmeath	Pipistrellus pygmaeus
Tudenham Park	N419472	241900	247200	Mullingar, County Westmeath	Myotis daubentonii, Plecotus auritus, Pipistrellus pygmaeus
Transects					
Name	Grid reference start	Grid ref easting start	Grid ref northing start	Species observed	
Ballinagore Transect	N3605938950	236059	238950	Unidentified bat, Myotis daubentonii, Nyctalus leisleri, Pipistrellus spp. (45kHz/55kHz)	
Ballinea Bridge Transect	N3850051100	238500	251100	Myotis daubentonii, Unidentified bat	
Ballynagore Transect spot 1	N3605938950	236059	238950	Myotis daubentonii	
Ballynagore Transect spot 10	N3560039600	235600	239600	Myotis daubentonii, Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri	
Ballynagore Transect spot 2	N3598739039	235987	239039		
Ballynagore Transect spot 3	N3588439059	235884	239059	Unidentified bat	
Ballynagore Transect spot 4	N3579039095	235790	239095		
Ballynagore Transect spot 5	N3570739167	235707	239167		
Ballynagore Transect spot 6	N3564439264	235644	239264	Unidentified bat	
Ballynagore Transect spot 7	N3559439358	235594	239358	Myotis daubentonii, Unidentified bat	



Ballynagore Transect spot 8	N3555339 483	2355 53	23948 3		
Ballynagore Transect spot 9	N3557339 575	2355 73	23957 5		
Baltrasna Bridge Transect	N4718051 300	2471 80	25130 0	Unidentified bat, Myotis daubentonii	
Bellmount Bridge Transect	N3950051 100	2395 00	25110 0	Myotis daubentonii, Unidentified bat, Nyctalus leisleri, Pipistrellus pipistrellus (45kHz)	
Butle	N4200050 300	2420 00	25030 0	Myotis daubentonii, Unidentified bat, Pipistrellus spp. (45kHz/55kHz), Nyctalus leisleri	
Butler	N4200050 300	2420 00	25030 0		
Coola Mills Transect	N4200050 200	2420 00	25020 0	Myotis daubentonii, Unidentified bat	
Gaybrook Transect 1	N4520046 950	2452 00	24695 0	Nyctalus leisleri, Pipistrellus pipistrellus (45kHz)	
Gaybrook Transect 2	N4740047 950	2474 00	24795 0	Nyctalus leisleri	
Gaybrook Transect 3	N4935047 650	2493 50	24765 0	Nyctalus leisleri, Pipistrellus pipistrellus (45kHz)	
Gaybrook Transect 4	N4920045 350	2492 00	24535 0	Nyctalus leisleri, Pipistrellus pipistrellus (45kHz)	
Gaybrook Transect 5	N4895043 150	2489 50	24315 0	Nyctalus leisleri, Pipistrellus pipistrellus (45kHz)	
Gaybrook Transect 6	N4705044 750	2470 50	24475 0	Nyctalus leisleri	
Gaybrook Transect 7	N4710045 900	2471 00	24590 0	Nyctalus leisleri, Pipistrellus pygmaeus	
Gaybrook Transect 8	N4755044 350	2475 50	24435 0	Nyctalus leisleri	
Littlewood	N529479	2529 00	24790 0		
N11 (3) 2003-	N3570034 700	2357 00	23470 0	Pipistrellus pygmaeus, Nyctalus leisleri, Plecotus auritus, Pipistrellus pipistrellus (45kHz), Pipistrellus spp. (45kHz/55kHz), Pipistrellus nathusii	
N11 (4) 2003-	N3980032 900	2398 00	23290 0	Pipistrellus pipistrellus (45kHz), Pipistrellus spp. (45kHz/55kHz), Myotis spp., Unidentified	



				bat,Pipistrellus pygmaeus,Plecotus auritus,Nyctalus leisleri,Pipistrellus nathusii	
Newells Bridge Transect	N3830042300	238300	242300	Myotis daubentonii,Unidentified bat,Myotis nattereri,Pipistrellus spp. (45kHz/55kHz)	
Royal Canal, Coralstown	N5478749802	254787	249802	Myotis daubentonii	
The Downs Kinnegad Transect	N5008550707	250085	250707	Myotis daubentonii,Unidentified bat,Pipistrellus pipistrellus (45kHz),Pipistrellus pygmaeus	
Ad-hoc observations					
Survey	Grid reference	Grid ref easting	Grid ref north	Date	Species observed
Ad Hoc Records collected during Monitoring	N356396	235600	239600	8/8/2012	Nyctalus leisleri,Pipistrellus spp. (45kHz/55kHz)
Ad Hoc Records collected during Monitoring	N3950051100	239500	251100	8/10/2012	Pipistrellus pipistrellus (45kHz)
Bat Conservation Ireland Bat Walks	N3951	239000	251000	5/17/2008	Pipistrellus pipistrellus (45kHz),Pipistrellus pygmaeus,Pipistrellus spp. (45kHz/55kHz),Nyctalus leisleri,Myotis daubentonii
Bat Survey - Scott Cawley	N503511	250300	251100	9/2/2008	Pipistrellus pipistrellus (45kHz),Nyctalus leisleri,Myotis daubentonii,Pipistrellus pygmaeus
Bat Surveys - Tina Aughney	N4854444585	248544	244585	5/10/2009	Pipistrellus pipistrellus (45kHz),Pipistrellus pygmaeus,Nyctalus leisleri,Myotis spp.



Bat Surveys - Tina Aughney	N4838244 470	2483 82	24447 0	5/10/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus
Bat Surveys - Tina Aughney	N4585944 383	2458 59	24438 3	5/10/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri
Bat Surveys - Tina Aughney	N4582944 718	2458 29	24471 8	5/10/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Myotis spp.
Bat Surveys - Tina Aughney	N4617845 310	2461 78	24531 0	5/10/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Pipistrellus spp. (45kHz/55kHz), Nyctalus leisleri, Myotis spp., Plecotus auritus
Bat Surveys - Tina Aughney	N4578745 519	2457 87	24551 9	5/11/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Pipistrellus spp. (45kHz/55kHz), Nyctalus leisleri, Plecotus auritus
Bat Surveys - Tina Aughney	N4608745 503	2460 87	24550 3	5/11/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Pipistrellus spp. (45kHz/55kHz), Myotis spp.
Bat Surveys - Tina Aughney	N4604145 346	2460 41	24534 6	5/11/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Pipistrellus spp. (45kHz/55kHz), Nyctalus leisleri, Myotis spp., Plecotus auritus
Bat Surveys - Tina Aughney	N4563144 981	2456 31	24498 1	5/29/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Pipistrellus spp. (45kHz/55kHz)
Bat Surveys - Tina Aughney	N4545045 610	2454 50	24561 0	5/29/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Pipistrellus spp. (45kHz/55kHz), Nyctalus leisleri
Bat Surveys - Tina Aughney	N4594045 022	2459 40	24502 2	5/29/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Pipistrellus spp.



					(45kHz/55kHz), Myotis spp., Pipistrellus nathusii
Bat Surveys - Tina Aughney	N4582444 688	2458 24	24468 8	5/29/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri, Myotis spp., Pipistrellus nathusii
Bat Surveys - Tina Aughney	N4794143 314	2479 41	24331 4	6/2/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri
Bat Surveys - Tina Aughney	N4802843 404	2480 28	24340 4	6/2/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Pipistrellus spp. (45kHz/55kHz), Myotis spp., Nyctalus leisleri
Bat Surveys - Tina Aughney	N4781143 605	2478 11	24360 5	6/2/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri, Myotis spp.
Bat Surveys - Tina Aughney	N4767243 091	2476 72	24309 1	6/2/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Pipistrellus spp. (45kHz/55kHz), Nyctalus leisleri
Bat Surveys - Tina Aughney	N4745843 302	2474 58	24330 2	6/9/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri
Bat Surveys - Tina Aughney	N4799146 474	2479 91	24647 4	6/9/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri, Myotis spp.
Bat Surveys - Tina Aughney	N4756446 482	2475 64	24648 2	6/9/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri
Bat Surveys - Tina Aughney	N4768943 088	2476 89	24308 8	6/9/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri
BATLAS 2010	N384424	2384 00	24240 0	5/18/2009	Myotis daubentonii, Pipistrellus pipistrellus (45kHz), Pipistrellus



					pygmaeus, Nyctalus leisleri, Plecotus auritus
BATLAS 2010	N416377	241600	237700	5/18/2009	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri, Myotis spp.
BATLAS 2010	N486388	248600	238800	5/18/2009	Pipistrellus pygmaeus, Myotis daubentonii
BATLAS 2020	N4148537849	241485	237849	7/11/2018	Pipistrellus pipistrellus (45kHz), Nyctalus leisleri
BATLAS 2020	N4852938884	248529	238884	7/11/2018	Pipistrellus pipistrellus (45kHz), Nyctalus leisleri
BATLAS 2020	N3561939691	235619	239691	7/2/2018	Pipistrellus pygmaeus, Myotis daubentonii
BATLAS 2020	N4069040998	240690	240998	6/9/2016	Pipistrellus pygmaeus, Nyctalus leisleri
BATLAS 2020	N4000041500	240000	241500	#####	Pipistrellus pygmaeus
BATLAS 2020	N5139242081	251392	242081	9/26/2018	
BATLAS 2020	N4332042304	243320	242304	#####	Pipistrellus pipistrellus (45kHz), Pipistrellus spp. (45kHz/55kHz)
BATLAS 2020	N4332042304	243320	242304	6/9/2016	Pipistrellus spp. (45kHz/55kHz)
BATLAS 2020	N3840642325	238406	242325	6/1/2016	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri
BATLAS 2020	N3840642325	238406	242325	10/1/2015	Pipistrellus pygmaeus, Nyctalus leisleri, Myotis daubentonii
BATLAS 2020	N4421042340	244210	242340	#####	Pipistrellus pygmaeus
BATLAS 2020	N4421042340	244210	242340	6/9/2016	
BATLAS 2020	N3714943687	237149	243687	10/1/2015	Pipistrellus pygmaeus
BATLAS 2020	N3714943687	237149	243687	6/1/2016	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus



BATLAS 2020	N3737443 687	2373 74	24368 7	6/1/2016	Pipistrellus pygmaeus
BATLAS 2020	N3737443 897	2373 74	24389 7	10/1/2015	Pipistrellus spp. (45kHz/55kHz)
BATLAS 2020	N3681747 434	2368 17	24743 4	#####	Pipistrellus pipistrellus (45kHz), Nyctalus leisleri
BATLAS 2020	N3971948 437	2397 19	24843 7	#####	Pipistrellus pygmaeus
BATLAS 2020	N5288849 234	2528 88	24923 4	9/26/2018	Pipistrellus pipistrellus (45kHz)
BATLAS 2020	N5453649 795	2545 36	24979 5	9/26/2018	
BATLAS 2020	N4193950 096	2419 39	25009 6	7/27/2016	Pipistrellus pygmaeus, Nyctalus leisleri, Myotis spp.
BATLAS 2020	N5010550 681	2501 05	25068 1	6/16/2015	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri, Myotis daubentonii
BATLAS 2020	N5010550 681	2501 05	25068 1	6/16/2015	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri, Myotis daubentonii
BATLAS 2020	N3887251 054	2388 72	25105 4	7/27/2016	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri, Myotis daubentonii
BATLAS 2020	N4074451 303	2407 44	25130 3	7/27/2016	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus
BATLAS 2020	N4716651 306	2471 66	25130 6	5/23/2017	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri
National Biodiversity Data Centre Bat Records	N529479	2529 00	24790 0	5/18/2014	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus
National Biodiversity Data Centre	N373342	2373 00	23420 0	7/27/2013	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus



Bat Records					
National Biodiversity Data Centre Bat Records	N375342	237500	234200	7/27/2013	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus
National Biodiversity Data Centre Bat Records	N375342	237500	234200	8/20/2013	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri
National Biodiversity Data Centre Bat Records	N376343	237600	234300	8/20/2013	Plecotus auritus, Pipistrellus pygmaeus, Nyctalus leisleri, Pipistrellus pipistrellus (45kHz)
National Biodiversity Data Centre Bat Records	N414466	241400	246600	4/4/2024	Unidentified bat
National Biodiversity Data Centre Bat Records	N467468	246700	246800	4/27/2024	Unidentified bat
National Biodiversity Data Centre Bat Records	N469468	246900	246800	1/10/2024	Unidentified bat
Wildlife Surveys Ireland Surveys	N3704049149	237040	249149	8/3/2023	Nyctalus leisleri
Wildlife Surveys Ireland Surveys	N4132451752	241324	251752	5/15/2025	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri