A bat and otter assessment of the tower house on the island in Ballynahinch, Clifden, Co Galway

By Donna Mullen and Brian Keeley

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For Yelsea Ltd

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Summary

5 soprano pipistrelle roosts were found within the buildings on the island, 3 on the castle and two within fascia on the attached building. The main roost, with at least 10 bats was above the window within the small turret within the tower to the west. This roost is on the inside of the tower. Both other tower roosts were within stonework to the north and west of the tower with individual bats. Two individual bats entered the fascia on the roofed section of the building at two points. Natterer's bats and Daubenton's bats were also seen but were not roosting in the building on this occasion. There was much soprano pipistrelle activity and social calling within and around the building during the night.

3 species of bat were observed during the night feeding around the castle and along the waterway beside the castle. Daubenton's and Natterer's bats were seen around the castle and to the south of the island.

Otter data is included but are not the subject of the derogation application.

Bat species found roosting

Soprano pipistrelle	*Pipistrellus pygmaeus*

Bat species found feeding and commuting on the site

Soprano pipistrelle	*Pipistrellus pygmaeus*
Daubenton's bat	*Myotis daubentonii*
Natterer's bat	*Myotis nattereri*

Recommendations

(1) A derogation licence must be sought from NPWS prior to any work commencing. As part of this derogation process the alternatives (to the destruction of the roost) considered and rejected must be documented. If a roof is installed on the building a system availing of louvres must be designed for at least two windows to facilitate bat

access. The addition of any glass structures within the open windows may restrict bat access in addition to being a collision risk for birds. The introduction of louvres may also reduce accessibility but would create greater opportunities for access for bats. This would still constitute interference with access to a roost, and in the absence of a derogation issued by NPWS, would be a criminal offence .

Bat access must also be facilitated through the use of at least 4 access points at slate level.

(2) No work can take place on the building from May to September as bats may be breeding. All timber treatment used within the building must be bat friendly. Bat-friendly roof membrane will be used in the roofing (no Tyvek), such as Siga Majcoat 350 bat-safe breathable roof membrane or equivalent

(3) Crevices must be checked with a torch or fibrescope before any disturbance. The roost areas must be retained and work around them supervised by an ecologist.

(4) Monitoring of bat populations both during construction and post construction will take place.

Introduction

Objective of the proposed works-

The reinstatement of a roof on the tower and weatherproofing of windows to protect the exposed masonry, internal eighteenth-century plasterwork fragments and the historic graffiti which are exposed to weather.

The proposed works entail the reinstatement of a double-pitch, natural slate roof, the installation of a steel staircase internally and glazed windows and door to window and door opes and wooden vent to two windows on the north elevation (provision for bat entry and egress). The aim of the intervention is twofold: to arrest deterioration of the masonry, plasterwork and important historic graffiti within the structure of the tower house, preserving its contribution to the Romantic setting and archaeological integrity and to enable enjoyment and interaction of visitors with the structure in a manner that is safe for both visitors and the building.

Name, qualifications and relevant experience of scientific staff, including trainees, (e.g. ecologist) involved in the preparation of the application and those responsible for carrying out the proposed activity.

Donna Mullen and Brian Keeley prepared the application. See qualifications below.

If this application is for the carrying out of surveys that may cause disturbance, qualifications of all involved must be provided and trainees must be clearly identified.

Donna Mullen, Brian Keeley and Ferdia Keeley will be working on this project. There will be no trainees present.

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) in Zool

Director

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

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

Director
Donna Mullen is a founder member of Bat Conservation Ireland and the Irish Environmental Network. She was involved in drawing up the guidelines for the Heritage Council on bats and traditional farm buildings and has worked on providing new roosts and adapting old roosts to facilitate bats. This work includes surveying, advising architects, working with derogations and monitoring. She has been a Trustee of Eurobats for 6 years. 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).

Background to proposed activity including location, ownership, type of and need for the proposed activity, planning history, policy context, zoning in relevant Development plan (or equivalent), etc.

Ballynahinch Tower House located on a small island, Castle Island, in the western part of Ballynahinch Lake in Connemara, County Galway (Figure 3.1). The nearest settlement of size is the town of Clifden which is c. 10km west of the lake. The village of Recess is located c. 10km east of the lake. In the vicinity there is a large country house, located near the southern end of Ballynahinch Lake, which is known as Ballynahinch Castle. As a monument and historic site in its own right, the structures on the island form a well-preserved ruin. While the walls of the tower house are relatively intact the structure is roofless. It has undergone modification, such as when the fishing lodge structure was attached to it (probably in the late eighteenth or very early nineteenth century). Exposure to the elements over the last 150 years has led to some deterioration of the site. The site is a Recorded Monument, afforded protection under the National Monuments Act. Conservation and stabilisation works were undertaken approximately ten years ago (under licence from the National Monuments Service and in accordance with a grant of planning permission from Galway County Council, and in 2023 works to re-instate a natural slate pitched roof and stone floor to the single storey 19th Century lodge were completed.

The tower house sits at the heart of the Ballynahinch Castle Country House demesne/ attendant grounds. The tower house and the island on which it stands is listed on the Site and Monuments Record and on the Record of Monuments and Places (Ref: GA036-00101 tower house, GA036-00102 Crannóg) and is therefore protected under the Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023. The tower house also lies within the much larger attendant grounds/ demesne setting (designed landscape) of Ballynahinch Castle Country House which is a Protected structure (RPS: 620)

Ballynahinch Castle (RMP GA0036-001001) is a ruined tower house first constructed in mid-16th century (before 1574 AD The castle is said to have been built by Donal O'Flaherty, known as Donal an Chogaidh or 'Donal of the battles', in the first half of the 16th century. In or about the year 1546 Donal married Grace O'Malley or Granuaile, the famous pirate queen of Connacht, the marriage uniting the powerful O'Flaherty's of Iar Connacht and O'Malley's of Murrisk. Donal was Tánaiste, the heir apparent of the O'Flaherty clan, and when he died Grace took over as head of the family. In 1584 Queen Elizabeth appointed Murrough na dTuadh O'Flaherty as head of the family causing a rift in the clan and resulting in the capture of Ballynahicnh Castle by said Murrough na nTuadh O'Flaherty. Grace O'Malley's sons, Owen and Murrough, recaptured the castle in the same year. A couple of years later Owen and eighteen of his followers were captured and killed at Ballynahinch by the local lieutenant Captain John Bingham and five hundred of his men. Owen's brother Murrough is said to have retained possession of the castle until the early 17th century.

A branch of the Anglo-Norman family of Martin, one of the tribes of Galway, was granted the O'Flaherty lands in Connemara in the mid-17th century, and the Westport Estate Papers record the sale of over 27,000 acres in the baronies of Moycullen and Ballynahinch to Richard Martin in 1699. The first house at Ballynahinch was built as an inn in the mid18th century and the addition of the industrial building containing kilns on the north elevation may have been associated with this phase of development. The location of kilns on a lake island is very unorthodox and inconvenient for any industrial process and begs the question if the buildings were used for the drying of grain for the manufacture of illicit alcohol. The tower house appears then to have received attention by 'Humanity Dick' Martin, when he moved there in 1813. The tower house was enhanced with internal decorative plasterwork in the form of cornices and a staircase and apparently used as a folly. These later modifications to the building, although largely of 18th century date, must also be regarded as representing a significant element of the historic fabric of the building. Later owners (The Martin's Connemara estate was acquired in 1852 by the Law Life Assurance Society 1852, the Berridge family in 1872, Indian Prince Ranjitsinhji in 1926, Frederic C. McCormack in 1933, the Irish Tourist Board in 1946 Ballynahinch 1952 onwards in private ownership) appear not to have carried out any changes to the tower house.

Full details of proposed activity to be covered by the derogation (including a site plan). The site may be inspected by an NPWS representative, so the details given should clearly reflect the extent of the project. This information will be used to compare site conditions with the Method Statement.

Proposed works

Planning ref 26/60226.

The project includes the proposed reinstatement of a simple gabled stone roof and glazed screens, including the insertion of a modest viewing gallery to the late Medieval Tower House on Ballynahinch Lake island.

The proposed roof intervention is designed to protect the historic fabric from further degradation while maintaining architectural integrity and interpretive clarity. The proposal is reversible, discernible, and grounded in comparative analysis of similar structures.

The reinstated roof and safe viewing gallery will stabilise the structure for continued guided interpretation, enhancing visitors' understanding of the Tower House and its wider landscape context. The works will support sustainable, high-quality heritage tourism offered by Ballynahinch Castle Hotel and preserve the monument's historic dignity while allowing safe, meaningful public access.

The description of the proposed works is as follows, with full details and drawings included in the accompanying documents prepared by the project architects, de Blacam and Meagher:

Reinstatement of a Simple Gabled Stone Roof

> Installation of a simple gabled stone roof. Ridge to feature a rebated saddleback form, informed by comparative regional examples. Roof covering in diminishing-course Liscannor slates (Cliffs of Moher/Liscannor), selected for durability and visual compatibility. Structure supported on a self-supporting oak truss system, incorporating non-invasive, reversible bearings. No masonry build-up or intrusive works. No reconstruction of parapets or battlements. All interventions will remain discernible, reversible, and grounded in comparative analysis of analogous tower houses.

Glazed Screens

> The proposed reinstatement of steel glazed screens to the existing openings to the late Medieval Tower House involves introducing slim-profile glazing within the existing masonry reveal, ensuring minimal physical intervention and clear visual distinction between original and new elements.

Insertion of a Viewing Gallery

A lightweight, reversible viewing gallery will be inserted internally following the footprint of earlier vertical access within the tower house, allowing safe public appreciation of interior fabric and spatial qualities. Minimal load transfer; full reversibility. No replacement, concealment, or removal of medieval fabric.

Following receipt of approval to carry out the works (planning permission) and issue of the derogation licence the Contractor will review of all ecological Information available including the presence of potential roost features (PRFs) such as stone crevices, joints, voids, wall-head gaps.

All works will be undertaken under the supervision of the licence holder.

Site set-up

Scaffolding is to be erected without obstructing bat access points. Temporary weather protection installed without sealing openings and Safe storage for materials established.

No external night lighting will be permitted, all essential lighting will be low-level, warm spectrum.

Roof Installation Methodology

Installation of structural elements will involve the Installation new oak arch-truss rafters as per conservation design, using reversible, non-invasive bearings; no enlarging of historic masonry pockets. All voids and crevices that may serve as bat access points will be retained.

The Installation of a breathable roofing membrane will be installed without covering or sealing wall-head crevices and to avoid damage to the medieval stonework.

Stone Slate Installation will be in diminishing-course stone slates from eaves upward. The ridge stones will be fitted using traditional reversible techniques and lead flashings installed with minimal impact ensuring no oversealing of voids or crevices.

Following the works a final roof inspection will be carried out to ensure no bat access points have been blocked. Ventilation pathways will remain open ensuring no unnecessary mortaring or pointing occurred.

Window Installation

No invasive works are proposed. The preparation of openings will be carried out by hand.

No rebuilding, pointing, or sealing is proposed unless separately approved as essential conservation repair to preserve any existing bat access points. The new frames will be installed with reversible fixings, applying minimal, narrow sealant beads avoiding structural joint filling, to retain the visibility of historic stone features such as lintels, cills and internal splays.

Waste Management

Due to the off site procurement of materials waste will be kept to a minimum. Any waste produced due to the works will be removed by lowering manually to the ground.

No waste is to be stored on the island overnight.

All waste is to be transferred to the mainland daily and stored within the designated compound[1].

Protection of Heritage Fabric and Avoidance of Ecological Impacts

No pointing or mortar replacement is proposed in this phase of works, including no repointing to roof, gables, wall-heads, or windows. No infilling of joints functioning as bat access points.

Louvre openings will be introduced in the window openings to provide unrestricted access for bats to the roosts.

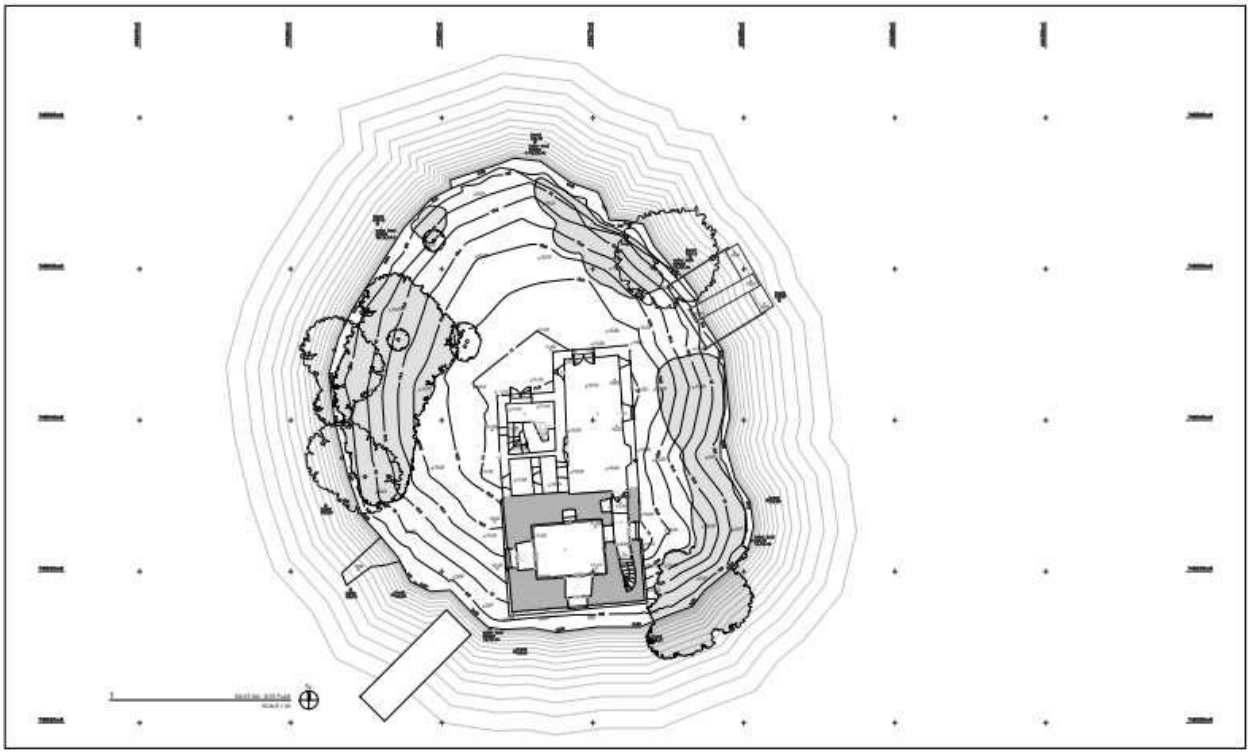
The roof slates will incorporate gaps and bat access points to facilitate bat access and egress as at present.

Bat-friendly roof membrane will be used in the roofing (no Tyvek), such as Siga Majcoat 350 bat-safe breathable roof membrane or equivalent.

Summary

This detailed sequential methodology will ensure that the proposed works are sequential and clearly managed conservation-led, fully compliant with bat protection legislation, reversible and minimally invasive and protective of heritage and biodiversity

No works will occur that could harm bats, block roost entrances, or compromise the historic integrity of the structure. The aim of the project is to safeguard both medieval heritage and ecological value, ensuring the Tower House remains protected, legible, and meaningful for future generations


PRE-PLANNING
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Preliminary survey details

Desktop survey of the existing environment

A bat and otter survey took place in Sept 2020, undertaken by Eire Ecology

Results from the Eire Ecology Survey 2020

Ballynahinch Castle Hotel, September 2020 This report details the findings of a bat and otter survey completed as part of a planning application at Ballynahinch Castle Tower House, Recorded Monuments GA036-00101 - Tower House located on GA036-00102 - Crannog in Ballynahinch Townland. The results of the surveys presented above show low bat activity on this site, with only one distant call recorded and no bats observed flying. The buildings on site are unsuitable for hosting large roosts with some potential within small wall crevices. Impacts on bats have been assessed with reference to the Irish Wildlife Manual Vol 25. The overall impact on bats is low due to the lack of evidence of roosting bats. The site revealed low potential for otter holts and no evidence of otter spraints or footprints were found. The otters may walk over this site on occasion however it has no potential as a breeding site.

Results from Bat Conservation Ireland

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 30 Sep 2025					
Search parameters: Roosts Transects Ad-hoc observation sites with observations of all species within 1000m of L7629948015					
Roosts					
Name	Grid reference	Grid ref	Grid ref	Address	Species observed

		easting	northing		
Emalaghdauroe Bridge	L7582648585	75826	248585	Emalaghdauroe Bridge	Myotis daubentonii
Transects					
Name	Grid reference start	Grid ref easting start	Grid ref northing start	Species observed	
Ad-hoc observations					
Survey	Grid reference	Grid ref easting	Grid ref northing	Date	Species observed
BATLAS 2010	L7551347967	75513	247967	5/26/2009	Unidentified bat,Pipistrellus pygmaeus,Myotis spp.,Myotis natterreri,Plecotus auritus

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

Status of the species in the local/regional area

The overall trend for this species is increasing. The main maternity roost for soprano pipistrelles in this area is in a low ESB building, close to the hotel. Soprano pipistrelles are also using the hotel attics to roost in, in small numbers.

Objective of survey

To locate bat roosts, feeding and commuting routes, and examine the impact on them of any proposed development.

Field Survey of the existing Environment

Habitat classification and descriptions (Fossitt 2000)

WS1 Scrub

BL3 Buildings and artificial surfaces

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

Yellow circle – site

The Tower house is on an island within Ballynahinch lake, surrounded by forestry and farmland bordering the lake on all sides.

Date: 18 Sept 2025

Sunrise time: 7.19

Sunset time: 19.47

Lux Levels -0 on site

Temperature and weather conditions Temperature during the evening survey was 16°C, with a temperature of 13°C during the morning survey .Light rain showers at dawn.

Complexity of lands and ability to cover ground during surveys

All areas were accessible

Grid reference- L 76299 48015

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.

(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.

The otter survey was undertaken in early and late autumn 2025. This is a time when vegetation has begun to die back but has not fully reached the winter exposure levels. The survey was undertaken first at a time of very high-water levels following a period of heavy rain and then after these floods. Surveys are best undertaken at a dry period to ensure that spraints and paw prints in mud are not washed away. At low water levels, otter holts may also become more obvious along river banks and shorelines. Given the size of the island upon which the castle stands and given the nature of the terrain, there is no possibility that a holt could be overlooked. Equally, at the harbour area, there is no possibility that a holt could be overlooked. Therefore, the survey was not impeded by the high-water levels or the removal of otter signs by the water. It is likely that the water removed otter spraints, but this has had no bearing on the evaluation of the site for holts.

Methodology

Bats

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)
- Two song meter mini static bat detectors with Kaleidoscope sound analysis software
- One thermal imager per surveyor
- 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) CIEEM Bat Mitigation Guidelines 2023

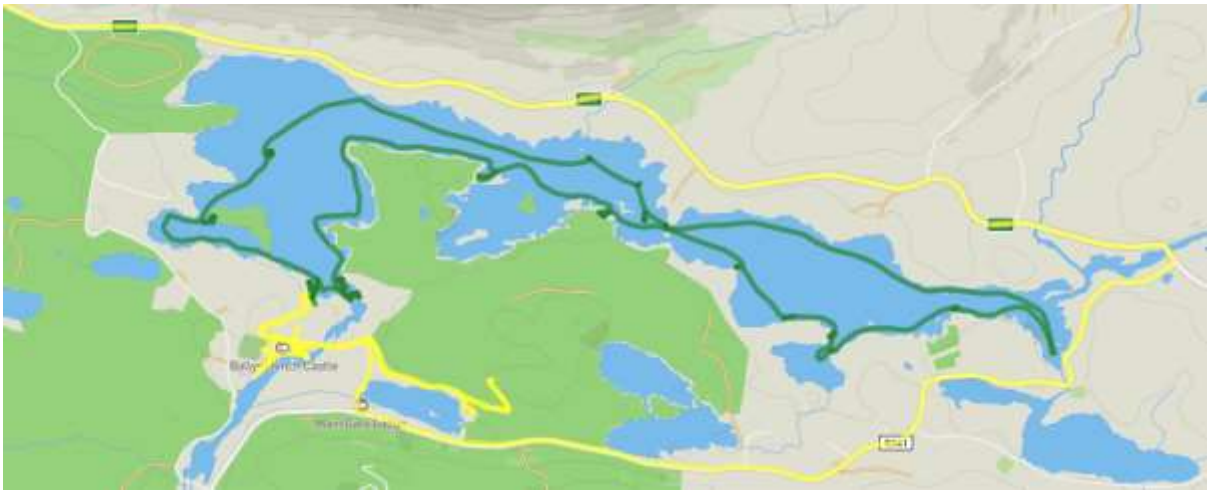
Both emergence and return surveys are necessary on most occasions and go beyond these guidelines to ensure dawn roosts are located.

Otters

Brian Keeley and Donna Mullen carried out this survey with the aid of Martin O'Malley, an employee of Ballynahinch Castle Hotel. The survey involved examination of the river and lakeshore at night with the aid of thermal imagers (Pulsar Helion 2 and FLIR) and high intensity torches on September 17th and October 9th, 2025, and an examination of the departure quay and island on September 18th and 19th and October 10th, 2025.

Further to this, the entire lake was examined from a boat on October 10th, 2025, searching for otter holts, otter slides, otter spraints and feeding signs.

A motion-activated camera was installed on the quayside on the night of September 19th and October 8th, 2025, and on the island on the night of September 18th, 2025, to record any otter activity.



Area covered within the lake for evidence of otters plotted with GPS

Access to the shoreline was greatly increased by surveying from a boat

Bats

Results

Assessment of buildings as potential roosts with photos

The tower house has a roofed section with fascia which is suitable for bat usage. The tower is exposed, with several cracks and crevices suitable for roosting bats. The building has high bat roost potential.

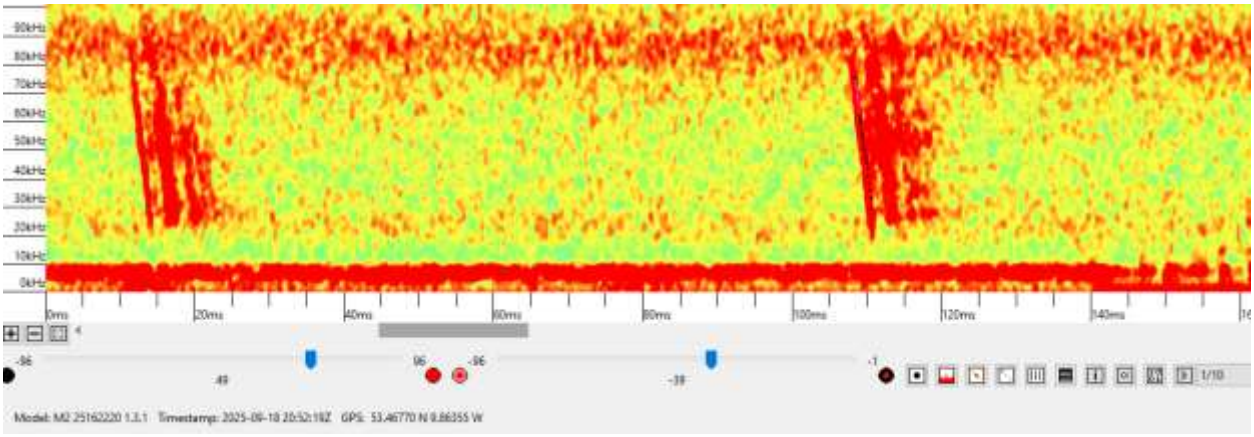
Placement of static bat detectors

Yellow circles – Placement of static detectors overnight

Emergence/re-entry survey

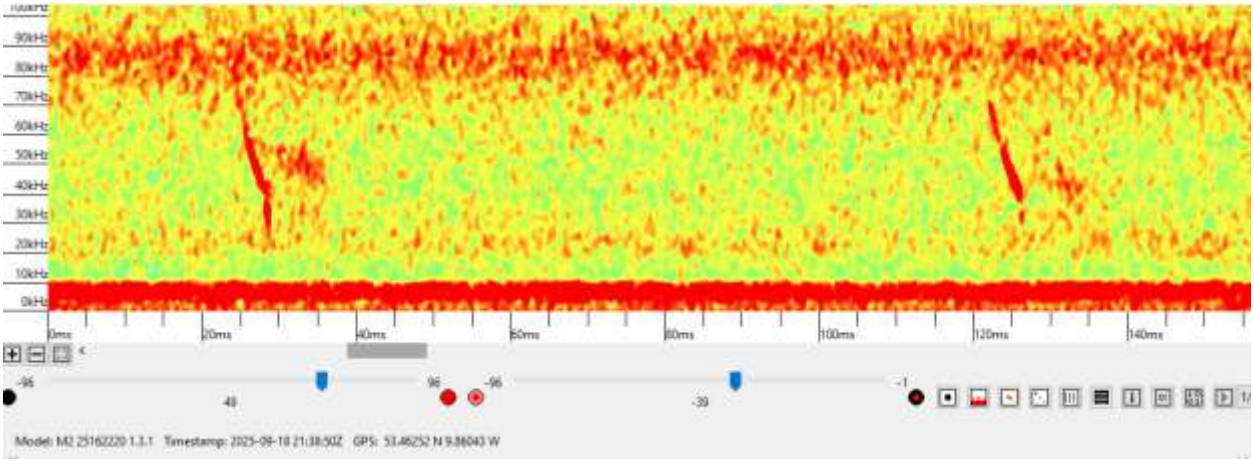
The survey commenced at 19.00 on 18 Sept with two surveyors working overnight. Two static detectors were placed overnight, one by the chimney in the centre of the tower, and one outside on the window ledge to the east. At 19.59 a soprano pipistrelle was seen near the tower. It seemed to exit from a point inside the tower. It moved outside, circling and then flying north. A second soprano pipistrelle was seen exiting from stonework on the western side of the tower. At 20.11 a soprano pipistrelle was seen over the tower. It was joined by a second soprano pipistrelle, and a third flew around the edge of the tower house, feeding low along the vegetation and social calling. It flew around to the north at the front of the roofed building, social calling and feeding until 20.31.

At 20.52 there was a myotis(Natterer's bat) seen in the south of the tower house, and a soprano pipistrelle on the lake.



Natterer's bat – note the echoes bouncing off the stonework

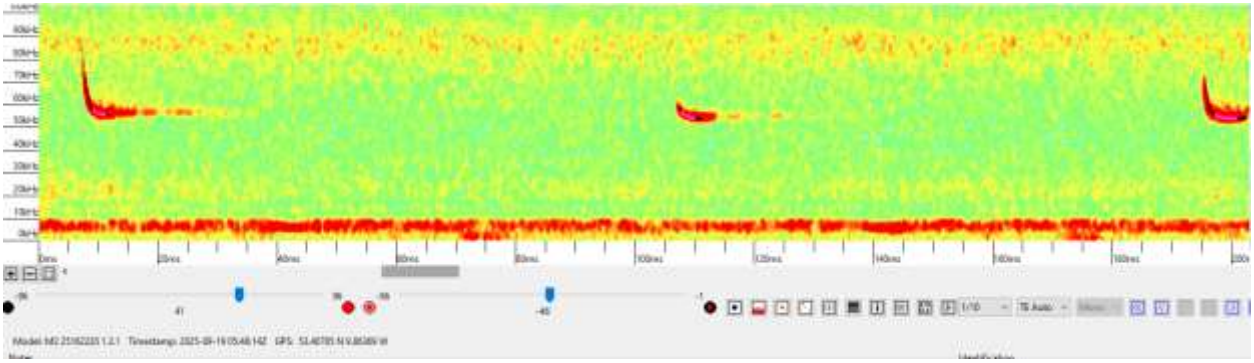
At 21.37 a soprano pipistrelle was seen entering the tower house above the window on the east side of the tower house. A Daubenton's bat was seen at this time over the water.



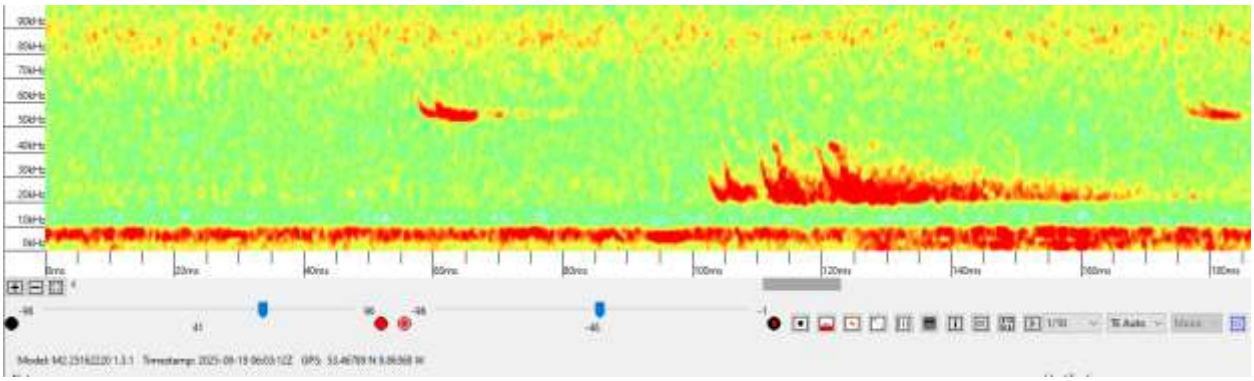
Daubenton's bat.

At 5.52 a Daubenton's bat began circling above the window to the west of the building. It then moved offsite. A myotis bat was seen moving inside the castle, then out again at 6.02. Soprano pipistrelles and Daubenton's bats were seen circling outside the castle at 6.05, moving out to the lake to feed and then back. At 6.08, 6 soprano pipistrelles began

to swarm at the window inside the small tower within the castle to the west. They entered the roost just above the window. A Daubenton's bat was also seen to the west of the castle, and soprano pipistrelles were seen by the southern wall. Three more soprano pipistrelles began to swarm at the window within the tower, and another soprano pipistrelle began to swarm at the apex of the house and entered it. A second soprano pipistrelle entered the fascia beside it, and another soprano pipistrelle entered the stonework at the centre of the building at 7.04.



Soprano pipistrelle 5.48

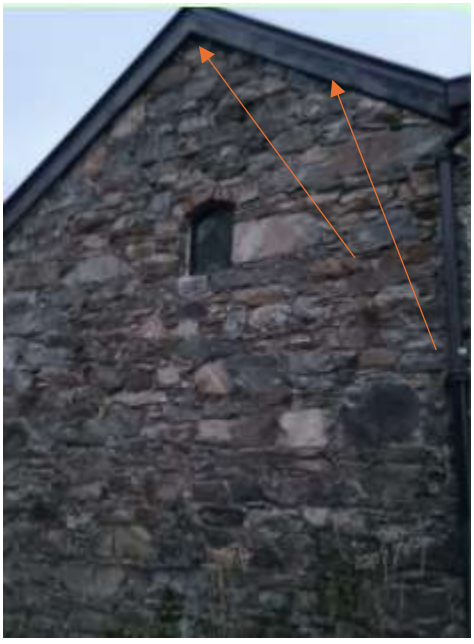


Soprano pipistrelle social calling

Photos of Roosts

Red arrow – Main roost area within building

Soprano pipistrelle roost in brickwork



Red arrow roost points at apex and fascia

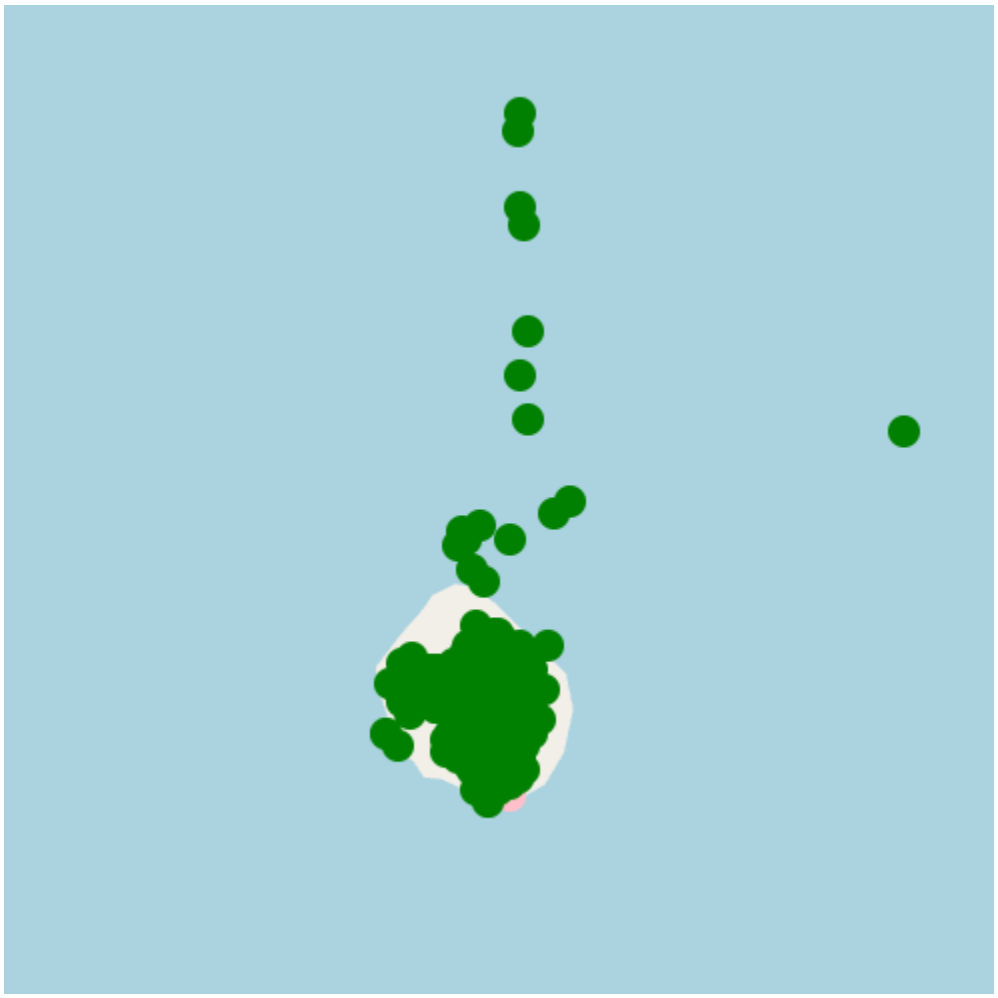
Soprano pipistrelle roost in stonework

Map of roost areas

Red and yellow circles – Roost areas

Red circle – main roost at least 10 bats roosting here.

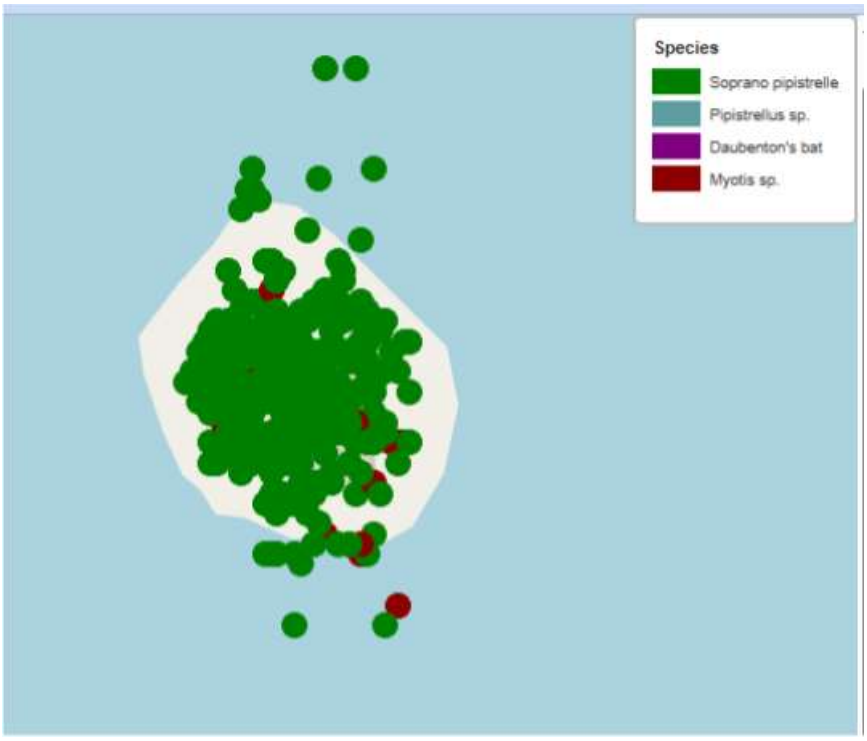
Batlogger data – surveyor 1



Species

- Common pipistrelle
- Soprano pipistrelle
- Leisler's bat
- Daubenton's bat
- Natterer's bat

Surveyor 2

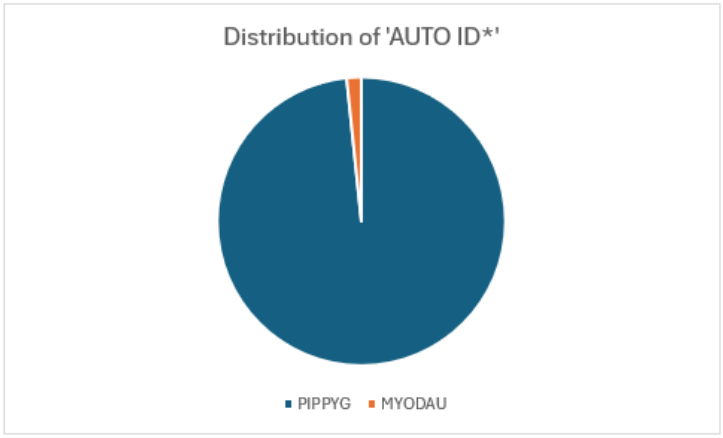


Data once soprano pipistrelle signals have been removed

Data from remote static Songmeter Mini Bat detector placed within the chimney inside the Tower House.

Distribution of 'AUTO ID'*

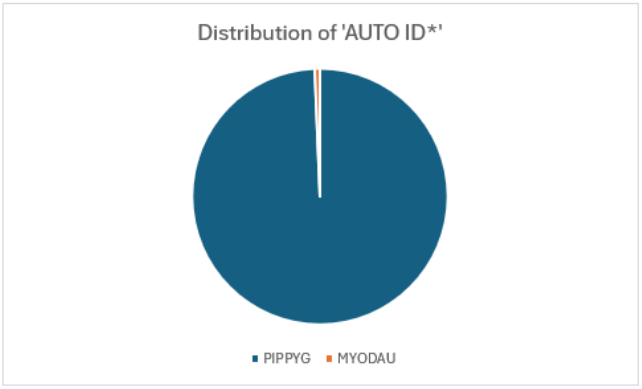
AUTO ID*	Count of AUTO ID*
PIPPYG	482
MYODAU	8
Grand Total	**490**



Data from remote static song meter mini bat detector placed on the windowsill of the building to the east.

Distribution of 'AUTO ID'*

AUTO ID*	Count of AUTO ID*
PIPPYG	457
MYODAU	3
Grand Total	**460**



Results of survey and population assessment of roosts.

5 soprano pipistrelle roosts were found within the buildings on the island, 3 on the castle and two within fascia on the attached building. The main roost, with at least 10 bats was above the window within the small turret within the tower to the west. This roost is on the inside of the tower. Both other tower roosts were within stonework to the north and west of the tower with individual bats. Two individual bats entered the fascia on the roofed section of the building at two points. Natterer's bats and Daubenton's bats were also seen but were not roosting in the building on this occasion. There was much soprano pipistrelle activity and social calling within and around the building during the night.

3 species of bat were observed during the night feeding around the castle and along the waterway beside the castle. Daubenton's and Natterer's bats were seen around the castle and to the south of the island.

Bat species found roosting

Soprano pipistrelle	*Pipistrellus pygmaeus*

Bat species found feeding and commuting on the site

Soprano pipistrelle	*Pipistrellus pygmaeus*
Daubenton's bat	*Myotis daubentonii*
Natterer's bat	*Myotis nattereri*

Otters

No otter holts were noted either on the island, on the Long Island or along any point of the lake during the examination on October 10th, 2025. Equally, no otter evidence was found on the island on September 18th or October 10th, 2025. There was a fresh mink spraint in the garderobe of the tower on October 10th, and this was the only aquatic mustelid evidence recorded (see following page).

Mink spraints in the tower upstairs in the garderobe October 10th, 2025 (above) and pine marten scats on bridge (below)

A pine marten scat was also noted on a bridge over the river closer to the hotel on October 10th (see images on previous page).

While there were no signs that otters are in residency, there was clear evidence that otters feed at the hotel and within the river and lake as an otter was observed on September 18th within the river close to the hotel. This otter was present for approximately 15 minutes within the one area (see below).

Otter feeding within the river close to the hotel September 17th, 2025

Camera records of otters

The camera did not record otter presence on the island or on the quay. The window of observation for the camera was low (3 nights in total), and it would be expected that only if an animal were very close or resident would it be recorded in such a short survey period (or exceptionally through fortunate timing). The results confirm that there was no otter activity at these locations during this period and that otters were not resident immediately around the camera at this time. It does not exclude the possibility that

otters visit these locations regularly, but it adds to the field survey evaluation that otter holts are absent from the immediate area. All that was recorded was a variety of aquatic bird species including a night fishing heron.

The main species recorded by the camera was a grey heron during the night. Other birds included mallards and a moorhen.

Reason for Derogation- Where the reason is for “other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment”,

A derogation licence is required as reroofing and the addition of windows may affect bat access to the building. The work is necessary to protect the internal walls of the building, and the historic graffiti – see attached report.

Absence of Alternative Solutions

A do- nothing approach would lead to further degradation of the walls

Re-roofing, repointing and adding windows to seal the building would exclude the bats and could result in entombment.

Potential impacts

Predicted Impacts Before Mitigation

(1) Loss of roosting habitat. Removal of the roosts through exclusion will have a significant long-term negative impact on individual bats.

There are no predicted Impacts upon otters from any of the proposed modifications within the site or from any operations required for the restoration and alteration of the tower.

Mitigation and recommendations

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

Mitigation by remedy

(1) A derogation licence must be sought from NPWS prior to any work commencing. As part of this derogation process the alternatives (to the destruction of the roost) considered and rejected must be documented. If a roof is installed on the building, a system availing of louvres must be designed for at least two windows to facilitate bat access. The addition of any glass structures within the open windows may restrict bat access in addition to being a collision risk for birds. The introduction of louvres may also reduce accessibility but would create greater opportunities for access for bats. This would still constitute interference with access to a roost, and in the absence of a derogation issued by NPWS, would be a criminal offence. Bat access must also be facilitated through the use of at least 4 access points at slate level.

(2) No work can take place on the building from May to September as bats may be breeding. All timber treatment used within the building must be bat friendly. Bat-friendly roof membrane will be used in the roofing (no Tyvek), such as Siga Majcoat 350 bat-safe breathable roof membrane or equivalent.

(3) Crevices must be checked with a torch or fibrescope before any disturbance . The roost areas must be retained and work around them supervised by an ecologist.

4) Monitoring of bat populations both during construction and post construction will take place.

Impacts after mitigation

(1) Loss of roosting habitat. Bat access will be facilitated by the use of louvered windows and access gaps along the roof. No repointing will take place on any stonework, and no lighting is proposed for the site. However, bat access to the interior of the tower house will be reduced with the addition of a roof and windows. The mitigation measures outlined above will reduce the impact to a moderate long term negative impact on individual bats.

Impact of a Derogation on Conservation Status

Please summarise the possible impacts on the population of the species that is subject to this application, taking into account all the mitigation and/or compensation measures that are to be undertaken. Evidence that such mitigation has been successful elsewhere should be provided where relevant. Mitigation measures being relied upon must ensure that the derogation 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.

Soprano pipistrelle populations have increased steadily since 2019(Article 17 Report, NPWS 2025). A previous survey on this site found no bats roosting, and improvements to part of the tower house resulted in two additional roosts in the new area.

Soprano pipistrelles may be impacted by restricting the access into their roost areas; however, access will be retained through a system of louvered windows and gaps in slates. These have worked well in buildings in Golashane Nature reserve, where bat access is retained. In addition, water ingress will be prevented, which will prevent further deterioration of the building.

No repointing will take place in the Tower House, so there is no possibility of bat entombment.

Monitoring the impacts of the derogations

Applicants must include details of how they propose to verify whether the derogations have been implemented correctly and whether they achieved their objective, using scientifically based evidence, and, if necessary, how the applicant will take corrective measures where required.

Applicants should provide details of proposed reports to be submitted to the NPWS including the results of monitoring.

(1)Monitoring of the construction work

Monitoring of the work will take place as construction work proceeds under derogation. The wildlife ranger will be informed before work proceeds. Cracks and crevices will be inspected with a fibrescope if any work is taking place nearby.

(2) Post construction monitoring

A summer survey will take place after construction takes place. If bats appear to be excluded, additional openings will be inserted into the building.

Derogation reports, returns forms and monitoring reports will all be submitted to NPWS.

Appendices

Appendix 1

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*

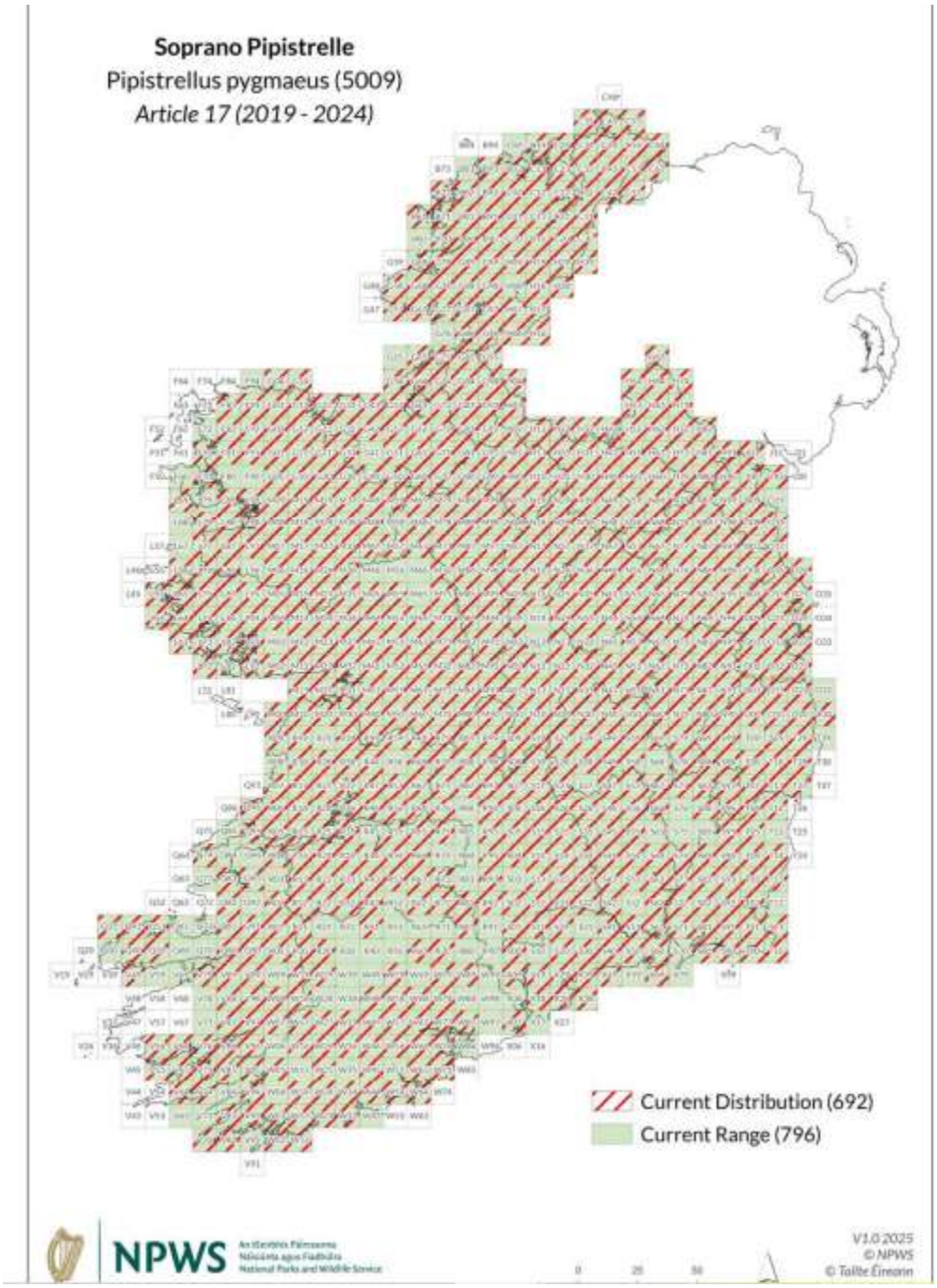
Ireland's two smallest bat species, and also the commonest, the common and soprano pipistrelles are the bats most likely to be seen flying around soon after dusk in both urban and rural areas. Both have a rapid, twisting flight as they pursue tiny prey of midges, mosquitoes and small moths. A single 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 2025 Soprano pipistrelle



A total of 12,120 distribution records were collated for this species between 2012 and 2023. These records translated to 692 10x10 km grid cells. Using the range tool, with gap closure set to two 10x10 km grid cells, an additional 104 grid cells were incorporated giving a total range of 796

cells or 79,600 km2 . This is thought to provide a slight underrepresentation of the true extent of the species' distribution in Ireland. The range of the Soprano Pipistrelle bat in 2019, based on data from 2007-2018, was calculated as 79,900 km2 , almost exactly the same as has been calculated for the current period. The minor discrepancy is considered to be a reflection of the data period used and in particular the absence now of the significant body of data collected for BATLAS 2010 which fed into the 2019 report, rather than a genuine decrease. The short-term and long-term trends are considered to be stable. The Favourable Reference Range is retained from the previous reporting period. It is considered to be large enough to allow the long-term survival of the species.

This analysis suggests that there is a Soprano Pipistrelle population of approximately 1.2-2.7 million in Republic of Ireland. Trends for Soprano Pipistrelle have shown a significant increase since the inception of the Car-based Bat Monitoring Scheme in 2003. The short-term trend (2011-2023) shows an increase of 221.6%, equivalent to an annual increase of 7.62%. The longer-term trend covering the full length of the Car Transect survey (2003-2023) has been estimated at 278.5%, an annual rate of increase of 6.88% (Roche & Langton, 2024)

The population of this species has been increasing significantly and steadily. On this basis and given the widespread distribution and very large population present in the country, no threats or pressures are considered to be significant at this point.

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

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

Legislation

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

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

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

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

The Bern and Bonn Conventions:

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

1.3.1 The Bern Convention:

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

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

a) all forms of deliberate capture and keeping and deliberate killing;

b) the deliberate damage to or destruction of breeding or resting sites;

c) the deliberate disturbance of wild fauna, particularly during the period of breeding, rearing and hibernation, insofar as disturbance would be significant in relation to the objectives of this Convention; ...

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

The EUROBATS Agreement:

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

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

2. Each Party shall identify those sites within its own area of jurisdiction which are important for the conservation status, including for the shelter and protection, of bats. It

shall, taking into account as necessary economic and social considerations, protect such sites from damage or disturbance. In addition, each Party shall endeavour to identify and protect important feeding areas for bats from damage or disturbance."

The Agreement covers all European bat species.

Contact Details: [redacted].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 BCIreland. Brian has been vaccinated against Rabies and is licensed to disturb roosts for the purpose of survey.

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

Director

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

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

Field ecologist

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

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

Legal support

Saoirse has a bachelor’s degree in law and business and has a particular interest in European Law and Environmental Regulation. She helps with the preparation of environmental reports and contributes to applications for derogation licences. Her understanding of legal frameworks – particularly around EU and constitutional environmental legislation – has been really useful in ensuring our work meets regulatory

requirements. She also brings strong research, analytical and communication skills to the team. Saoirse has also trained with Bat Conservation Ireland and frequently leads bat walks. Saoirse is rabies vaccinated.

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 II-Definition of Effects – EPA 2017

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 III– Bat Data

Surveyor 1 Batlogger

File Help

	IN FILE	OUT FILE FS	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID	DATE	TIME
1	22200104.wav	22200104_00000_000.wav	MYODAU	9	9	1.000000		2025-09-18	21:38:22
2	22200105.wav	22200105_00000_000.wav	MYODAU	9	8	0.889000		2025-09-18	21:38:50
3	22200106.wav	22200106_00000_000.wav	MYODAU	8	7	0.875000		2025-09-18	21:39:00
4	22200103.wav	22200103_00000_000.wav	MYODAU	4	4	1.000000		2025-09-18	21:38:19
5	22200077.wav	22200077_00000_000.wav	MYONAT	6	6	1.000000		2025-09-18	20:52:19
6	22200076.wav	22200076_00000_000.wav	MYONAT	3	3	1.000000	MYONAT	2025-09-18	20:52:07
7	22200137.wav	22200137_00000_000.wav	NYCLEI	5	4	0.800000	Noise	2025-09-19	05:49:05
8	22200046.wav	22200046_00000_000.wav	NoID	2	0	0.000000	PIP	2025-09-18	20:18:18
9	22200156.wav	22200156_00000_000.wav	NoID	8	0	0.000000	PIP	2025-09-19	05:55:28
10	22200165.wav	22200165_00000_000.wav	NoID	2	0	0.000000	MYOTIS	2025-09-19	05:59:13
11	22200195.wav	22200195_00000_000.wav	NoID	6	0	0.000000	PIP	2025-09-19	06:05:27
12	22200385.wav	22200385_00000_000.wav	NoID	2	0	0.000000	PIP	2025-09-19	06:25:49
13	22200405.wav	22200405_00000_000.wav	NoID	12	0	0.000000	MYOTIS	2025-09-19	06:28:10
14	22200002.wav	22200002_00000_000.wav	Noise				PIP	2025-09-18	19:56:25
15	22200003.wav	22200003_00000_000.wav	Noise				PIP	2025-09-18	19:56:33
16	22200007.wav	22200007_00000_000.wav	Noise				Noise	2025-09-18	19:59:15
17	22200008.wav	22200008_00000_000.wav	Noise				Noise	2025-09-18	20:05:45
18	22200009.wav	22200009_00000_000.wav	Noise				Noise	2025-09-18	20:05:58
19	22200010.wav	22200010_00000_000.wav	Noise				Noise	2025-09-18	20:07:14
20	22200000.wav	22200000_00000_000.wav	Noise				Noise	2025-09-18	19:52:35
21	22200001.wav	22200001_00000_000.wav	Noise				Noise	2025-09-18	19:53:47
22	22200012.wav	22200012_00000_000.wav	Noise				Noise	2025-09-18	20:07:53
23	22200014.wav	22200014_00000_000.wav	Noise				Noise	2025-09-18	20:08:15

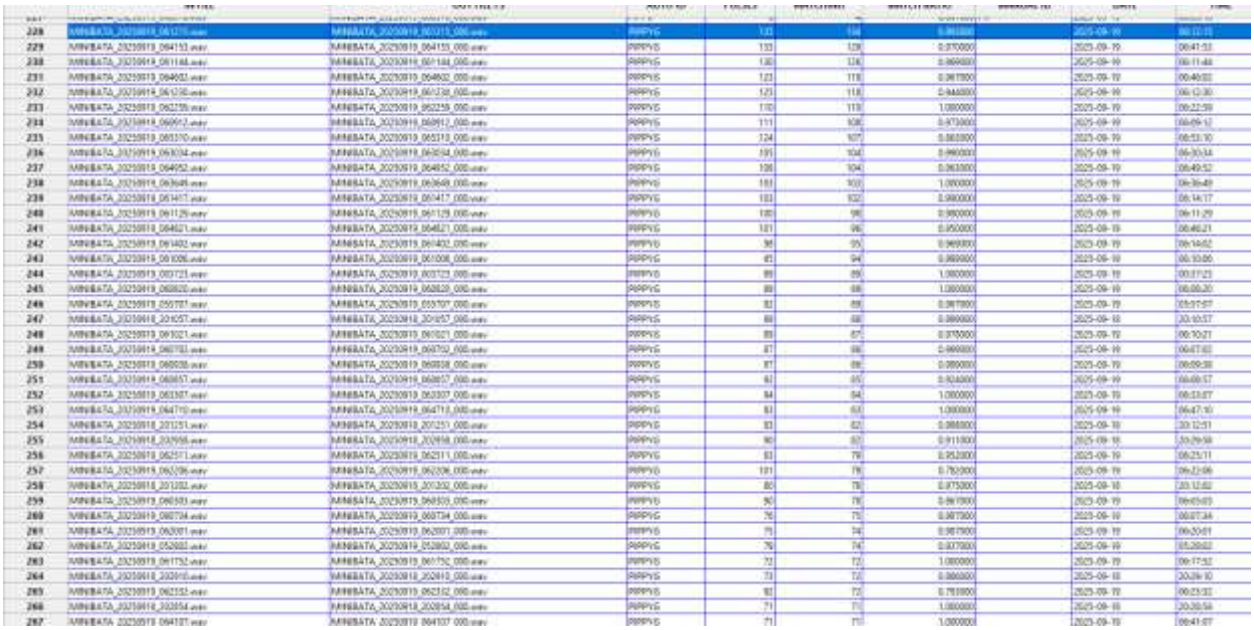
File Help

	IN FILE	OUT FILE FS	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID	DATE	TIME
175	22200619.wav	22200619_00015_000.wav	Noise					2025-09-19	06:59:32
176	22200621.wav	22200621_00015_000.wav	Noise					2025-09-19	06:59:52
177	22200623.wav	22200623_00015_000.wav	Noise					2025-09-19	07:00:16
178	22200624.wav	22200624_00015_000.wav	Noise					2025-09-19	07:00:34
179	22200055.wav	22200055_00000_000.wav	pipnp	3	3	1.000000		2025-09-18	20:25:38
180	22200045.wav	22200045_00000_000.wav	pipnp	9	3	0.333000		2025-09-18	20:18:15
181	22200617.wav	22200617_00000_000.wav	PIPPYG	201	199	0.990000		2025-09-19	06:58:47
182	22200624.wav	22200624_00000_000.wav	PIPPYG	175	172	0.966000		2025-09-19	07:00:19
183	22200618.wav	22200618_00000_000.wav	PIPPYG	164	164	1.000000		2025-09-19	06:59:02
184	22200585.wav	22200585_00000_000.wav	PIPPYG	154	147	0.955000		2025-09-19	06:54:32
185	22200501.wav	22200501_00000_000.wav	PIPPYG	147	146	0.993000		2025-09-19	06:38:40
186	22200619.wav	22200619_00000_000.wav	PIPPYG	144	143	0.993000		2025-09-19	06:59:17
187	22200522.wav	22200522_00000_000.wav	PIPPYG	145	139	0.959000		2025-09-19	06:42:29
188	22200191.wav	22200191_00000_000.wav	PIPPYG	159	137	0.862000		2025-09-19	06:04:49
189	22200543.wav	22200543_00000_000.wav	PIPPYG	143	135	0.944000		2025-09-19	06:45:56
190	22200540.wav	22200540_00000_000.wav	PIPPYG	131	129	0.985000		2025-09-19	06:45:29
191	22200574.wav	22200574_00000_000.wav	PIPPYG	135	126	0.933000		2025-09-19	06:52:13
192	22200521.wav	22200521_00000_000.wav	PIPPYG	126	124	0.984000		2025-09-19	06:42:14
193	22200573.wav	22200573_00000_000.wav	PIPPYG	128	123	0.961000		2025-09-19	06:51:59
194	22200559.wav	22200559_00000_000.wav	PIPPYG	131	123	0.939000		2025-09-19	06:49:10
195	22200548.wav	22200548_00000_000.wav	PIPPYG	135	123	0.911000		2025-09-19	06:47:07
196	22200496.wav	22200496_00000_000.wav	PIPPYG	128	122	0.953000		2025-09-19	06:37:32
197	22200552.wav	22200552_00000_000.wav	PIPPYG	125	120	0.960000		2025-09-19	06:47:57
198	22200553.wav	22200553_00000_000.wav	PIPPYG	126	117	0.929000		2025-09-19	06:48:12
199	22200257.wav	22200257_00000_000.wav	PIPPYG	127	117	0.921000		2025-09-19	06:13:56
200	22200190.wav	22200190_00000_000.wav	PIPPYG	123	116	0.943000		2025-09-19	06:04:34
201	22200187.wav	22200187_00000_000.wav	PIPPYG	117	115	0.983000		2025-09-19	06:04:06
202	22200544.wav	22200544_00000_000.wav	PIPPYG	121	114	0.942000		2025-09-19	06:46:10
203	22200217.wav	22200217_00000_000.wav	PIPPYG	116	113	0.974000		2025-09-19	06:08:36
204	22200586.wav	22200586_00000_000.wav	PIPPYG	116	112	0.966000		2025-09-19	06:54:47
205	22200469.wav	22200469_00000_000.wav	PIPPYG	115	109	0.948000		2025-09-19	06:37:18
206	22200567.wav	22200567_00000_000.wav	PIPPYG	118	109	0.924000		2025-09-19	06:50:29
207	22200569.wav	22200569_00000_000.wav	PIPPYG	119	109	0.916000		2025-09-19	06:50:59
208	22200509.wav	22200509_00000_000.wav	PIPPYG	110	107	0.973000		2025-09-19	06:40:03
209	22200489.wav	22200489_00000_000.wav	PIPPYG	109	106	0.972000		2025-09-19	06:38:08
210	22200562.wav	22200562_00000_000.wav	PIPPYG	113	104	0.920000		2025-09-19	06:48:54
211	22200575.wav	22200575_00000_000.wav	PIPPYG	108	102	0.944000		2025-09-19	06:52:28
212	22200203.wav	22200203_00000_000.wav	PIPPYG	113	102	0.903000		2025-09-19	06:06:18
213	22200561.wav	22200561_00000_000.wav	PIPPYG	103	101	0.981000		2025-09-19	06:48:39
214	22200528.wav	22200528_00000_000.wav	PIPPYG	104	100	0.962000		2025-09-19	06:43:21
215	22200545.wav	22200545_00000_000.wav	PIPPYG	105	99	0.943000		2025-09-19	06:46:25

	IN FILE	OUT FILE FS	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID	DATE	TIME
461	22200298.wav	22200298_00000_000.wav	PIPPYG	4	3	0.750000		2025-09-19	00:17:45
462	22200475.wav	22200475_00000_000.wav	PIPPYG	4	3	0.750000		2025-09-19	00:34:09
463	22200006.wav	22200006_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-18	19:56:51
464	22200023.wav	22200023_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-18	20:09:59
465	22200038.wav	22200038_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-18	20:10:48
466	22200038.wav	22200038_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-18	20:13:36
467	22200086.wav	22200086_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-18	21:00:12
468	22200090.wav	22200090_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-18	21:08:28
469	22200114.wav	22200114_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	05:22:32
470	22200116.wav	22200116_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	05:24:12
471	22200124.wav	22200124_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	05:36:06
472	22200125.wav	22200125_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	05:36:21
473	22200154.wav	22200154_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	05:55:15
474	22200170.wav	22200170_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:01:46
475	22200176.wav	22200176_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:02:43
476	22200211.wav	22200211_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:07:43
477	22200214.wav	22200214_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:08:09
478	22200270.wav	22200270_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:15:25
479	22200276.wav	22200276_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:15:48
480	22200314.wav	22200314_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:19:12
481	22200333.wav	22200333_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:20:38
482	22200339.wav	22200339_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:21:01
483	22200398.wav	22200398_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:27:12
484	22200429.wav	22200429_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:30:14
485	22200433.wav	22200433_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:30:31
486	22200437.wav	22200437_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:30:58
487	22200449.wav	22200449_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:31:44
488	22200446.wav	22200446_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:31:32
489	22200447.wav	22200447_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:31:36
490	22200457.wav	22200457_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:32:19
491	22200464.wav	22200464_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:33:09
492	22200473.wav	22200473_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:33:55
493	22200482.wav	22200482_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:34:48
494	22200481.wav	22200481_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:34:36
495	22200494.wav	22200494_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:37:12
496	22200513.wav	22200513_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:40:55
497	22200554.wav	22200554_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:48:27
498	22200589.wav	22200589_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:55:18
499	22200603.wav	22200603_00000_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:57:06

Song meter mini static detector in chimney

	IN FILE	OUT FILE FS	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID	DATE	TIME
1	MINIBATA_20250918_214827.wav	MINIBATA_20250918_214827_000.wav	MYODAU	10	9	0.900000		2025-09-18	21:49:27
2	MINIBATA_20250918_210806.wav	MINIBATA_20250918_210806_000.wav	MYODAU	4	4	1.000000		2025-09-18	21:08:06
3	MINIBATA_20250918_212342.wav	MINIBATA_20250918_212342_000.wav	MYODAU	4	4	1.000000		2025-09-18	21:23:42
4	MINIBATA_20250918_211506.wav	MINIBATA_20250918_211506_000.wav	MYODAU	3	3	1.000000		2025-09-18	21:15:06
5	MINIBATA_20250918_221324.wav	MINIBATA_20250918_221324_000.wav	MYODAU	3	3	1.000000		2025-09-18	22:13:24
6	MINIBATA_20250919_061930.wav	MINIBATA_20250919_061930_000.wav	MYODAU	3	3	1.000000		2025-09-19	06:19:30
7	MINIBATA_20250918_213402.wav	MINIBATA_20250918_213402_000.wav	MYODAU	4	3	0.750000		2025-09-18	21:34:02
8	MINIBATA_20250918_214512.wav	MINIBATA_20250918_214512_000.wav	MYODAU	1	1	1.000000		2025-09-18	21:45:12
9	MINIBATA_20250918_220844.wav	MINIBATA_20250918_220844_000.wav	Noise	1	0	0.000000	MYOTIS	2025-09-18	22:08:44
10	MINIBATA_20250918_223240.wav	MINIBATA_20250918_223240_000.wav	Noise	2	0	0.000000	MYOTIS	2025-09-18	22:32:40
11	MINIBATA_20250919_002152.wav	MINIBATA_20250919_002152_000.wav	Noise	1	0	0.000000	Noise	2025-09-19	00:21:52
12	MINIBATA_20250919_023321.wav	MINIBATA_20250919_023321_000.wav	Noise	1	0	0.000000	Noise	2025-09-19	02:33:21
13	MINIBATA_20250919_031820.wav	MINIBATA_20250919_031820_000.wav	Noise	2	0	0.000000	P/P	2025-09-19	03:18:20
14	MINIBATA_20250919_034230.wav	MINIBATA_20250919_034230_000.wav	Noise	11	0	0.000000	P/P	2025-09-19	03:42:30
15	MINIBATA_20250919_035419.wav	MINIBATA_20250919_035419_000.wav	Noise	2	0	0.000000	P/P	2025-09-19	03:54:19
16	MINIBATA_20250919_040239.wav	MINIBATA_20250919_040239_000.wav	Noise	2	0	0.000000	Noise	2025-09-19	04:02:39
17	MINIBATA_20250919_060018.wav	MINIBATA_20250919_060018_000.wav	Noise	2	0	0.000000	Noise	2025-09-19	06:00:18
18	MINIBATA_20250919_060046.wav	MINIBATA_20250919_060046_000.wav	Noise	1	0	0.000000	Noise	2025-09-19	06:00:46



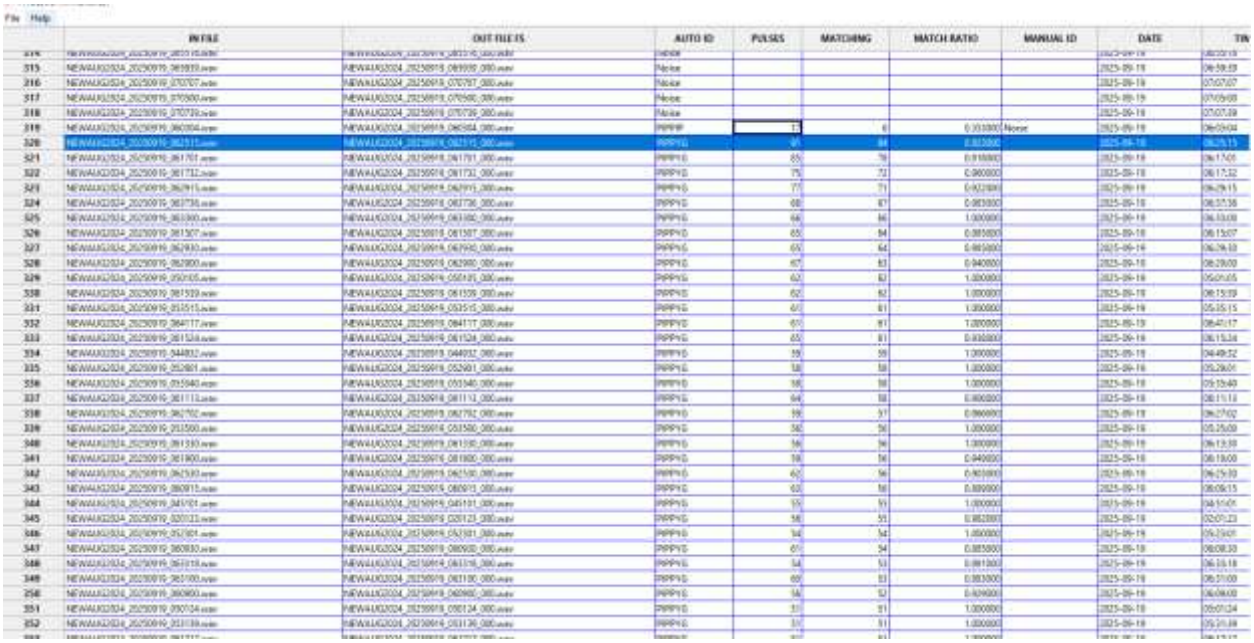
	IN FILE	OUT FILE FS	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID	DATE	TIME
228	MINIBATA_20250919_061215.wav	MINIBATA_20250919_061215_000.wav	PIPPYG	133	133	0.993000		2025-09-19	06:12:15
229	MINIBATA_20250919_064153.wav	MINIBATA_20250919_064153_000.wav	PIPPYG	133	128	0.970000		2025-09-19	06:41:53
230	MINIBATA_20250919_061148.wav	MINIBATA_20250919_061148_000.wav	PIPPYG	130	124	0.969000		2025-09-19	06:11:48
231	MINIBATA_20250919_064002.wav	MINIBATA_20250919_064002_000.wav	PIPPYG	123	118	0.967000		2025-09-19	06:40:02
232	MINIBATA_20250919_061230.wav	MINIBATA_20250919_061230_000.wav	PIPPYG	123	118	0.946000		2025-09-19	06:12:30
233	MINIBATA_20250919_062259.wav	MINIBATA_20250919_062259_000.wav	PIPPYG	119	119	1.000000		2025-09-19	06:22:59
234	MINIBATA_20250919_060912.wav	MINIBATA_20250919_060912_000.wav	PIPPYG	111	108	0.973000		2025-09-19	06:09:12
235	MINIBATA_20250919_065310.wav	MINIBATA_20250919_065310_000.wav	PIPPYG	124	107	0.863000		2025-09-19	06:53:10
236	MINIBATA_20250919_063034.wav	MINIBATA_20250919_063034_000.wav	PIPPYG	131	104	0.969000		2025-09-19	06:30:34
237	MINIBATA_20250919_064952.wav	MINIBATA_20250919_064952_000.wav	PIPPYG	108	104	0.963000		2025-09-19	06:49:52
238	MINIBATA_20250919_063649.wav	MINIBATA_20250919_063649_000.wav	PIPPYG	101	101	1.000000		2025-09-19	06:36:49
239	MINIBATA_20250919_061417.wav	MINIBATA_20250919_061417_000.wav	PIPPYG	103	102	0.990000		2025-09-19	06:14:17
240	MINIBATA_20250919_061129.wav	MINIBATA_20250919_061129_000.wav	PIPPYG	100	99	0.990000		2025-09-19	06:11:29
241	MINIBATA_20250919_064621.wav	MINIBATA_20250919_064621_000.wav	PIPPYG	101	96	0.950000		2025-09-19	06:46:21
242	MINIBATA_20250919_061402.wav	MINIBATA_20250919_061402_000.wav	PIPPYG	98	95	0.969000		2025-09-19	06:14:02
243	MINIBATA_20250919_061006.wav	MINIBATA_20250919_061006_000.wav	PIPPYG	95	94	0.989000		2025-09-19	06:10:06
244	MINIBATA_20250919_063723.wav	MINIBATA_20250919_063723_000.wav	PIPPYG	89	89	1.000000		2025-09-19	06:37:23
245	MINIBATA_20250919_062820.wav	MINIBATA_20250919_062820_000.wav	PIPPYG	89	89	1.000000		2025-09-19	06:28:20
246	MINIBATA_20250919_053707.wav	MINIBATA_20250919_053707_000.wav	PIPPYG	92	88	0.967000		2025-09-19	05:37:07
247	MINIBATA_20250918_201057.wav	MINIBATA_20250918_201057_000.wav	PIPPYG	89	88	0.989000		2025-09-18	20:10:57
248	MINIBATA_20250919_061021.wav	MINIBATA_20250919_061021_000.wav	PIPPYG	89	87	0.978000		2025-09-19	06:10:21
249	MINIBATA_20250919_060702.wav	MINIBATA_20250919_060702_000.wav	PIPPYG	87	86	0.989000		2025-09-19	06:07:02
250	MINIBATA_20250919_060938.wav	MINIBATA_20250919_060938_000.wav	PIPPYG	87	86	0.989000		2025-09-19	06:09:38
251	MINIBATA_20250919_060857.wav	MINIBATA_20250919_060857_000.wav	PIPPYG	91	85	0.934000		2025-09-19	06:08:57
252	MINIBATA_20250919_063307.wav	MINIBATA_20250919_063307_000.wav	PIPPYG	84	84	1.000000		2025-09-19	06:33:07
253	MINIBATA_20250919_064710.wav	MINIBATA_20250919_064710_000.wav	PIPPYG	83	83	1.000000		2025-09-19	06:47:10
254	MINIBATA_20250918_201251.wav	MINIBATA_20250918_201251_000.wav	PIPPYG	83	82	0.988000		2025-09-18	20:12:51
255	MINIBATA_20250918_203958.wav	MINIBATA_20250918_203958_000.wav	PIPPYG	90	82	0.911000		2025-09-18	20:39:58
256	MINIBATA_20250919_062511.wav	MINIBATA_20250919_062511_000.wav	PIPPYG	83	79	0.952000		2025-09-19	06:25:11
257	MINIBATA_20250919_062206.wav	MINIBATA_20250919_062206_000.wav	PIPPYG	101	79	0.782000		2025-09-19	06:22:06
258	MINIBATA_20250918_201202.wav	MINIBATA_20250918_201202_000.wav	PIPPYG	80	78	0.975000		2025-09-18	20:12:02
259	MINIBATA_20250919_060503.wav	MINIBATA_20250919_060503_000.wav	PIPPYG	90	78	0.867000		2025-09-19	06:05:03
260	MINIBATA_20250919_060734.wav	MINIBATA_20250919_060734_000.wav	PIPPYG	76	75	0.987000		2025-09-19	06:07:34
261	MINIBATA_20250919_062001.wav	MINIBATA_20250919_062001_000.wav	PIPPYG	75	74	0.987000		2025-09-19	06:20:01
262	MINIBATA_20250918_052802.wav	MINIBATA_20250918_052802_000.wav	PIPPYG	76	74	0.987000		2025-09-18	05:28:02
263	MINIBATA_20250919_061752.wav	MINIBATA_20250919_061752_000.wav	PIPPYG	72	72	1.000000		2025-09-19	06:17:52
264	MINIBATA_20250918_202910.wav	MINIBATA_20250918_202910_000.wav	PIPPYG	73	72	0.986000		2025-09-18	20:29:10
265	MINIBATA_20250919_062352.wav	MINIBATA_20250919_062352_000.wav	PIPPYG	92	72	0.783000		2025-09-19	06:23:52
266	MINIBATA_20250918_202054.wav	MINIBATA_20250918_202054_000.wav	PIPPYG	71	71	1.000000		2025-09-18	20:20:54
267	MINIBATA_20250919_064107.wav	MINIBATA_20250919_064107_000.wav	PIPPYG	71	71	1.000000		2025-09-19	06:41:07

	IN FILE	OUT FILE FS	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID	DATE	TIME
674	MINIBATA_20250919_060936.wav	MINIBATA_20250919_060936_000.wav	PIPPYG	6	6	0.667000		2025-09-19	06:09:36
675	MINIBATA_20250919_040958.wav	MINIBATA_20250919_040958_000.wav	PIPPYG	9	6	0.667000		2025-09-19	04:09:58
676	MINIBATA_20250918_201321.wav	MINIBATA_20250918_201321_000.wav	PIPPYG	5	5	1.000000		2025-09-18	20:13:21
677	MINIBATA_20250918_201549.wav	MINIBATA_20250918_201549_000.wav	PIPPYG	5	5	1.000000		2025-09-18	20:15:49
678	MINIBATA_20250918_202542.wav	MINIBATA_20250918_202542_000.wav	PIPPYG	5	5	1.000000		2025-09-18	20:25:42
679	MINIBATA_20250919_032201.wav	MINIBATA_20250919_032201_000.wav	PIPPYG	5	5	1.000000		2025-09-19	03:22:01
680	MINIBATA_20250919_061617.wav	MINIBATA_20250919_061617_000.wav	PIPPYG	5	5	1.000000		2025-09-19	06:16:17
681	MINIBATA_20250919_061705.wav	MINIBATA_20250919_061705_000.wav	PIPPYG	5	5	1.000000		2025-09-19	06:17:05
682	MINIBATA_20250919_065048.wav	MINIBATA_20250919_065048_000.wav	PIPPYG	5	5	1.000000		2025-09-19	06:50:48
683	MINIBATA_20250919_065147.wav	MINIBATA_20250919_065147_000.wav	PIPPYG	6	5	0.833000		2025-09-19	06:51:47
684	MINIBATA_20250919_201444.wav	MINIBATA_20250919_201444_000.wav	PIPPYG	4	4	1.000000		2025-09-19	20:14:44
685	MINIBATA_20250919_203612.wav	MINIBATA_20250919_203612_000.wav	PIPPYG	4	4	1.000000		2025-09-19	20:36:12
686	MINIBATA_20250919_054621.wav	MINIBATA_20250919_054621_000.wav	PIPPYG	4	4	1.000000		2025-09-19	05:46:21
687	MINIBATA_20250919_065808.wav	MINIBATA_20250919_065808_000.wav	PIPPYG	4	4	1.000000		2025-09-19	06:58:08
688	MINIBATA_20250919_023004.wav	MINIBATA_20250919_023004_000.wav	PIPPYG	5	4	0.800000		2025-09-19	02:30:04
689	MINIBATA_20250919_033225.wav	MINIBATA_20250919_033225_000.wav	PIPPYG	5	4	0.800000		2025-09-19	03:32:25
690	MINIBATA_20250919_040410.wav	MINIBATA_20250919_040410_000.wav	PIPPYG	5	4	0.800000		2025-09-19	04:04:10
691	MINIBATA_20250919_052457.wav	MINIBATA_20250919_052457_000.wav	PIPPYG	5	4	0.800000		2025-09-19	05:24:57
692	MINIBATA_20250919_042157.wav	MINIBATA_20250919_042157_000.wav	PIPPYG	6	4	0.667000		2025-09-19	04:21:57
693	MINIBATA_20250919_031313.wav	MINIBATA_20250919_031313_000.wav	PIPPYG	3	3	1.000000		2025-09-19	03:13:13
694	MINIBATA_20250919_041146.wav	MINIBATA_20250919_041146_000.wav	PIPPYG	3	3	1.000000		2025-09-19	04:11:46
695	MINIBATA_20250919_044631.wav	MINIBATA_20250919_044631_000.wav	PIPPYG	3	3	1.000000		2025-09-19	04:46:31
696	MINIBATA_20250919_050735.wav	MINIBATA_20250919_050735_000.wav	PIPPYG	3	3	1.000000		2025-09-19	05:07:35
697	MINIBATA_20250919_054055.wav	MINIBATA_20250919_054055_000.wav	PIPPYG	3	3	1.000000		2025-09-19	05:40:55
698	MINIBATA_20250919_042446.wav	MINIBATA_20250919_042446_000.wav	PIPPYG	4	3	0.750000		2025-09-19	04:24:46
699	MINIBATA_20250919_054808.wav	MINIBATA_20250919_054808_000.wav	PIPPYG	4	3	0.750000		2025-09-19	05:48:08
700	MINIBATA_20250919_033644.wav	MINIBATA_20250919_033644_000.wav	PIPPYG	5	3	0.600000		2025-09-19	03:36:44
701	MINIBATA_20250918_201653.wav	MINIBATA_20250918_201653_000.wav	PIPPYG	2	2	1.000000		2025-09-18	20:16:53
702	MINIBATA_20250918_202025.wav	MINIBATA_20250918_202025_000.wav	PIPPYG	2	2	1.000000		2025-09-18	20:20:25
703	MINIBATA_20250919_035235.wav	MINIBATA_20250919_035235_000.wav	PIPPYG	2	2	1.000000		2025-09-19	03:52:35
704	MINIBATA_20250919_042314.wav	MINIBATA_20250919_042314_000.wav	PIPPYG	2	2	1.000000		2025-09-19	04:23:14
705	MINIBATA_20250919_063325.wav	MINIBATA_20250919_063325_000.wav	PIPPYG	2	2	1.000000		2025-09-19	06:33:25
706	MINIBATA_20250919_070003.wav	MINIBATA_20250919_070003_000.wav	PIPPYG	2	2	1.000000		2025-09-19	07:00:03
707	MINIBATA_20250919_030657.wav	MINIBATA_20250919_030657_000.wav	PIPPYG	3	2	0.667000		2025-09-19	03:06:57
708	MINIBATA_20250919_023307.wav	MINIBATA_20250919_023307_000.wav	PIPPYG	2	1	0.500000		2025-09-19	02:33:07
709	MINIBATA_20250919_060956.wav	MINIBATA_20250919_060956_000.wav	PIPPYG	1	1	0.500000	PIPPYG	2025-09-19	06:09:56

Song meter mini bat data – placed on windowsill

File Help

	IN FILE	OUT FILE FS	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID	DATE	TIME
1	NEWAUG2024_20250919_013304.wav	NEWAUG2024_20250919_013304_000.wav	MYODAU	9	8	0.889000	MYODAU	2025-09-19	01:33:04
2	NEWAUG2024_20250919_013331.wav	NEWAUG2024_20250919_013331_000.wav	MYODAU	7	7	1.000000	MYODAU	2025-09-19	01:33:31
3	NEWAUG2024_20250919_223307.wav	NEWAUG2024_20250919_223307_000.wav	MYODAU	3	3	1.000000	MYODAU	2025-09-19	22:33:07
4	NEWAUG2024_20250919_023946.wav	Null	Null	2	0	0.000000	Noise	2025-09-19	02:39:46
5	NEWAUG2024_20250919_192347.wav	Noise					Noise	2025-09-19	19:23:47
6	NEWAUG2024_20250919_192502.wav	Noise						2025-09-19	19:25:02



	IN FILE	OUT FILE TS	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID	DATE	TIN
315	NEWAUG2024_20250919_065859.wav	NEWAUG2024_20250919_065900_000.wav	Noise					2025-09-19	06:59:59
316	NEWAUG2024_20250919_070707.wav	NEWAUG2024_20250919_070707_000.wav	Noise					2025-09-19	07:07:07
317	NEWAUG2024_20250919_070900.wav	NEWAUG2024_20250919_070900_000.wav	Noise					2025-09-19	07:09:08
318	NEWAUG2024_20250919_070739.wav	NEWAUG2024_20250919_070739_000.wav	Noise					2025-09-19	07:07:39
319	NEWAUG2024_20250919_060004.wav	NEWAUG2024_20250919_060004_000.wav	PIPPYG	1	6	0.333000	Noise	2025-09-19	06:00:04
320	NEWAUG2024_20250919_062915.wav	NEWAUG2024_20250919_062915_000.wav	PIPPYG	85	84	0.823000		2025-09-19	06:29:15
321	NEWAUG2024_20250919_061701.wav	NEWAUG2024_20250919_061701_000.wav	PIPPYG	65	78	0.910000		2025-09-19	06:17:01
322	NEWAUG2024_20250919_061732.wav	NEWAUG2024_20250919_061732_000.wav	PIPPYG	75	72	0.960000		2025-09-19	06:17:32
323	NEWAUG2024_20250919_062915.wav	NEWAUG2024_20250919_062915_000.wav	PIPPYG	77	71	0.922000		2025-09-19	06:29:15
324	NEWAUG2024_20250919_063738.wav	NEWAUG2024_20250919_063738_000.wav	PIPPYG	68	67	0.985000		2025-09-19	06:37:38
325	NEWAUG2024_20250919_061000.wav	NEWAUG2024_20250919_061000_000.wav	PIPPYG	66	66	1.000000		2025-09-19	06:10:00
326	NEWAUG2024_20250919_061507.wav	NEWAUG2024_20250919_061507_000.wav	PIPPYG	65	64	0.985000		2025-09-19	06:15:07
327	NEWAUG2024_20250919_062910.wav	NEWAUG2024_20250919_062910_000.wav	PIPPYG	65	64	0.985000		2025-09-19	06:29:10
328	NEWAUG2024_20250919_062800.wav	NEWAUG2024_20250919_062800_000.wav	PIPPYG	67	63	0.940000		2025-09-19	06:28:00
329	NEWAUG2024_20250919_060105.wav	NEWAUG2024_20250919_060105_000.wav	PIPPYG	62	62	1.000000		2025-09-19	06:01:05
330	NEWAUG2024_20250919_061559.wav	NEWAUG2024_20250919_061559_000.wav	PIPPYG	62	62	1.000000		2025-09-19	06:15:59
331	NEWAUG2024_20250919_053515.wav	NEWAUG2024_20250919_053515_000.wav	PIPPYG	61	61	1.000000		2025-09-19	05:35:15
332	NEWAUG2024_20250919_064117.wav	NEWAUG2024_20250919_064117_000.wav	PIPPYG	61	61	1.000000		2025-09-19	06:41:17
333	NEWAUG2024_20250919_061524.wav	NEWAUG2024_20250919_061524_000.wav	PIPPYG	65	61	0.938000		2025-09-19	06:15:24
334	NEWAUG2024_20250919_044932.wav	NEWAUG2024_20250919_044932_000.wav	PIPPYG	59	59	1.000000		2025-09-19	04:49:32
335	NEWAUG2024_20250919_052601.wav	NEWAUG2024_20250919_052601_000.wav	PIPPYG	58	58	1.000000		2025-09-19	05:26:01
336	NEWAUG2024_20250919_055940.wav	NEWAUG2024_20250919_055940_000.wav	PIPPYG	58	58	1.000000		2025-09-19	05:59:40
337	NEWAUG2024_20250919_061113.wav	NEWAUG2024_20250919_061113_000.wav	PIPPYG	64	58	0.906000		2025-09-19	06:11:13
338	NEWAUG2024_20250919_062702.wav	NEWAUG2024_20250919_062702_000.wav	PIPPYG	59	57	0.966000		2025-09-19	06:27:02
339	NEWAUG2024_20250919_052500.wav	NEWAUG2024_20250919_052500_000.wav	PIPPYG	56	56	1.000000		2025-09-19	05:25:00
340	NEWAUG2024_20250919_061300.wav	NEWAUG2024_20250919_061300_000.wav	PIPPYG	56	56	1.000000		2025-09-19	06:13:00
341	NEWAUG2024_20250919_061800.wav	NEWAUG2024_20250919_061800_000.wav	PIPPYG	59	56	0.949000		2025-09-19	06:18:00
342	NEWAUG2024_20250919_062500.wav	NEWAUG2024_20250919_062500_000.wav	PIPPYG	62	56	0.903000		2025-09-19	06:25:00
343	NEWAUG2024_20250919_060915.wav	NEWAUG2024_20250919_060915_000.wav	PIPPYG	63	56	0.889000		2025-09-19	06:09:15
344	NEWAUG2024_20250919_045101.wav	NEWAUG2024_20250919_045101_000.wav	PIPPYG	51	51	1.000000		2025-09-19	04:51:01
345	NEWAUG2024_20250919_020123.wav	NEWAUG2024_20250919_020123_000.wav	PIPPYG	58	51	0.862000		2025-09-19	02:01:23
346	NEWAUG2024_20250919_052901.wav	NEWAUG2024_20250919_052901_000.wav	PIPPYG	54	54	1.000000		2025-09-19	05:29:01
347	NEWAUG2024_20250919_060830.wav	NEWAUG2024_20250919_060830_000.wav	PIPPYG	61	54	0.885000		2025-09-19	06:08:30
348	NEWAUG2024_20250919_061118.wav	NEWAUG2024_20250919_061118_000.wav	PIPPYG	54	53	0.981000		2025-09-19	06:11:18
349	NEWAUG2024_20250919_063100.wav	NEWAUG2024_20250919_063100_000.wav	PIPPYG	69	53	0.883000		2025-09-19	06:31:00
350	NEWAUG2024_20250919_060900.wav	NEWAUG2024_20250919_060900_000.wav	PIPPYG	58	52	0.929000		2025-09-19	06:09:00
351	NEWAUG2024_20250919_050124.wav	NEWAUG2024_20250919_050124_000.wav	PIPPYG	51	51	1.000000		2025-09-19	05:01:24
352	NEWAUG2024_20250919_053139.wav	NEWAUG2024_20250919_053139_000.wav	PIPPYG	51	51	1.000000		2025-09-19	05:31:39
737	NEWAUG2024_20250919_055703.wav	NEWAUG2024_20250919_055703_000.wav	PIPPYG	7	7	1.000000		2025-09-19	05:57:03
738	NEWAUG2024_20250919_064500.wav	NEWAUG2024_20250919_064500_000.wav	PIPPYG	7	7	1.000000		2025-09-19	06:45:00
739	NEWAUG2024_20250919_065132.wav	NEWAUG2024_20250919_065132_000.wav	PIPPYG	7	7	1.000000		2025-09-19	06:51:32
740	NEWAUG2024_20250919_070141.wav	NEWAUG2024_20250919_070141_000.wav	PIPPYG	7	7	1.000000		2025-09-19	07:01:41
741	NEWAUG2024_20250919_233312.wav	NEWAUG2024_20250919_233312_000.wav	PIPPYG	6	6	1.000000		2025-09-19	23:33:12
742	NEWAUG2024_20250919_231936.wav	NEWAUG2024_20250919_231936_000.wav	PIPPYG	6	6	1.000000		2025-09-19	23:19:36
743	NEWAUG2024_20250919_033815.wav	NEWAUG2024_20250919_033815_000.wav	PIPPYG	6	6	1.000000		2025-09-19	03:38:15
744	NEWAUG2024_20250919_031750.wav	NEWAUG2024_20250919_031750_000.wav	PIPPYG	6	6	1.000000		2025-09-19	03:17:50
745	NEWAUG2024_20250919_042148.wav	NEWAUG2024_20250919_042148_000.wav	PIPPYG	6	6	1.000000		2025-09-19	04:21:48
746	NEWAUG2024_20250919_064715.wav	NEWAUG2024_20250919_064715_000.wav	PIPPYG	6	6	1.000000		2025-09-19	06:47:15
747	NEWAUG2024_20250919_065542.wav	NEWAUG2024_20250919_065542_000.wav	PIPPYG	6	6	1.000000		2025-09-19	06:55:42
748	NEWAUG2024_20250919_070111.wav	NEWAUG2024_20250919_070111_000.wav	PIPPYG	6	6	1.000000		2025-09-19	07:01:11
749	NEWAUG2024_20250919_031315.wav	NEWAUG2024_20250919_031315_000.wav	PIPPYG	7	6	0.857000		2025-09-19	03:13:15
750	NEWAUG2024_20250919_062100.wav	NEWAUG2024_20250919_062100_000.wav	PIPPYG	8	6	0.750000		2025-09-19	06:21:00
751	NEWAUG2024_20250919_033346.wav	NEWAUG2024_20250919_033346_000.wav	PIPPYG	5	5	1.000000		2025-09-19	03:33:46
752	NEWAUG2024_20250919_052753.wav	NEWAUG2024_20250919_052753_000.wav	PIPPYG	5	5	1.000000		2025-09-19	05:27:53
753	NEWAUG2024_20250919_064949.wav	NEWAUG2024_20250919_064949_000.wav	PIPPYG	5	5	1.000000		2025-09-19	06:49:49
754	NEWAUG2024_20250919_030946.wav	NEWAUG2024_20250919_030946_000.wav	PIPPYG	6	5	0.833000		2025-09-19	03:09:46
755	NEWAUG2024_20250918_195833.wav	NEWAUG2024_20250918_195833_000.wav	PIPPYG	4	4	1.000000		2025-09-18	19:58:33
756	NEWAUG2024_20250918_201116.wav	NEWAUG2024_20250918_201116_000.wav	PIPPYG	4	4	1.000000		2025-09-18	20:11:16
757	NEWAUG2024_20250919_005324.wav	NEWAUG2024_20250919_005324_000.wav	PIPPYG	4	4	1.000000		2025-09-19	00:53:24
758	NEWAUG2024_20250919_022329.wav	NEWAUG2024_20250919_022329_000.wav	PIPPYG	4	4	1.000000		2025-09-19	02:23:29
759	NEWAUG2024_20250919_031119.wav	NEWAUG2024_20250919_031119_000.wav	PIPPYG	4	4	1.000000		2025-09-19	03:11:19
760	NEWAUG2024_20250919_041947.wav	NEWAUG2024_20250919_041947_000.wav	PIPPYG	4	4	1.000000		2025-09-19	04:19:47
761	NEWAUG2024_20250919_044136.wav	NEWAUG2024_20250919_044136_000.wav	PIPPYG	4	4	1.000000		2025-09-19	04:41:36
762	NEWAUG2024_20250919_050153.wav	NEWAUG2024_20250919_050153_000.wav	PIPPYG	4	4	1.000000		2025-09-19	05:01:53
763	NEWAUG2024_20250919_050927.wav	NEWAUG2024_20250919_050927_000.wav	PIPPYG	4	4	1.000000		2025-09-19	05:09:27
764	NEWAUG2024_20250919_053751.wav	NEWAUG2024_20250919_053751_000.wav	PIPPYG	4	4	1.000000		2025-09-19	05:37:51
765	NEWAUG2024_20250919_062711.wav	NEWAUG2024_20250919_062711_000.wav	PIPPYG	4	4	1.000000		2025-09-19	06:27:11
766	NEWAUG2024_20250918_201326.wav	NEWAUG2024_20250919_201326_000.wav	PIPPYG	3	3	1.000000		2025-09-18	20:13:26
767	NEWAUG2024_20250919_025748.wav	NEWAUG2024_20250919_025748_000.wav	PIPPYG	3	3	1.000000		2025-09-19	02:57:48
768	NEWAUG2024_20250919_031548.wav	NEWAUG2024_20250919_031548_000.wav	PIPPYG	3	3	1.000000		2025-09-19	03:15:48
769	NEWAUG2024_20250919_055300.wav	NEWAUG2024_20250919_055300_000.wav	PIPPYG	3	3	1.000000		2025-09-19	05:53:00
770	NEWAUG2024_20250919_055947.wav	NEWAUG2024_20250919_055947_000.wav	PIPPYG	3	3	1.000000		2025-09-19	05:59:47
771	NEWAUG2024_20250919_070900.wav	NEWAUG2024_20250919_070900_000.wav	PIPPYG	3	3	1.000000		2025-09-19	07:09:00
772	NEWAUG2024_20250919_210322.wav	NEWAUG2024_20250919_210322_000.wav	PIPPYG	2	2	1.000000		2025-09-19	21:03:22
773	NEWAUG2024_20250919_025349.wav	NEWAUG2024_20250919_025349_000.wav	PIPPYG	2	2	1.000000		2025-09-19	02:53:49
774	NEWAUG2024_20250919_034300.wav	NEWAUG2024_20250919_034300_000.wav	PIPPYG	2	2	1.000000		2025-09-19	03:43:00
775	NEWAUG2024_20250919_045901.wav	NEWAUG2024_20250919_045901_000.wav	PIPPYG	2	2	1.000000		2025-09-19	04:59:01
776	NEWAUG2024_20250919_051118.wav	NEWAUG2024_20250919_051118_000.wav	PIPPYG	2	2	1.000000		2025-09-19	05:11:18

Transects


N59


50 m
N59

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

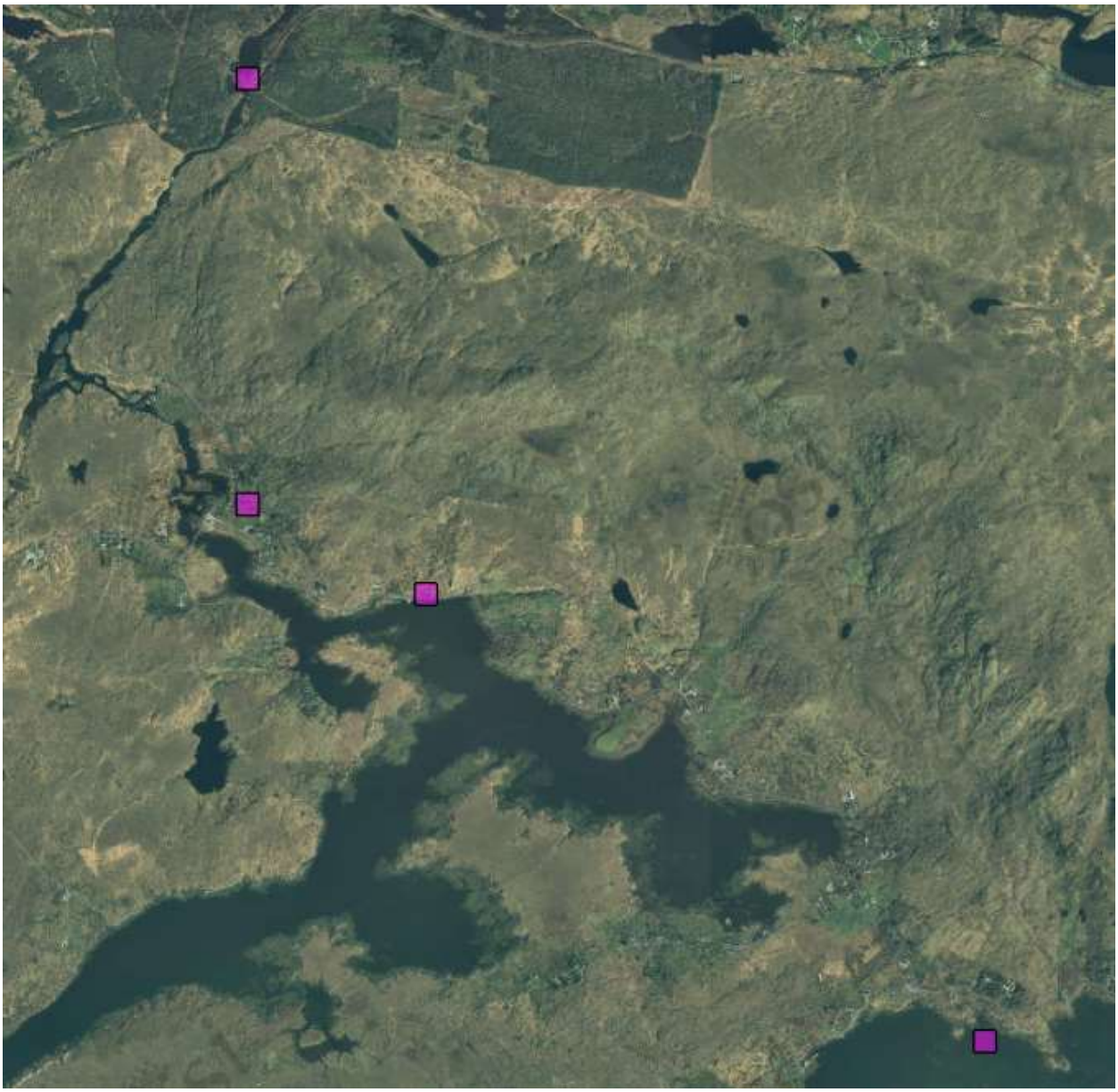
BCIreland data: search results 30 Sep 2025					
Search parameters: Roosts Transects Ad-hoc observation sites with observations of all species within 10000m of L7629948015					
Roosts					
Name	Grid reference	Grid ref easting	Grid ref northing	Address	Species observed
Delphi Bridge	L8408256514	84082	256514	Delphi, County Mayo	Myotis daubentonii
Emalaghdauroe Bridge	L7582648585	75826	248585	Emalaghdauroe Bridge	Myotis daubentonii
Lettershea Bridge	L7308449259	73084	249259	Lettershea Bridge, County Galway	Pipistrellus pygmaeus
Old Monestry Hostel, Letterfrack	L7105857545	71058	257545	Letterfrack, Co. Galway	Plecotus auritus
Transects					
Name	Grid reference start	Grid ref easting start	Grid ref northing start	Species observed	
L64 (1) 2005-2007	L6673340195	66733	240195	Pipistrellus pygmaeus	

L64 (10) 2005-2007	L679345 6714	6793 4	25671 4	Pipistrellus pygmaeus,Pipistrellus spp. (45kHz/55kHz)	
L64 (10) 2008-	L771804 6694	7718 0	24669 4	Pipistrellus pygmaeus,Myotis spp.,Pipistrellus spp. (45kHz/55kHz)	
L64 (11) 2008-	L667334 0195	6673 3	24019 5		
L64 (16) 2005-2007	L808185 7164	8081 8	25716 4	Pipistrellus pygmaeus,Nyctalus leisleri,Unidentified bat	
L64 (17) 2005-2007	L843085 4042	8430 8	25404 2	Pipistrellus pygmaeus	
L64 (18) 2005-2007	L845414 9744	8454 1	24974 4	Myotis spp.,Pipistrellus pygmaeus,Pipistrellus spp. (45kHz/55kHz)	
L64 (19) 2005-2007	L812024 6962	8120 2	24696 2	Pipistrellus pygmaeus,Nyctalus leisleri	
L64 (20) 2005-2007	L771804 6694	7718 0	24669 4	Pipistrellus pygmaeus	
L64 (20) 2008-2008	L679345 6714	6793 4	25671 4		
L64 (6) 2008-	L808185 7164	8081 8	25716 4	Pipistrellus spp. (45kHz/55kHz),Pipistrellus pygmaeus	
L64 (7) 2008-	L843085 4042	8430 8	25404 2	Pipistrellus pygmaeus,Myotis spp.,Pipistrellus spp. (45kHz/55kHz),Unidentified bat	
L64 (8) 2008-	L845414 9744	8454 1	24974 4	Pipistrellus pygmaeus,Pipistrellus spp. (45kHz/55kHz)	
L64 (9) 2008-	L812024 6962	8120 2	24696 2	Pipistrellus pygmaeus,Myotis spp.,Pipistrellus spp. (45kHz/55kHz),Nyctalus leisleri	
Ad-hoc observations					
Survey	Grid reference	Grid ref easting	Grid ref northing	Date	Species observed
BATLAS 2010	L665235 7089	6652 3	25708 9	9/20/2009	Pipistrellus pygmaeus

BATLAS 2010	L8183839762	81838	239762	5/26/2009	Myotis daubentonii
BATLAS 2010	L7551347967	75513	247967	5/26/2009	Unidentified bat,Pipistrellus pygmaeus,Myotis spp.,Myotis natterreri,Plecotus auritus
BATLAS 2010	L7589446581	75894	246581	5/26/2009	Myotis daubentonii
BATLAS 2010	L7239640972	72396	240972	5/25/2009	Pipistrellus pygmaeus
BATLAS 2010	L7811048009	78110	248009	5/24/2009	Unidentified bat,Pipistrellus pipistrellus (45kHz),Pipistrellus pygmaeus,Nyctalus leisleri,Myotis spp.,Myotis daubentonii
BATLAS 2010	L6999549896	69995	249896	5/24/2009	Pipistrellus pipistrellus (45kHz),Pipistrellus pygmaeus,Myotis daubentonii
BATLAS 2020	L6842039719	68420	239719	8/27/2018	Pipistrellus pygmaeus
BATLAS 2020	L8182439771	81824	239771	8/29/2018	Pipistrellus pygmaeus,Myotis daubentonii,Plecotus auritus
BATLAS 2020	L6743939932	67439	239932	8/27/2018	
BATLAS 2020	L7170645600	71706	245600	8/28/2018	Pipistrellus pygmaeus
BATLAS 2020	L7593446601	75934	246601	8/27/2018	Pipistrellus pygmaeus
BATLAS 2020	L6807647397	68076	247397	8/28/2018	Pipistrellus pipistrellus (45kHz),Pipistrellus pygmaeus

BATLAS 2020	L8025047484	80250	247484	8/27/2018	Pipistrellus pygmaeus,Myotis daubentonii
BATLAS 2020	L8485350852	84853	250852	8/27/2018	
BATLAS 2020	L8244655512	82446	255512	8/27/2018	Pipistrellus pygmaeus
BATLAS 2020	L6722956718	67229	256718	8/28/2018	Pipistrellus pygmaeus
BATLAS 2020	L7076457822	70764	257822	7/16/2017	Pipistrellus pygmaeus,Plecotus auritus,Myotis natterreri,Myotis spp.
Chris Peppiatt	L7232040100	72320	240100	8/28/2008	Pipistrellus pygmaeus,Myotis natterreri,Nyctalus leisleri
Niamh Roche	L7310049300	73100	249300	5/6/2005	Pipistrellus pygmaeus
Niamh Roche	L6730050500	67300	250500	5/5/2005	Pipistrellus pygmaeus

Ballynahinch and surrounding area



Lakes south of Ballynahinch Lake

Otter data from the NBDC database

Grid	L783478
Site	Derrynavglaun
Dataset	Atlas of Mammals in Ireland 2010-2015
Recorder	Dermot Breen
Taxon	Lutra lutra
Common Name	Otter
Date	27/08/2013
Record Id	119057215

Additional Attributes:

County	Galway
Habitat description	Wet heath
Type of sighting	Road Kill

Grid	L759465
Dataset	Atlas of Mammals in Ireland 2010-2015
Recorder	Ger O'Donnell
Date	23/08/2010
Record Id	119038254

Additional Attributes:

Source	National Otter Survey of Ireland 2010/12
Type of sighting	otter spraint

Grid	L746490
Site	Lettershea
Dataset	Atlas of Mammals in Ireland 2010-2015
Recorder	Dermot Breen
Date	29/07/2013
Record Id	119050738

Additional Attributes:

County	Galway
Habitat description	Watercourses
Type of sighting	Road Kill
Vice-county	West Galway

Grid	L759465
Site	Recess / Cloonbeg Bridge
Dataset	Otter survey of Ireland 2004 & 2005
Survey	Otter NPWS data
Recorder	Ger O'Donnell
Date	29/04/2005
Record Id	128249222

Additional Attributes:

Abundance	3 Count of Droppings
Common name	Otter
Determiner name	Ger O'Donnell

Record comment	At this point, reasonably wide stretch of the Ballynahinch river (Owenmore). Managed grassy banks with walls and beats. Some rapids under footbridge / 2 spraints on first surveyed section, 1 spraint on second surveyed section
Survey name	Otter NPWS data

Date	19/12/2012
Record Id	119050950

Additional Attributes:

County	Galway
Habitat description	Littoral rock
Record comment	Female and two well grown pups seen.
Type of sighting	Sighting of live animal
Vice-county	West Galway

Grid	L767442
Site	Cloonile Quay, Toombeola
Dataset	Atlas of Mammals in Ireland 2010-2015
Date	19/12/2012
Record Id	119050950

Additional Attributes:

County	Galway
Habitat description	Littoral rock

Record comment	Female and two well grown pups seen.
Type of sighting	Sighting of live animal
Vice-county	West Galway