

Bat Derogation Licence Application – Supporting Document

Project: Investigation into the effectiveness of playback of bat calls as a means of attracting Lesser Horseshoe Bat to new roosting locations.

Purpose: To inform a bat derogation licence application.

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Introduction

O'Donnell Environmental is involved in several conservation projects where new roosts aimed at Lesser Horseshoe Bat have been provided. Projects include Farm Plan Scheme projects, private developments and the Foynes to Limerick Road Scheme. In some instances, new roosts have been or are proposed to be built in proximity to existing roosts which are derelict and otherwise suboptimal for bats.

A challenge can arise in encouraging Lesser Horseshoe Bat colonies to relocate to newly provided roosts, even when they are evidently more suitable than the current roosting location. Anecdotally, various methods have been tried without success, including 'seeding' with droppings or relocating materials from the existing roost.

Tom O'Donnell proposes to investigate the use of playback of social-calls as a means of attracting Lesser Horseshoe Bat to new roosts. The study will take place in parallel and in co-operation with Dr. Fiona Mathews and PhD student Charlotte Green (University of Sussex) and Kate McAney and Daniel Hargreaves (VWT). University of Sussex and VWT are proposing a similar study in the UK. Dr. Tina Aughney has also indicated that she would be willing to participate in the study.

The methodology was designed with cognisance to Dennis and Pryde (2022). In the case of existing maternity colonies, social vocalisations would be recorded from the specific colony (including juveniles) at the current roosting location and these calls replayed in the new roosting location nearby. Recording would take place in June and July, and playback would take place in August and September 2025 when young are volant and typically less sensitive to disturbances (Reason and Wray, 2023). Raw calls would be 'scrubbed' following a methodology developed by University of Sussex, and replayed using an 'Apodemus' ultrasonic speaker. Speakers would be located within the roost or at the access/egress point.

The response of Lesser Horseshoe Bat will be measured i) by means of visual observation through 'lowglo' CCTV (where possible) or using suitable trail cameras and ii) passive bat echolocation recording.

Given that the locations of the maternity colonies are sensitive, and occur in privately owned properties, the exact locations of the structures are not disclosed in this license application but may be provided directly to NPWS upon request.



Table 1 - Details of Lesser Horseshoe Bat Maternity Colonies Where Luring is Proposed.

| County | Townland | Farm Plan Scheme? | Status |
|--------|-----------------|----------------------|--|
| Мауо | Knocknamucklagh | Yes | Maternity colony of up to 100 Lesser Horseshoe Bat which relocated to a suboptimal location following dereliction of their historic location. The historic location was renovated to a high standard in 2021 and to date only 1 individual Lesser Horseshoe Bat has been noted here, this was in 2024. The lower section of the roost is used by Brown Long-eared Bat. |
| Clare | Knockanira | Yes | Maternity colony of over 100 Lesser Horseshoe Bat within Knockanira House SAC. Risks identified in the current location include dereliction and predation (from Barn Owl and cat). An application for planning is currently with Clare Co. Co. to allow the construction of a new, bespoke roost as part of the Farm Plan Scheme. |
| Clare | Dromeen | Yes | Maternity colony of up to 70 Lesser Horseshoe Bat within a derelict cottage. The colony relocated within the cottage, after their original roosting location beneath a slate roof extension collapsed in 2023. Permission has been provided by Clare Co. Co. to allow the renovation of the existing cottage and construction of a new roost, subject to strict conditions. A bat derogation license was also granted. The lands were accepted onto the Farm Plan Scheme recently and O'Donnell Environmental has been appointed Farm Planners. A bespoke roost is being constructed |
| Clare | Cahiracon | No | Maternity colony of approximately 70 Lesser Horseshoe Bat within a former school building. Several roosting locations (both summer and winter) have been recorded from various locations on a former campus. An intended replacement summer roost was provided, but there is no evidence of usage to date. |

Two additional Lesser Horseshoe Bat roosts will be constructed following the design utilised in the Mulkear Life project, as part of the Foynes to Limerick Road Scheme.

These locations are not associated with any colonies or roosts currently, although historic roosting by Lesser Horseshoe Bat was recorded within a structure less than 100m from one of the proposed roost location. This structure was demolished as part of the Scheme and was subject to derogation (Ref: DER/BAT 2024-152).

The same methodology will be employed, using pre-recorded lure calls aimed at Lesser Horseshoe Bat. These may be recorded from one of the above sites, or a generic call supplied by University of Sussex. The aim for these new roosts which are not associated with extant roosts nearby, is to determine if the playing of calls increases the likelihood of Lesser Horseshoe Bat exploring the newly provided roosts.



Derogation Licence Application Checklist

The table below provides responses to four key issues which will be considered during the derogation license decision making process.

11.1 - Explanation as to why the derogation licence sought is the only available option for works and no suitable alternative exists as per Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations.

X

Anecdotally, various methods have been tried to encourage Lesser Horseshoe Bat to relocate to a more suitable roost. These methods have proven unsuccessful.

The need arises to influence Lesser Horseshoe Bat roosting location especially where the existing roost is compromised, and an alternative is provided or otherwise available nearby.

Discussion has been had with relevant parties including Dr. Fiona Mathew (University of Sussex), Kate McAney and Daniel Hargreaves (VWT), Dr. Tina Aughney and the makers of Apodemus speakers (who are unaware of any similar studies on Lesser Horseshoe Bat specifically but are aware of similar studies concerning other species currently elsewhere in Europe).

If it were determined the use of playback of vocalisations may positively influence the behaviour of Lesser Horseshoe Bat, it would represent a significant benefit to the species.

The alternative would be to not carry out such a study, and persist with the current situation.

Given the low potential for any negative disturbance, the proposal for ongoing observation of response such that any negative effect would be quickly identified, and the fact that no significant Lesser Horseshoe Bat roosting currently occurs in any of the proposed structures.

Alternative solutions are considered below and detailed as to their suitability:

Option A: Do not carry out study

The alternative solution of not carrying out this study was considered. In this scenario, the opportunity to effectively and efficiently conserve Lesser Horseshoe Bat roosts in suboptimal conditions through novel luring techniques would be lost. As Lesser Horseshoe Bat are loyal to their roosting locations, they often do not move between roosts until the current roost is lost in this entirety. This study aims to address this issue.

This option was not considered suitable, and alternative options are required.

Option B: Luring with standard/commercially available calls

The use of mist/harp netting typically involves the use of commercially available calls. The reasoning behind bat responses to theses lures is unknown and are not recommended within proximity to maternity colonies (Dennis and Pryde, 2022).

This option was not considered suitable, and alternative options are required.

Option C: Luring with use of above-described methodology

This option is described in more detail in the above 'Introduction'. The use of recordings of the existing roost (including juveniles) in the attraction of the maternity colony into a more optimal roosting locations is considered more suitable in this instance with a low potential for adverse disturbance effects.

The proposal includes ongoing observation of response such that any adverse effects would be quickly identified. In addition, no significant Lesser Horseshoe Bat roosting currently occurs in any of the proposed structures.



| Option 'C' was considered the most suitable option in this instance. | |
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| 11.2 - Evidence that actions permitted by a derogation licence will not be detrimental to the maintenance of the populations of the species to which the Habitats Directive relates at a favourable conservation status in their natural range as is required under Section 54(2) of the European Communities (Birds and Natural Habitats) Regulations. | |
| The newly provided roosting locations are purpose designed and built for occupation by Lesser Horseshoe Bat and are based upon best available information on the design and construction of Lesser Horseshoe Bat roosts. When the roosts were designed, available literature was reviewed and consultation was carried out with representatives of VWT and NPWS. | |
| As outlined above, in the cases of the four maternity roosts there is strong evidence that the current roosting locations are suboptimal and, in some cases, (e.g. Dromeen) are expected to be lost to bats in the short term due to dereliction. Relocating the colonies to permanent, purpose-built structures would be a significant benefit to the conservation of these colonies. | |
| The effect of the current proposal is likely to be neutral or positive. In any case, even if the use of playback are found to have no effect on the colonies, the current situation will persist and the hope is the colonies begin to use the newly provided structures over time. | |
| A positive effect is possible, but in any case, no effect which is detrimental to the maintenance of the populations of the Lesser Horseshoe Bat at a favourable conservation status in their natural range would occur. | |
| 11.3 - Details of any mitigation measures planned for the species affected by the derogation at the location, along with evidence that such mitigation has been successful elsewhere. | |
| Playback will not be used in the case of the maternity sites during the early maternity season to avoid the risk of distraction of mothers from non-volant pups. Playback will only be used when it is confirmed that pups are all on the wing. | |
| At maternity sites, playback calls will be those recorded from within those associated roosts, to avoid the possibility of disturbance due to the use of unfamiliar, antagonistic or distress calls. | |
| 11.4 - As much information as possible to allow a decision to be made on this application. | |
| Full information is outlined in this supporting document, and this information is considered valid and represents the best available data. | |
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References

- Collins J. (Ed.) (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition). The Bat Conservation Trust, London.
- Dennis, G. & Moira Pryde, M. (2022). Acoustic lure detection distance: A trial to inform guidelines for the use of acoustic lures in bat roosting areas A report to the Department of Conservation (New Zealand) Bat Recovery Group.
- Marnell, F., Kelleher, C., Mullen, E. (2022). Bat mitigation guidelines for Ireland. National Parks and Wildlife Service. Department of Housing, Local Government and Heritage. Irish Wildlife Manuals, No.134, 2022.



Reason, P.F. and Wray, S. (2023). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Chartered Institute of Ecology and Environmental Management, Ampfield.