Derogation under Regulation 54

Lesser Horseshoe Bat Luring Investigation

Date: 26/03/2026

CIEEM REGISTERED PRACTICE 2025-2026
QUALITY I.S. EN ISO 9001:2015 NSAI Certified

O'DONNELL ENVIRONMENTAL

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1 Supporting Information

1.1 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.

O'Donnell Environmental carried out a pilot luring study in 2025 (license reference DER-BAT-2025-269). The study took place in parallel and in co-operation with Dr. Fiona Mathews and PhD student Charlotte Green (University of Sussex) and Daniel Hargreaves (VWT). University of Sussex and VWT are carrying out a similar study in the UK.

1.1.1 Dromeen Roost

This 2025 luring trial was conducted in Dromeen, Co. Clare, one of the four approved study sites for 2025. The existing disused cottage hosts a maternity colony of lesser horseshoe bat (**Plate 1**). A bespoke roost (**Plate 2**) was constructed in 2025 based on a design created by O'Donnell Environmental and in consultation with NPWS Conservation staff and Agri-Ecology Team.

Temperature and humidity monitoring was carried out during the study. Sensors were located in the apex of the 'hot-box' and also the apex of the open section of the roof. In the last two weeks of August 2025 in the 'hot box' the average temperature was 19.6°C ± 4.7°C and the maximum temperature recorded for the period was 36°C. This confirmed that conditions are within the range suitable for Lesser Horseshoe Bat maternity roosting as defined by the VWT - The Lesser Horseshoe Bat Conservation Handbook (average temperature outside roosting cluster 16.3°C, mean temperature within formation of roosting cluster is 34°C).

To date there has been no evidence of Lesser Horseshoe Bat using the new roost, although one Brown Long-eared Bat (internally) and several Common Pipistrelles (externally) were noted to be using the structure.

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

County	Townland	Status
Clare	Dromeen	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 has been constructed and was subject to a luring trial in 2025 for which a neutral effect was observed.

1.1.2 2025 Luring Trial

Luring took place in the new bespoke structure intended for lesser horseshoe bat nearby the existing structure, built as part of the NPWS Farm Plan Scheme.

The luring methodology was designed with cognisance to Dennis and Pryde (2022). Social vocalisations were recorded from the colony (including juveniles) at the current roosting location and these calls replayed in the new roosting location nearby. Recording took place in June and July, and playback took place in August and September 2025, when young were volant and typically less sensitive to disturbances (Reason and Wray, 2023). Raw calls were '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 efficacy of luring was tested through visual observation by surveyors, thermal footage during dusk surveys (**Plate 3**), low-glo infra-red CCTV (**Plate 4**) and passive bat echolocation recording (**Plate 4**).

Lesser Horseshoe Bat from the existing roost flew past the new roost after egress, and the lure would have been audible to them on this flight path (tested using handheld ultrasonic detectors). There was no noticeable evidence of Lesser Horseshoe Bat (or any other species) responding to the lure. Observed individuals appeared to show no alterations in behaviour in response to luring calls and continued on the same flightpath on nights when the lure was operational and not operational.

During the course of the study one Brown Long-eared Bat regularly used the structure as a night roost during the summer and autumn of 2025, both when the lure was operational and non-operational. Common Pipistrelles utilised gaps in fascia and soffit externally for roosting also.

Plate 1 Existing lesser horseshoe bat roost.

Plate 2 New roost.

Plate 3 View of thermal camera during dusk surveys.

Plate 4 Low-glo CCTV monitoring interior of new roost.

2 Proposed (2026) Luring

O'Donnell Environmental proposes to repeat the investigation in 2026, at the Dromeen roost, using the same methodology but in spring and early summer, to test if a Lesser Horseshoe Bat maternity colony is more responsive to playback of juvenile social calls at this time (versus late summer and autumn as previously trialled).

The overall aim of the study remains the same, i.e. to explore a methodology which may encourage Lesser Horseshoe Bats to explore a newly provided roosting space.

One 'Apodemus' ultrasonic speaker would be located within the roost or at the access/egress points and will replay social calls previously recorded.

The response of Lesser Horseshoe Bat will be measured i) by means of visual observation through 'low-glo' CCTV (where possible) or using suitable trail cameras and ii) passive bat echolocation recording. Calls will be played on a schedule of one night on/one night off.

2.1 PERSONNEL

All of the proposed licensees are bat-licensed ecologist with experience bat survey and ecology.

2.1.1 Tom O'Donnell

Tom O'Donnell is a Chartered Environmentalist and a full member of the Chartered Institute of Ecology and Environmental Management. He was awarded a BSc in Environmental and Earth System Science [Applied Ecology] in 2007 and an MSc in Ecological Assessment in 2009, both from UCC. Tom has 19 years professional experience in the environmental industry, including working on projects such as windfarms, overhead power lines, roads, cycleways and residential developments. Tom is licensed by NPWS for roost disturbance and to capture bats. Over the past 19 years Tom has used these survey methodologies, under license when required, to identify activity, behaviour and resting places for all Irish bat species in a wide variety of habitat contexts.

2.1.2 Oisín O Sullivan

Oisín O Sullivan is a Senior Ecologist and Associate member of the Chartered Institute of Ecology and Environmental Management (advancement to full membership of CIEEM is currently under review). Oisín was awarded a BSc in Ecology and Environmental Biology at University College Cork in 2020. Oisín has experience in bat surveys for a large variety of projects including wind farms both onshore and offshore, residential, and linear infrastructure. Oisín has previously been licensed by NPWS to disturb bats (2021 – 2026), photograph mammals (2021 – 2025), and handle bat species (2023 - 2026).

2.1.3 Colm Breslin

Colm Breslin is an Ecologist and a Qualifying member of the Chartered Institute of Ecology and Environmental Management (advancement to full membership of CIEEM is currently under review). Colm was awarded a BSc in Ecology and Environmental Biology at University College Cork in 2023. Colm has experience in bat surveys for a large variety of projects including wind farms, residential, and linear infrastructure. Colm has previously been licensed by NPWS to disturb bats (2023 – 2026), photograph mammals (2023 – 2026), and handle bat species (2023-2026).

2.1.4 Claire McCarthy

Claire McCarthy BSc (Hons) MSc is an Associate member of the Chartered Institute of Ecology and Environmental Management. She was awarded a BSc in Biological, Earth and Environmental Sciences [Zoology] in 2018 and an MSc in Marine Biology in 2022, both from UCC. Claire has contributed to the preparation of EIAR and EcIA reports for renewable energy developments and has experience in preliminary roost assessments and bat activity surveys. Claire has previously been licensed by NPWS for bat roost disturbance (Ref: DER-BAT-2025-42) and photography of all bat species (033/2025).

3 Responses to Derogation Tests

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. 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. There is ongoing discussion and knowledge sharing on this project with relevant parties including Dr. Fiona Mathew (University of Sussex) and Daniel Hargreaves (VWT) 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. Alternative solutions are considered below and detailed as to their suitability: <u>*Option A: Do not carry out study*</u> 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. <u>*Option B: Luring with standard/commercially available calls*</u> 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. <u>*Option C: Luring with use of above-described methodology*</u> This option is described in more detail in the above **Section 2**. 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 the proposed structures.	☒

Option 'C' was considered the most suitable option in this instance.	
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 location is purpose designed and built for occupation by Lesser Horseshoe Bat and is based upon best available information on the design and construction of Lesser Horseshoe Bat roosts (although size was limited by availability of funding). When the roosts were designed, available literature was reviewed and consultation was carried out with representatives of VWT and NPWS. As outlined above, there is strong evidence that the current roosting maternity roosting location is expected to be lost to bats in the short term due to dereliction. Relocating the colony to permanent, purpose-built structures would be a significant benefit to the conservation of the colony 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. There is potential for a disturbance on the individual Brown Long-eared Bat now using the building for night roosting as observed in the 2025 study, during the deployment and collection of equipment with the roost. Given that continued use by Brown Long-eared Bat (inside roost structure) and Common Pipistrelle (in external features) was documented throughout the 2025 study while playback was carried out, there is no anticipated disturbance expected as a result of the playback of lures specifically. There will be no effect detrimental to the maintenance of the populations of Brown Long-eared Bat at a favourable conservation status in their natural range.	☒
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. The existing roosting location is located at the far end of the cottage from the new roost, which two intermediate walls within the structure. Handheld detectors were used to define the range within which the playback vocalisations appear to attenuate, and they attenuate before reaching the roosting location. The proposal includes ongoing observation of response such that any adverse effects would be quickly identified. Should a behaviour that would have a negative impact on the maternity colony the activities will be ceased. This can be achieved before the subsequent night of study as the CCTV camera provides a live feed and summary of nightly motion detection events within the new roosting structure.	☒
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.	☒

3.1 MONITORING IMPACTS OF DEROGATION

The monitoring and reporting of the results of this investigation will be carried out as it was in 2025 (DER/BAT 2025-269.).

Any change in bat species behaviour as a result of the lure (or lack thereof) will be recorded, summarised and provided with the licence return form to aid future research.

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