Ecology RFI An Bord Pleanála Response Report: Galbally Bridge Repair Project

Applicant: Limerick County Council
Location: Galbally Bridge, Co. Limerick
Prepared By: Ecology Research and Solutions
Document Reference: Combined Response to RFI – Nature conservation concerns 2, 3 and 4

1. Introduction

This report has been prepared in response to the nature conservation concerns **2 – Disturbance to and loss to Daubenton's bats roosts, 3 - Disturbance of Otters and 4 - Issues related to Water Quality** listed on the **Request for Further Information (RFI)** from An Bord Pleanála in relation to the proposed repair works at Galbally Bridge, Co. Limerick. The initial ecological findings were reported in *Galbally Bridge Aherlow AA* report in 2024. This report combines clarifications and ecological survey findings referenced in the letters:

- *An Bord Pleanála Galbally Bridge.pdf*
- *An Bord Pleanála Galbally Bridge 27.6.25.pdf*

The first section of this report aims to confirm and further clarify the presence and activity of otters, including potential holts, within the vicinity of Galbally Bridge. Previously recommended mitigation measures are also expanded to outline how they will minimise potential impacts on otters during the proposed works. The second section addresses the potential presence of Daubenton's bat and other bat species, clarifying whether roosting occurs within the bridge structure. The third section provides further detail on the proposed controls and measures to protect water quality during the repair works. Together, these sections will be assessed to confirm the ecological compatibility of the proposed development with local biodiversity and conservation objectives.

2. Section 1 – Otter and Bat Field Surveys:

As requested, a targeted otter (*Lutra lutra*) and bat surveys were undertaken to determine the potential presence of the Annex II species and bat roosts and activity.

Date:18/07/2025

Surveyors: Rory Dalton, Michael O'Connor and James Ambrose

Weather: Dry. Partly cloudy, occasional sunshine, Temperature 17°C.

A detailed otter survey was carried out in accordance with the National Roads Authority (NRA) Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes (2008). The survey area covered the suggested 100-metre stretches of the river upstream and downstream of Galbally Bridge, but actually extended to over 200m upstream and downstream of the bridge. The bridge resurvey was completed on 18/07. The site was reassessed by three ecologists. Changes to the general ecology of the study site were also assessed by comparing the findings to the 2024 survey.

Similarly to 2024 arch 4 (south end of bridge) was a dry arch with no river flow present (*Image 2-1*) and arch 1 to 3 had a moderate to fast river flow passing beneath. Arch 4 had a mostly dry earth floor with little vegetation throughout. These conditions were favourable to complete a footprint and general activity assessment of under the bridge. The majority of the tracks identified were rodent and bird tracks. Some larger mammal footprints were present however they appeared aged and disturbed making them unidentifiable (*Image 2-2*). A trial camera was deployed at this under this arch in a position that allowed the images to capture the full width of the arch.

Image 2-1 – Arch 4, south arch of bridge

Image 2-2 – Unidentifiable prints under arch 4 of bridge

The second stage of the otter survey involved an assessment for the signs of otter presence within a close proximity of the bridge.

The survey found no evidence of otter holts, couches, or active resting sites within this search area. Sprainting and foraging signs were minimal and did not indicate the presence of a regularly used otter territory in this section of the watercourse. Downstream, two spraints were identified however both were over 100m from the bridge. The closest spraint, identified at 125m downstream on a rock, appeared aged. The second spraint, identified at 160m from the bridge on a rock, appeared fresher. A single spraint was identified upstream, approximately 110m from the bridge.

These combined results indicate low-level and infrequent use of this section of river by otters, with no indication of established resting sites or intensive foraging activity in the vicinity of Galbally Bridge. The field survey notes were detailed in *table 2-6* below.

The bridge arches were also reassessed for potential bat roosting activity. Most cracks at the underside of the arches exhibited either cobwebs or moisture at the entry point or within, suggesting no recent bat use. Dry cracks with little or no cobweb accumulation were noted. These cracks will be considered for inclusion in future bat surveys to confirm potential roosting use over time.

Date: 05/08/2025

Surveyors: Rory Dalton, Tadgh Healy and James Ambrose

Weather: Dry. Partly cloudy, occasional sunshine, Temperature 18℃.

The survey commenced with a walkover of the immediate area around the bridge to assess both general ecology changes and for any new signs of otter presence in the area. No changes or indications of otter presence were detected. Arch 4 was then reinspected for new prints. Larger prints assumed to be dogs were detected under the arch. They were accompanied by some light digging/rooting of the dry soil surface. The trail camera was then retrieved and checked. No otter visits to the arch were recorded. Over the 17 day trail cam deployment, the recorded activity consisted of three separate visits by foxes, a small amount of bird activity, and a single visit by four to five foxhounds accompanied by their owner.

A targeted bat emergence survey was carried out on the bridge using two bat detectors and two Pixfra A613 thermal imaging cameras set on record. No bats were seen leaving the bridge on the night, and the recordings from each camera were watched thoroughly again the following day on a large computer screen to double check. High levels of bat activity was recorded along the river channel with multiple species present.

Image 2-3 – Arch 4 – Survey 2, south arch of bridge, light digging/rooting

Image 2-4 – Survey 2 – Dog prints under arch 4 of bridge

Date: 07/08/2025

Surveyors: Rory Dalton, Tadgh Healy and James Ambrose

Weather: Dry. Partly cloudy, occasional sunshine, Temperature 18℃.

A targeted bat emergence survey was carried out on the bridge using two bat detectors and two Pixfra A613 thermal imaging cameras set on record. No bats were seen leaving the bridge on the night, and the recordings from each camera were watched thoroughly again the following day on a large computer screen to double check. High levels of bat activity was recorded along the river channel with multiple species present. An emergence survey was carried out by a third ecologist at the Abbey in order to see what level of bat activity was present during emergence time in this optimal bat roost structure; high levels of activity were observed intermediately after emergence and before the high activity levels at the river were witnessed, suggesting that at least a significant proportion of the bats foraging along the stretch of the river in question were roosting in the Abbey.

Summary of Otter Findings

A series of dedicated otter field surveys along the river corridor completed in 2024 and 2025 indicate that Galbally Bridge is not regularly used by otters. This conclusion is based on the absence of key indicators such as holts, couches, active resting sites, and spraints within the survey area. While occasional transient use is certain, the lack of physical evidence suggests the site is of low importance for otter activity at present.

Map 2-5 - Galbally Bridge Otter survey finding's locations

Table 2-6 – Field Survey results table – European Otter

Site	Date	Findings	Sign found	Notes
Arch 4 - Dry Arch	18-Jul	Visual check on prints under arch - Rodent and unidentified (aged) mammal tracks only	None	
Bridge	18-Jul	Tracks present under dry arch however they appeared aged and deformed making them unable to confirm if they are otter prints.	None	Additional tracks identified - Bird and rodent prints only
Upstream bank	18-Jul	Territorial sprainting identified approx. 110m upstream. Light staining of rocks and vegetation. Appeared to not be used often.	Spraint	Likely to be insignificant with respect to otter presence at the bridge
Downstream bank	18-Jul	Spraint identified approx. 125m downstream, appeared aged. Second spraint identified approx. 160m downstream, appeared fresh.	Spraint	Likely to be insignificant with respect to otter presence at the bridge
Arch 4 - Dry Arch	05-Aug	Visual check on prints under arch - Dry soil surface disturbed, assumed to be dogs, rodent and bird tracks present	None	Prints confirmed on trial cam
Arch 4 - Dry Arch	05-Aug	No otters detected on trial cam - Foxes (3 visits), dogs and birds only	None	Trial cam deployed on 18/07. Retrieved and checked on 05/08

Summary of Bat Findings

During the dusk emergence surveys carried out in 2024 and 2025, a high level of bat activity was recorded both upstream and downstream of Galbally Bridge, as well as within the bridge arches themselves. The greatest level of activity was recorded in arches 1 and 2, with moderate activity noted in arch 3, and minimal activity in arch 4 (the dry arch).

Species confirmed through analysis of bat detector recordings included:

- Daubenton's bat (Myotis daubentonii)
- Leisler's bat (NSL – Nyctalus leisleri)
- Common pipistrelle (Pipistrellus pipistrellus)
- Soprano pipistrelle (Pipistrellus pygmaeus)

Only one structural crevice, located on the underside of arch 2, was observed being used by a bat. A single bat was recorded entering this crevice and emerging 14 minutes later. The bat entered the crevice during a foraging session, perhaps to feed or to rest, and then left again. No other crevices or cracks assessed during the surveys were observed to be used for entry or emergence by bats.

Moor Abbey Ruins, located just north of Galbally Bridge, were also surveyed for bat activity. A notable level of bat activity was recorded at the ruins (12-15 in the air at any one time), with detections occurring prior to any bat activity observed at the bridge. This timing suggests that Moor Abbey may serve as a primary roosting site for bats that forage along the river corridor near the bridge. Additional potential roost sites, such as old farm buildings located to the south and southwest of the bridge, may also support bat populations; however, these locations were not included in the scope of the current survey.

The bridge was assessed as having roosting potential for bats, particularly Daubentons Bats, due to the presence of suitable cracks and crevices; however, no evidence of bat roosting was recorded during the surveys. While the structural features could support the species, the results suggest it was not present at the time of assessment.

The collective results of surveys conducted in 2024 and 2025 suggest that Galbally Bridge is not currently used as a roosting site but is instead used by bats as a temporary resting area during periods of foraging activity along the river corridor. Multiple suitable roosting locations are present in close proximity to the bridge, including Moor Abbey ruins and several old farm buildings in the surrounding area. These structures may support bats that regularly forage along the river corridor, including beneath the bridge itself. The consistent use of the arches by multiple bat species supports the conclusion that the bridge functions as a commuting and foraging route, with occasional use of structural features for resting rather than roosting.

Table 2-7 – Field Survey results table – Bats

Survey detail	Date	Findings	Notes	Results
Visual check - Overall bat roosting potential assessment	18-Jul	Majority of cracks noted as having cobwebs and/or moisture present. Drier cracks more than 10mm wide with no cobwebs were noted as potential focal points for follow-up emergence and closer inspection bat surveying.	Survey completed by 3 ecologists. Static Bat Detector deployed – Song Meter Mini detector just (approx. 3m) downstream of bridge during survey. It was also noted that a high amount of visible surface activity by insects on the river. This was visible both upstream and downstream of the bridge and indicates a very suitable bat foraging area.	All accessible cracks and crevices on Galbally Bridge were inspected during the bat surveys. Approximately 30% were considered potentially suitable for roosting, having adequate depth and entry points ≥10 mm. The remaining 70% were deemed unsuitable due to being too narrow, showing signs of moisture ingress, or being covered in cobwebs, indicating disuse. No confirmed roosts were identified.
Collection of static bat detector	23-Jul	Collecting static detector only	Equipment details - Song Meter Mini detector	
Visual check + emergence survey with two bat detectors and two infrared cameras.	05-Aug	Emergence survey focused on arches with suitable cracks. The Moor Abbey ruins located 80m north of the bridge was noted as a potential for high bat activity within the vicinity of the bridge	Equipment used - Echo Meter Touch 2 – Positioned 3m downstream of arch 3. Anabat Scout Bat Detector – Position 2m to 3m downstream of arch 2. Two infrared camera - Model Pixfra A613. 1 positioned upstream pointed upward into the underside of bridge arches and onto the bridge wall (**see Image 2-9**). The second positioned in a similar position downstream of the bridge (**see Image 2-10**). Survey completed by 3 ecologists.	**1.** Daubenton's bats, NSL (Leisler's bat) bats, common pipistrelle bats and soprano pipistrelle bats were recorded and later analysed on the Anabat Scout Bat Detector and the Echo Meter Touch 2. The first bat was detected was at 21:36. Daubenton's bats were detected early in the survey and soprano pipistrelle were the most common recorded bat 2**.** The infrared cameras detected bats foraging both upstream and downstream throughout the survey. The arches were used thoroughly by the bats to move upstream and downstream of the bridge. No bats were identified emerging from visible sections of the bridge structure throughout the survey (2x infrared cameras and 3x surveyors.
Visual check + emergence survey with inspection camera, two bat detectors and two infrared cameras.	07-Aug	Emergence survey focused on cracks with arches identified as suitable roosting locations. 1 ecologist focused on bat activity at Moor Abbey	Equipment used - Echo Meter Touch 2, Anabat Scout Bat Detector, static bat detector, two infrared camera - Model Pixfra A613. One positioned within arch 2 point upward to cover all cracks that can be potentially utilised by the bats (**see Image 2-11**). The second positioned within a similar position within arch 3 (**see Image 2-9**). Bosch GIC 120C inspection camera. Survey completed by 3 ecologists. 1 ecologist surveyed bat activity at the Abbey ruins just north of the bridge.	**1.** 90 Daubenton's bat, 2 NSL (Leisler's bat), 30 common pipistrelle and 694 soprano pipistrelle were recorded and later analysed on the Anabat Scout Bat Detector and the Echo Meter Touch. The first bat was detected at 21:39. **2**. The infrared cameras detected a single bat entering a crack on arch 2 at 22:22 and flying out of the same crack 14mins later **(see Images 2-13).** No other bats were observed emerging or flying into any other cracks on the bridge. **4.** The survey completed by the Abbey ruins found a high level of bat activity. All bat

				types detected at the bridge were also detected at the Abbey Ruins. The first bat was detected 21:21. From the main doorway to the Abbey Ruins, 10+ bats were visibly flying multiple times during the survey.

Image 2-8 - Map of the particulars of the bat survey

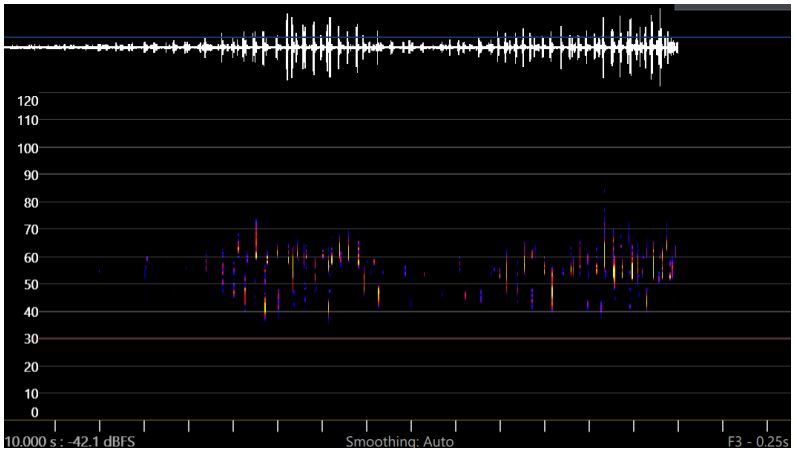


Image 2-8 - Daubenton's bat call sonograph detected on 07/08/25

Image 2-9 - Model Pixfra A613 #1 vantage point 05/08/25

Image 2-10 - Model Pixfra A613 #2 vantage point 05/08/25

Image 2-11 - Model Pixfra A613 #1 vantage point 07/08/25

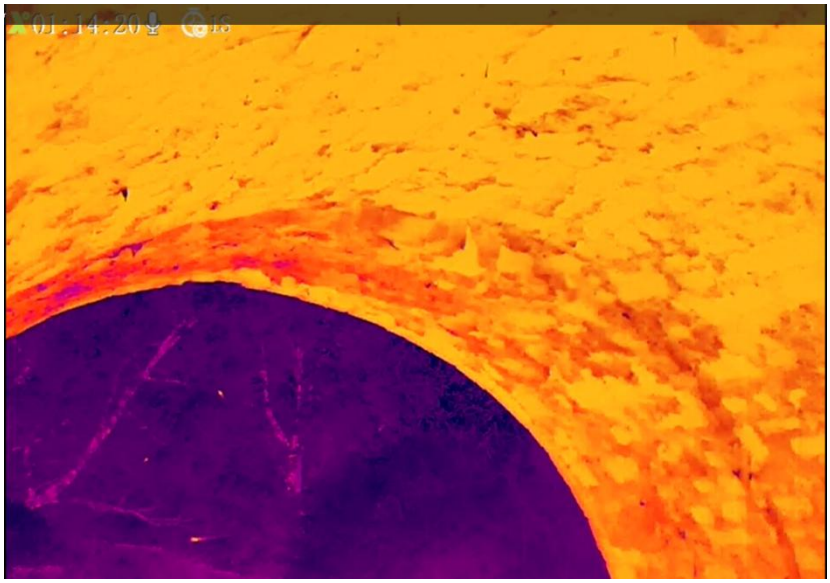
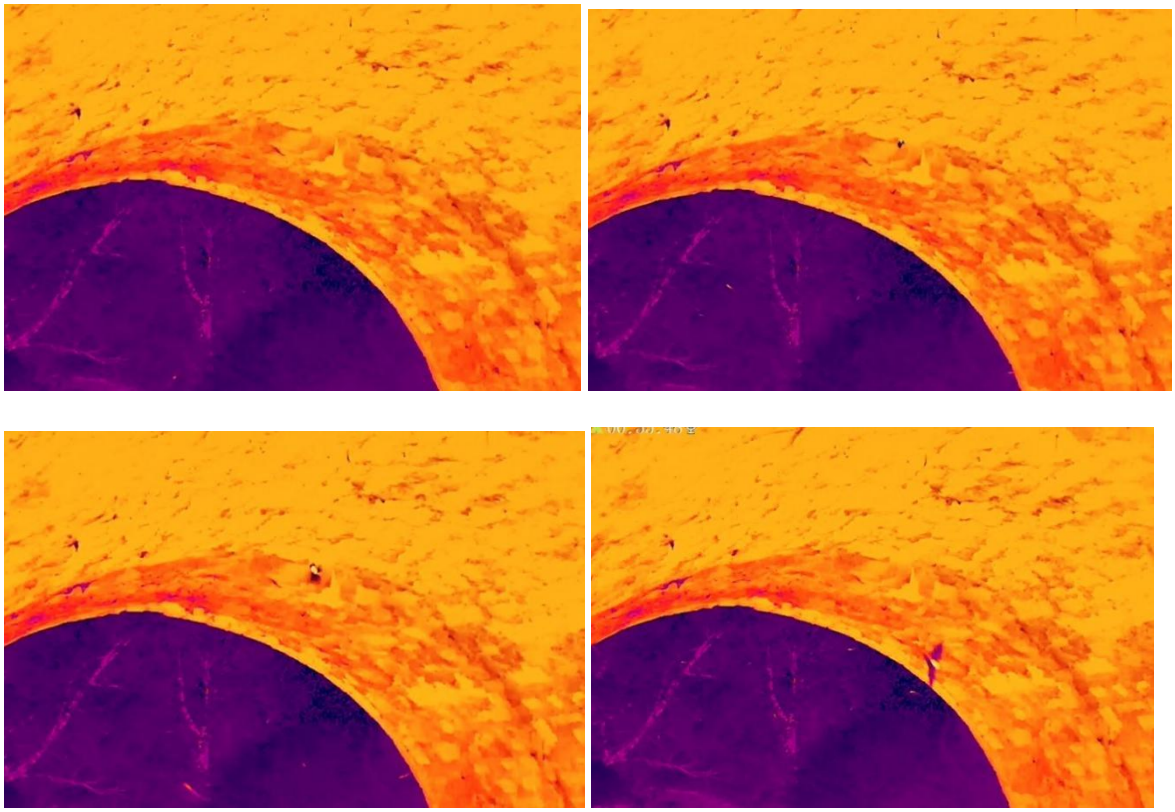


Image 2-12 - Model Pixfra A613 #2 vantage point 07/08/25



Images 2-13 - Series of images identifying the moment a bat re-emerges from a cervice on arch 2 - 07/08/25

Images 2-14 – Moor Abbey Ruins, Galbally Co. Limerick – Source - www.heritageireland.ie

3. Project Mitigation measures:

3.1 Measures to Protect Bat Activity

The following measures should be incorporated into the construction methodology to ensure the protection of bats potentially using the bridge structure:

- Only cracks and crevices confirmed to be unsuitable for bat use should be targeted for repair. These include features with entry points less than 8 mm, signs of moisture ingress, or cobweb-covered entrances, which indicate disuse.
- Where structural stabilisation is required at cracks or crevices identified as potentially suitable for bats, an alternative approach must be adopted. This method must preserve the structural integrity and accessibility of the crevice—such as through structural pinning around, rather than through, the feature.

This approach will ensure that all bat species may continue to use suitable cracks and crevices as potential roosting sites in the future.

Once a construction schedule has been finalised, a pre-works bat survey should be carried out 1 to 2 weeks prior to commencement. This survey will assess whether any of the previously identified usable features have transitioned from occasional resting places to active roosting sites, ensuring appropriate conservation measures can be applied if required.

3.2 Measures to Protect Otters

Given the low level of otter activity recorded during the survey, it is recommended that precautionary measures be implemented during the construction phase to minimise

potential disturbance or obstruction to otters that may occasionally use Galbally Bridge as a passage route. The following site-specific mitigation measures should be implemented by the appointed contractor:

- Sequential Flow Diversion: Use sandbags to sequentially divert river flow and create temporary dry working cells beneath each arch. Sandbag height should not exceed 200 mm above the water level.
- Otter Access Ramps: Install ramped structures upstream and downstream of the dry cells, connected to the sandbag structures, to allow continued unimpeded passage for otters through the bridge.
- Daily Site Housekeeping: At the end of each working day, all construction materials must be removed from within the dry cell area, and the work zone left clean and unobstructed.
- Weather Monitoring: Monitor daily weather forecasts. If heavy rainfall is forecast, works should be postponed, and sandbags removed in advance to avoid flooding risks or impeding otter movement.

These measures will ensure the works proceed in a manner that protects otter movement along the river.

4. Further clarification on issues related to Water Quality

Two measures were suggested in the *Galbally Bridge Aherlow AA 2024* report as part of the proposed works.

4.1 Pollution Control and Site Compound Management

All construction-related materials, including excess spoil, oils, lubricants, and other hazardous substances, must be stored in a prefabricated, bunded storage unit located within the designated site compound.

The compound shall be sited a minimum of 10 metres from the riverbank, on level ground to prevent runoff or accidental spillage into the watercourse.

The recommended location for the compound is within the field to the northwest of the bridge, offering both environmental protection and safe, practical access to the bridge structure.

A temporary raised platform may be installed to bridge the gap between the riverbank and the concreted access section just downstream of the first bridge arch. The platform must be installed in a manner that avoids or minimises any disturbance to the riverbed.

If the recommended compound location is deemed unsuitable by the contractor due to logistical or safety concerns, an alternative location must be reviewed and approved by a qualified ecologist before works commence.

4.2 Installation of Baffles to Improve Fish Passage

To enhance hydrological conditions for fish passage beneath the bridge, it is proposed that angled baffles be installed along the concrete floor under the arches.

Baffles should be constructed from fully cured concrete lentils or untreated hardwood, with a length of 2.5 m to 3.0 m.

Each pair of baffles should be installed in a V-shaped formation, with the downstream ends unconnected, maintaining a gap of at least 50 mm at the closest point.

The baffles must be securely fixed to the concrete substrate using long concrete anchor bolts at 50 mm intervals to ensure stability during high flows.

Installation is to occur under arches 1, 2, and 3 only. No baffles are to be installed under arch 4, which functions as a dry arch and holds no aquatic habitat relevance.

The correct positioning of the baffles is illustrated in Image 4-1, which accompanies this document.

Image 4-1 – Proposed layout to baffles under arches

5. Conclusion

Based on the results of the otter and bat surveys completed in 2024 and 2025, and provided that the recommended mitigation measures are fully implemented, the proposed works at Galbally Bridge are unlikely to result in significant impacts on local bat or otter populations. The incorporation of the measures outlined in this report, along with standard construction best practices and effective pollution control protocols, will ensure that the works proceed in a manner that safeguards local biodiversity and supports compliance with relevant conservation objectives. The contents of this report will inform and support the updated Natura Impact Statement for the proposed works.

6. References

An Bord Pleanála Galbally Bridge, 2025

An Bord Pleanála Galbally Bridge 27.6.25

Aughney, T., Kelleher, C. & Mullen, D. (2008) Bat survey guidelines: traditional farm buildings scheme.

Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

Environment Agency's 'River Habitat Survey in Britain and Ireland Field Survey Guidance Manual 2003'

Galbally Bridge Aherlow AA report, 2024

Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes 2008

Kelleher, C. & Marnell, F. (2021) Bat Mitigation Guidelines for Ireland.

Roche, N., Aughney, T., Marnell, F. & Lundy, M. (2014) Irish Bats in the 21st Century, 1st ed. Bat Conservation Ireland.