

Client Name: Axis
Site Name: Kirkby BESS, Coopers Lane, Kirkby
Project Ref: AxisL-043-003339
Date: 21st May 2026

Kirkby BESS, Coopers Lane, Kirkby: Update 2026 Pre-Commencement Walkover Survey V2

Introduction**Background**

Avian Ecology Limited (AEL) were commissioned by Axis on behalf of their client Pelagic Energy to undertake an update Pre-Commencement Walkover Survey, to comply with the recommendations within the Ecological Assessment Report (EAR)¹, which supported the planning application for the proposed Battery Energy Storage System (BESS) and associated infrastructure (the 'Development'; planning ref.:23/02008/FUL), on land off Coopers Lane, east of the Knowsley Industrial Estate, Knowsley, Merseyside (the 'Site').

The objectives of the survey and this report are:

- To provide an update review of habitats within the Site and note any significant changes since the initial 2023 extended habitat survey;
- Identify the presence of any notable plant or invasive non-native species (INNS) listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended);
- Identify any signs of protected species across Site (namely any new signs of badger, water vole or otter); and,
- Provide recommendations on any further mitigation measures that should be implemented with regards to the Site.

Survey Methodology

The pre-commencement walkover survey was undertaken on 13th March 2026 by K. Love MSc and L. Quarton MSc, and repeated on the 20th May 2026 by K. Love MSc and R. Miller MSc; all of whom are suitably experienced ecologists. The repeated survey conducted in May 2026 included a primary focus on potential water vole along Knowsley Brook.

Habitats within the Site were compared to the original 2023 habitat survey, noting any significant changes. In addition, the survey also looked to identify any new observations relating to the presence of any notable, INNS or protected species (namely signs of badger, water vole or otter).

Badger

¹ Wymondley Solar Ecological Assessment Report, 2021. Avian Ecology.

As recommended by English Nature's *Badgers and Development* (2002)² and *The Classification of badger setts in the UK: A Review and Guidance for Surveyors* (2014)³, the survey comprised the Site (as shown on **Figure 1**) and where possible, a minimum 30 m buffer of suitable badger habitat beyond the Site boundaries to identify evidence of badger activity. The survey assessed all habitats, with a particular focus on features of higher ecological value such as woodland and watercourse banksides.

Evidence of badger activity searched for included badger setts as well as other badger activity such as paths, latrines, footprints or signs of foraging. Methodologies used and any setts recorded were classified according to the published criteria (Harris, Cresswell & Jefferies; 1989⁴ and Badgerland; 2003⁵).

The classification of sett entrances as active, partially used, or disused, follows Harris, Cresswell & Jefferies (1989). Active sett entrances are clear of any debris or vegetation, and will have some of the following features, well-worn paths, spoil mounds, footprints, fresh bedding outside the entrance and / or footprints leading in. Partially used entrances are considered to not show signs of current use (e.g. have vegetation growing across the entrance) but could easily be reused, if required. Disused sett entrances are partially or completely blocked, with substantial excavation required to allow reoccupation.

Main setts are considered to be the most important sett within the territory of a badger group or clan and are where breeding takes place. They tend to be large, with five or more entrances often with large spoil heaps, and are typically used throughout the year. Annexe setts also have many well used entrances and tend to be 50 m - 150 m from the main sett, connected by well-worn paths, but may not be used all year round. Subsidiary setts are not usually connected to the main sett by obvious paths, and may have any number of entrances. Outlier setts tend to have only one or two holes and are used occasionally. There may be no obvious path to an outlier sett.

Water Vole and Otter

During both survey visits a combined otter and water vole check was also undertaken along Knowsley Brook. The survey comprised an assessment of the relative habitat suitability of the watercourse for both species. The survey comprised a 200 m section of the watercourse spanning in both directions from the proposed location of expected construction works at Knowsley Brook.

Notes were taken on any otter field signs encountered including spraints, footprints, feeding remains, slides and potential holts (or other resting or breeding places).

The water vole methodology was broadly designed to follow Dean (2021)⁶ and Dean *et al.* (2016)⁷. A search for field signs was undertaken, indicating the presence or possible presence of water vole along the watercourse.

² Natural England (2011), *Badgers and Development. A Guide to Best Practice and Licensing*

³ Andrews, R. (2014). *The Classification of badger setts in the UK: A Review and Guidance for Surveyors*. CIEEM, London.

⁴ Harris, S., Cresswell, P. & Jeffries, D. (1989). *Surveying Badgers*, London, UK.

⁵ Badgerland. (2003). *Finding Evidence of Badgers*. Hebden Bridge.

⁶ Dean, M. (2021) Water Vole Field Signs and Habitat Assessment; A Practical Guide to Water Vole Survey. Pelagic Publishing, Exeter.

⁷ Dean, M., Strachan, R., Gow, D. & Andrews, R. (2016) The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

A search was undertaken predominantly by walking within or along the watercourse edge, and where this was not possible (due to dense scrub or deep water), undertaking spot checks and searches from the bankside to record the location of any water vole field signs. Searches for field signs were undertaken from the toe of the watercourse, up to at least 1m out into the water and at least 1m up the bank, in accordance with guidance (Dean *et al.*, 2016).

Searches for the following field signs of water vole presence as per Strachan *et al.* (2011)⁸ were undertaken: sightings, droppings/latrines, burrows, footprints, pathways, feeding stations and lawns.

The presence of water vole droppings/latrines is the only field sign that can be used reliably on its own to confirm species presence.

Limitations

The first survey visit was undertaken in mid-March, which is just outside of the optimal botanical period (April- September). This would potentially not allow for the identification of late flowering species; however, with a repeat survey visit in May 2026 and a lack of any INNS identified during previous surveys (conducted in May 2023), this is not considered a substantial limitation to the survey.

The first survey visit was undertaken within the optimal time frame for badger surveys (November to March), as vegetation growth is limited and doesn't obscure sett entrances or other badger signs. The surveys are not full badger surveys, and no sett monitoring has taken place. As such, results and recommendations are precautionary. However, the repeat survey visit in May 2026 also included an inspection of any possible badger signs to determine any changes in potential activity.

The March 2026 water vole and otter check did not comprise a full survey during the optimal survey season for such species, but instead was undertaken on an ad hoc basis whilst surveying for badger. The survey was conducted whilst bankside vegetation growth was limited, with results intended to inform future survey effort during the optimal survey period. As recommended by Dean (2021) and the Water Vole Reasonable Avoidance Measures (RAMs)⁹ produced by AEL, surveys should be undertaken between mid-April and September when water vole are typically active. As such, the May 2026 visit included an updated pre-commencement check along the watercourse.

Results

2023 Results

The 2023 extended habitat survey recorded no signs of INNS, badger, water vole or otter. Habitats for badger were considered suitable within and adjacent to the Site, with Knowsley Brook and its banksides considered suitable for all three species.

2026 Results – Visit 1 (March)

Result and target notes recorded during the survey are illustrated on **Figure 1**, with photographs presented in **Annex 1**.

⁸ Strachan R., Moorhouse T.P. & Gelling M. (2011). Water Vole Conservation Handbook 3rd Edition. Wildlife Conservation Research Unit, Oxford.

⁹ Avian Ecology Limited (2026) Kirkby BESS Water Vole Reasonable Avoidance Measures.

The pre-commencement walkover survey found that habitats within and bordering the Site were largely unchanged from the previous surveys and no signs of INNS was recorded.

The pre-commencement survey recorded no conclusive evidence of badger within the Site, or within 30 m of the Site boundary.

Multiple rabbit burrows were recorded north of the Site access track within adjacent woodland. Amongst the rabbit holes included two larger mammal holes (TN1 and TN2) approximately 16.5 m from the Site. Both holes were considered to have narrow tunnels, signs of rabbit droppings near the entrance and rabbit sized runs spanning from the entrance. Both holes were therefore considered likely to belong to rabbit.

Rabbit activity was also frequently identified along the banksides of Knowsley Brook. Here two larger mammal holes were also recorded, with entrance holes considered large enough to support badger (20 cm x 15 cm and 40 cm x 30 cm). One hole (TN3) was recorded on the southern bankside, approximately 30 m west along the watercourse from the expected location of proposed works. The second hole (TN4) was recorded >55 m east from the proposed works on the northern bankside. Both included signs of rabbit droppings at the entrance, as well as narrow tunnels, and therefore its considered that the enlarged, eroded entrance holes likely belonged to rabbit.

No conclusive water vole evidence was recorded along Knowsley Brook (noting the check was outside of the optimal water vole survey period). Three small mammal burrows were however recorded along the watercourse that were considered to be suitably sized for water vole, but may also be attributed to brown rat. Two holes were recorded on the southern bankside (TN5 and TN6) and one of the northern bankside (TN7). Holes were identified on the watercourse toe / berm approximately 30 m, 32 m and 50 m east, upstream from the expected location of proposed works. No other signs of small mammal activity were recorded at the burrows. The watercourse was considered suitable for water vole.

No evidence of otter was recorded along Knowsley Brook, although the watercourse was considered suitable. A dead tree trunk was recorded c. 25 m east on the southern bankside of the watercourse from the expected location of proposed works. Erosion under the trunk was considered to provide a potentially suitable resting place for otter (TN8), however upon inspection, it was considered that this was connected to an adjacent rabbit burrow and therefore likely used by rabbit.

2026 results – Visit 2 (May)

No conclusive evidence of INNS, badger, water vole or otter were recorded during the second visit in May 2026, with results consistent with the first visit in March 2026. However, an additional small mammal hole (TN9) was recorded along Knowsley Brook that was suitably sized for water vole, but may also be attributed to brown rat. The hole was observed on the southern bank side approximately 20 cm from the water edge. The hole was located approximately 24 m east and upstream from the expected location of proposed works, and approximately 7 m from the other small mammal holes identified in the first visit. No conclusive evidence of water vole was recorded.

Discussion

INNS

The pre-commencement survey found that INNS were still not recorded across the Site, so no further action is required.

Badger

Medium sized mammal holes recorded during the survey were all considered to belong to rabbit, with no conclusive signs of badger activity recorded.

Although evidence of badger presence is not confirmed within the Site or immediate surrounding area, it is considered that the habitats present do provide opportunities for foraging, commuting and sett excavation.

Due to the highly mobile nature of badgers, the results of these pre-construction badger checks should only be valid for a few weeks prior to the onset of construction works within the Site. Should works commence beyond this time considerably, then it is recommended that an updated pre-commencement badger check is conducted to confirm the continued absence of badger setts within the Site and within 30 m of the Site boundaries (where accessible). If a sett is found, suitable advice will be sought from the project ecologist to ensure necessary protection, avoidance or mitigation measures are in place before works proceed.

Water Vole and Otter

No conclusive water vole or otter signs were recorded along Knowsley Brook during March 2026 or May 2026 surveys. While mammal holes of a suitable size were identified outside of the proposed working area, in the absence of other confirmatory evidence (e.g., latrines, feeding remains), it can be considered that the species is likely absent from the surveyed area of Knowsley Brook.

The working area is here considered to be a 10 m buffer from the watercourse bank top. Should works proceed in line with RAMs (as set out in Appendix B of the project 'Construction Environmental Management Plan' (CEMP)), then it is considered likely that no offence will occur under the legislation.

Conclusion

The pre-commencement walkover surveys confirmed the continued absence of any INNS or protected species on Site, so no further action is required.

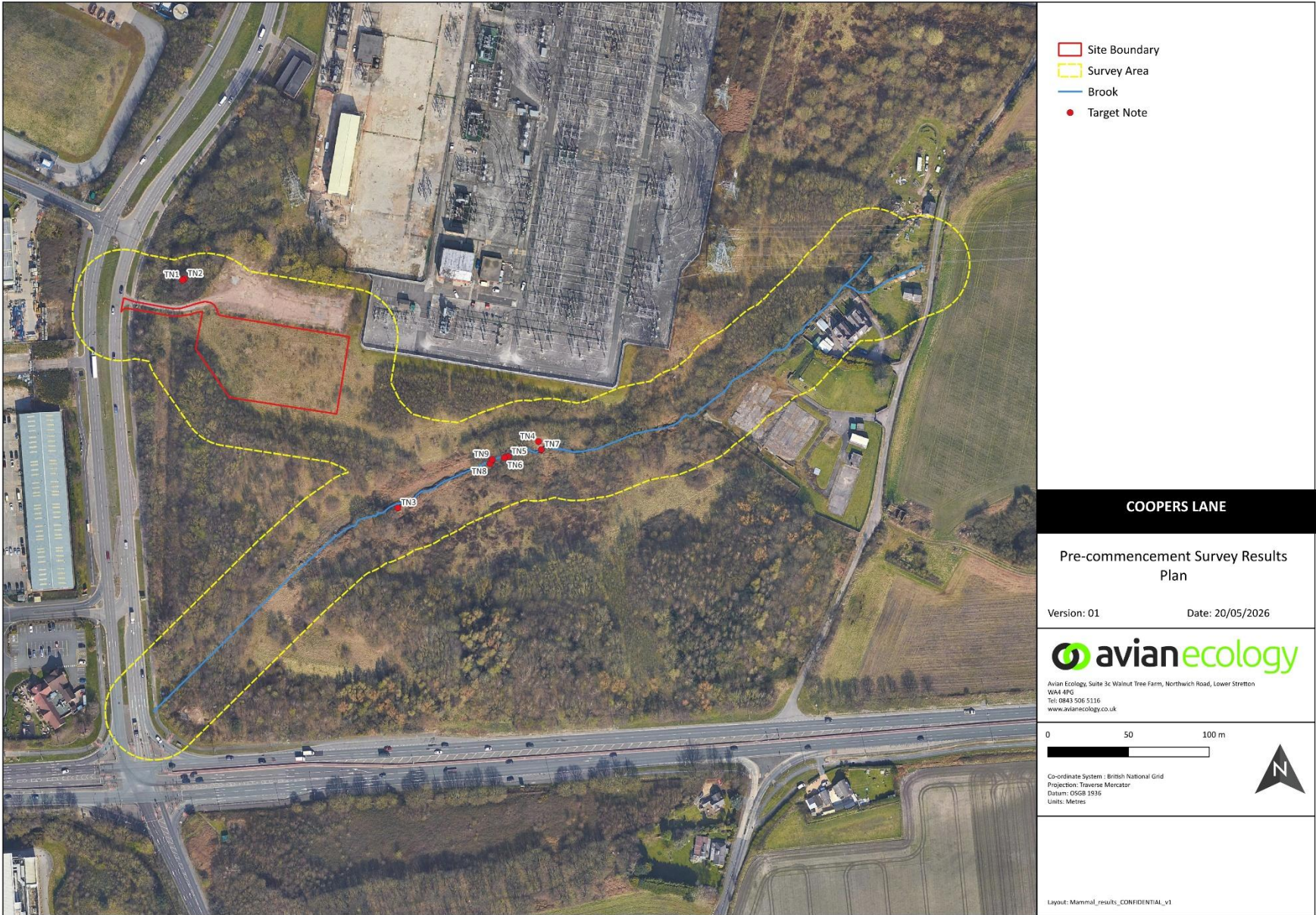
The survey did not confirm badger presence, with mammal holes considered likely to belong to rabbit.

No otter or conclusive water vole signs were recorded along Knowsley Brook.

Prepared by: K. Love *MSc BSc (Hons)*

Reviewed by: J. Whittick *BSc (Hons) MCIEEM*

Figure 1: Pre-commencement Survey Results Plan



Annex 1

Annex 1: Photographs

Photograph	Description
	
TN1: Mammal hole north of the Site access track considered to belong to rabbit. Identified in March 2026.	TN2: Mammal hole north of the Site access track considered to belong to rabbit. Identified in March 2026.
	
TN3: Mammal hole recorded on the southern bankside of Knowsley Brook. Considered to belong to rabbit. Identified in March 2026.	TN4: Mammal hole recorded on the northern bankside of Knowsley Brook. Considered to belong to rabbit. Identified in March 2026.
	
TN5: Small mammal hole recorded along Knowsley Brook considered suitable for water vole. No conclusive evidence recorded. Identified in March 2026.	TN6: Small mammal hole recorded along Knowsley Brook considered suitable for water vole. No conclusive evidence recorded. Identified in March 2026.

Annex 1

Photograph	Description
	
TN7: Small mammal hole recorded along Knowsley Brook considered suitable for water vole. No conclusive evidence recorded. Identified in March 2026.	TN8: Erosion under a dead trunk considered to provide a potentially suitable resting place for otter, although likely to be used by rabbit. Identified in March 2026.
	
TN9: Small mammal hole identified in May 2026 along Knowsley Brook considered suitable for water vole. No conclusive evidence recorded.	