

# A249 KEY STREET JUNCTION IMPROVEMENTS DORMOUSE SURVEY REPORT



**SYSTRA**

# A249 KEY STREET JUNCTION IMPROVEMENTS

## DORMOUSE SURVEY REPORT

### IDENTIFICATION TABLE

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## SUMMARY

Systra Ltd. was commissioned by Kent County Council (KCC) to undertake a hazel dormouse (*Muscardiurus avellanarius*) presence / likely absence survey to support the proposed A249 Key Street junction improvement works, west of Sittingbourne (Ordnance Survey (OS) grid reference TQ 88051 64240).

The Site was located between the A249 Key Street Roundabout (including the initial stretches of the exit roads) and south of the A249 eastbound exit. The dormouse survey area was located on the southern portion of the Key Street Roundabout (eastern edge OS grid reference: TQ 88127 64203 and western edge: TQ 87716 64022) and comprises approximately 550 metres of suitable habitat adjacent to the A249.

Works will comprise re-profiling of the roundabout and road embankment, which will require vegetation clearance in order to facilitate the works. The proposed works are due to begin May 2024 until late 2024.

The preliminary ecological appraisals (PEA) undertaken by Systra Ltd. in September 2020 and was updated in January 2023 (Systra 2020, 2023) highlighted that habitats within and adjacent to the Site offer suitable habitat for hazel dormice and recommended further surveying on this basis.

Given the requirement for vegetation clearance and the presence of dormouse suitable habitat within the works area these works have the potential to impact hazel dormice if present on the Site.

The dormice survey undertaken between April and September 2023 recorded no evidence of dormice at the Site. A number of nests were recorded that were unable to be confidently identified at the time of the survey, although given the findings of subsequent surveys and general characteristics of the nests, were considered more likely be made by wood mice.

Based on the results of the survey, it is considered that dormice are likely absent from the Site.

It is recommended that any vegetation clearance of dormouse suitable habitats (semi-mature broadleaved woodland, broadleaved plantation woodland, lines of trees, dense scrub & hedgerow) as part of these works be undertaken following a precautionary method of working (PMW). This excludes areas of sparse scrub, unvegetated dry ditches and hard standing. A PMW document should be produced to provide details of the recommended methodology to ensure hazel dormice are not impacted by the proposed works. The PMW will require the presence of an ecological clerk of works (ECoW) with a NE hazel dormouse survey licence, to hand search the vegetation prior to any clearance works.

If during the course of works a dormouse or evidence of the species is discovered, all works must cease and a dormouse licenced ecologist must be consulted.

# 1. INTRODUCTION

## 1.1 Background

1.1.1 Systra Ltd. was commissioned by Kent County Council (KCC) to undertake a hazel dormouse (*Muscardiunus avellanarius*) presence / likely absence survey to support the proposed A249 Key Street junction improvement works (Ordnance Survey (OS) grid reference TQ 88051 64240).

1.1.2 The survey area (herein referred to as ‘the Site’) is located towards the southern portion of the Key Street Roundabout (eastern edge OS grid reference: TQ 88127 64203 and western edge: TQ 87716 64022) . Please refer to figure 1 for locations of the nest tubes. It is approximately 2 ha in size and comprises a mixture of semi-natural and plantation broadleaved woodland positioned to the east and south of the Site boundary, respectively. Small areas of semi-improved grassland are also present.

1.1.3 The Site is situated on the western outskirts of the industrial town Sittingbourne and is surrounded by residential properties to the north and east. The wider landscape is dominated by arable land with hedgerow-lined field boundaries and interspersed with small pockets of broadleaved woodland.

1.1.4 The Site is being completed under plan development to enable highway improvements to improve future capacity and operation of the Key Street Roundabout. Improvements include:

- Closing the existing A249 southbound slip road from the Key Street roundabout and introducing a new on-slip connection from Chestnut Street
- Widening several of the Key Street roundabout approaches and exits
- Improving road markings and road signs to provide increased clarity for drivers
- Introducing pedestrian and cycle priority crossings on Keycol Hill, Sheppey Way and Chestnut Street

1.1.5 Habitats recorded within the Site include broadleaved plantation woodland, semi-natural broadleaved woodland, poor and neutral semi-improved grassland, scattered trees, a dry ditch, and hardstanding as part of the roundabout.

1.1.6 Given the requirement for vegetation clearance and the presence of suitable habitat within the Site, the proposed works have the potential to impact hazel dormice if present on the Site.

## 1.2 Preliminary Ecological Appraisal

1.2.1 An initial desk study revealed deciduous woodland, a Habitat of Principal Importance, located 200m north-east of the Site. The data search also noted one record of hazel dormouse positioned 430m to the north-east and review of an adjacent development

planning application (reference: 17/505711)<sup>1</sup> identified the presence of hazel dormouse at a second location 255m to the south-east.

- 1.2.2 Two records of dormouse within 500m of the Site were identified.
- 1.2.3 An initial extended phase 1 habitat survey (JNCC, 2010) of the Site was completed during September 2020 in accordance with the standard methodology. Whilst signs for hazel dormouse were recorded within third party land adjacent to the Site, it was recognised that this area would be protected from the main Site activities.
- 1.2.4 Dormouse boxes were found during this initial survey in September 2020 (OS grid reference: TQ8864). The boxes are monitored as part of the People Trust for Endangered Species national dormouse monitoring programme by an unknown third party.
- 1.2.5 An updated preliminary ecological appraisal (PEA) (CIEEM, 2017) of the Site was undertaken on 24<sup>th</sup> and 25<sup>th</sup> January 2023 by Systra Ltd. Ecologist Vicky Iggo (ACIEEM). The survey established the presence of protected or notable species, invasive species, Habitats and Species of Principal Importance within the Site boundary.
- 1.2.6 The Site supports optimal dormouse habitat and connectivity from the Site to the wider environment, which supports hedgerows and broadleaved woodland, was noted.
- 1.2.7 The habitat within and surrounding the Site was assessed as being optimal due to the varied structure and species composition of the woodland on Site (including hazel, *Corylus avellana*) and the moderate connectivity to the wider landscape.
- 1.2.8 The works associated with the proposed development will result in the severance of dormouse suitable habitat and as such it was determined that further surveys undertaken by a hazel dormouse licenced ecologist would be required.

### 1.3 Purpose of Survey

- 1.3.1 The purpose of the survey is to establish the presence or likely absence of hazel dormice and if present, to assess the potential impact of the proposed works on the species.
- 1.3.2 This report details the methods and findings of the survey work and a subsequent impact assessment. The need for mitigation and/or licences to allow the work to proceed legally is also evaluated.
- 1.3.3 This report presents the findings of the nest tube survey and provides recommendations for ecological mitigation.

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<sup>1</sup> Planning Application reference 17/505711 Land at Wises Lane. Accessed through Swale Borough Council Planning Portal Simple Search (midkent.gov.uk)

## 2. LEGISLATION

2.1.1 Hazel dormouse, their breeding sites and resting places are protected under the Wildlife and Countryside Act 1981 (as amended) and Regulation 41 of the Conservation of Habitats and Species Regulations 2017 (as amended). Under legislation it is an offence to:

- Deliberately capture, injure or kill hazel dormouse;
- Damage or destroy a hazel dormouse resting place or breeding site;
- Deliberately or recklessly disturb a hazel dormouse while it's in a structure or place of shelter or protection;
- Deliberately block access to structures or places of shelter or protection; Possess, sell, control or transport live or dead hazel dormouse or any part of them.

2.1.2 European Protected Species Licences (EPSL's) can be obtained from the relevant Statutory Nature Conservation Organisation (SNCO), which for dormice is Natural England, for any proposed development that may harm dormice in any of the ways outlined above.



**3. METHODOLOGY**

**3.1 Nest tube survey**

- 3.1.1 The survey methodology follows that described by Bright *et al.* (2006).
- 3.1.2 Dormouse survey tubes were deployed within the Site on 27<sup>th</sup> March 2023 by dormouse licenced Senior Ecological Consultant Joe Salkeld (Natural England dormouse licence number 2020-46892-CLS-CLS).
- 3.1.3 The tubes were placed within habitat suitable for hazel dormice which comprised semi-natural and plantation broadleaved woodland. The tubes were installed at least 1m from the ground at approximately 15-20m intervals, where possible. Locations of dormouse tubes are shown in Figure 1.
- 3.1.4 The survey guidelines outline the survey effort required to enable assumed absence if no dormice or theirs signs are recorded. The probability of finding dormice present in the survey tubes varies according to the calendar month in which the check is undertaken. Therefore each month is given a probability index (see Table 1). A minimum score of 20 is required for a valid dormouse survey. The values in Table 1 are based on deploying 50 tubes.

**Table 1. Index of probability of finding dormice in survey tubes, taken from Bright et al., 2006**

	Probability Index Score
April	1
May	4
June	2
July	2
August	5
September	7
October	2
November	2

3.1.5 50 tubes were deployed within the Site in March and inspections for dormouse presence were completed in May, June, July, August and September 2023. As per Table 1 above, the dormouse survey is considered valid as the minimum score of 20 has been achieved.

3.1.6 Using a telescopic mirror with a light and/or sliding the base of the tube open where required, each nest tube check was successfully completed. Licensed surveyor Alex Walker (Natural England Dormouse Licence Number 2022-10946-CL10A-DOR) was present for all dormouse nest inspections. The nest tubes were collected after the final check.

## 3.2 Survey Limitations

3.2.1 A small section (approximately 30m) of the semi-natural broadleaved woodland to the north of Chestnut Street was too dense to deploy nest tubes in however all other locations with dormouse suitable habitat within the Site were accessible and provided plenty of habitat with sufficient spacing to position the 50 dormouse tubes.

3.2.2 On 8<sup>th</sup> August 2023 one plastic sleeve from a nest tube was damaged (likely bird damage) and was replaced. Alongside this, a handful of cable ties were replaced on some of the tubes and they were repositioned slightly to ensure they were stable and secure to the branch.

3.2.3 None of the above are considered significant limitations and the survey effort is still considered valid, providing an accurate assessment of the presence or likely absence of dormouse.

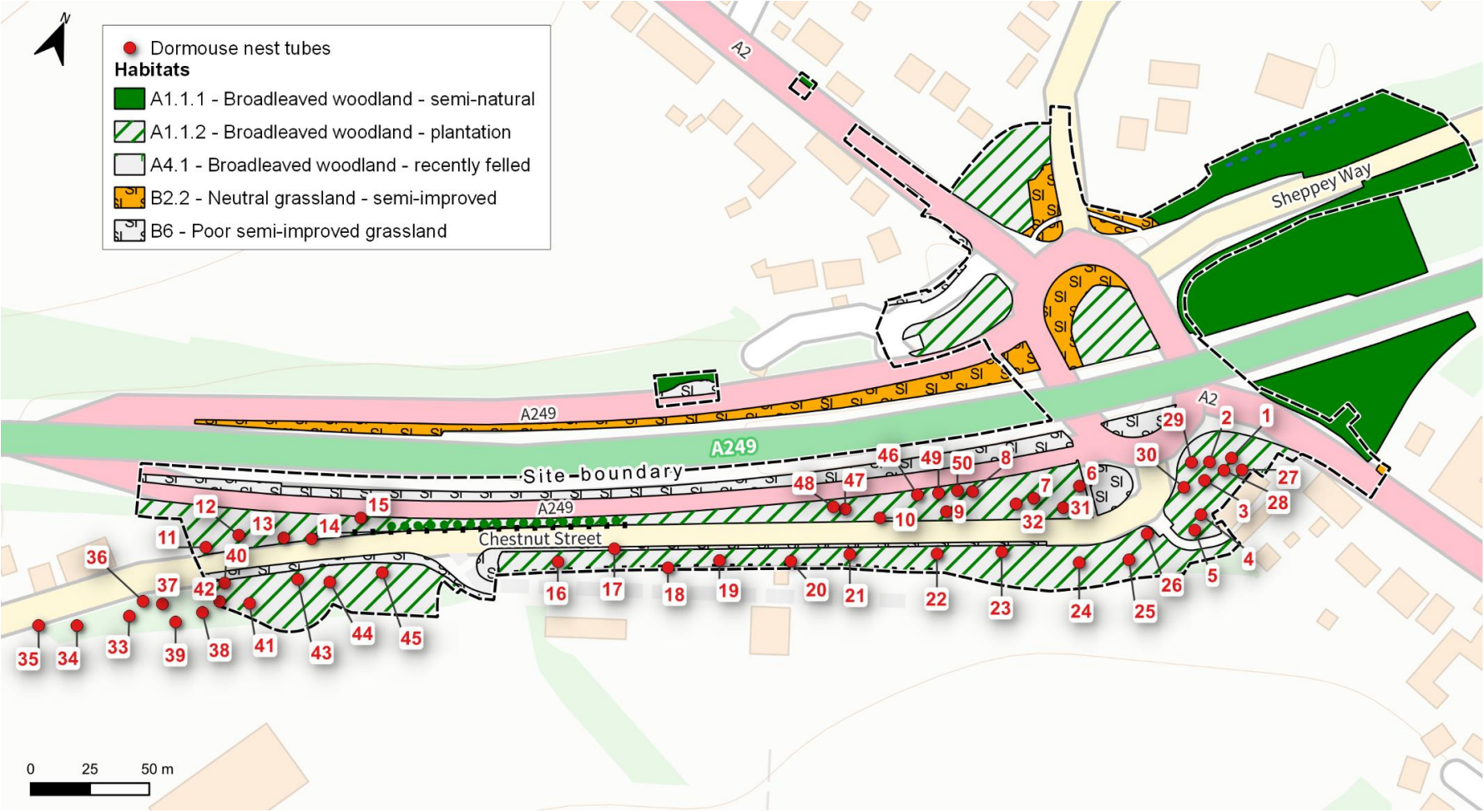


Figure 1. Dormouse Tube Locations

## 4. RESULTS

- 4.1.1 During the first visit, on 9<sup>th</sup> May 2023, nest tube 29 contained several green leaves however beyond this no other signs of dormouse were noted. On the 6<sup>th</sup> June 2023, during the second visit, tube 29 appeared to have more green leaves present (see Appendix 2, Photograph ID 1). However, over the remaining surveys the green leaves did not change or form a nest and no other evidence indicative of dormouse was noted. It is deemed likely that this was the beginnings of a wood mouse (*Apodemus sylvaticus*) nest.
- 4.1.2 On the third visit on 4<sup>th</sup> July 2023 green leaves forming a wood mouse nest were recorded within nest tube 44 (see Appendix 2, photograph ID 2). A cache of cherry pips was recorded directly adjacent on the left. Caching is a behaviour typically associated with wood mice and is considered a diagnostic field sign.
- 4.1.3 On the 8<sup>th</sup> August 2023 during the fourth visit, a green leaf mammal nest was recorded within tube 13 (see Appendix 2, Photograph ID 3). The nest contained a distinct chamber with plenty of green leaves and as such was considered a probable dormouse nest. This nest was not present during subsequent visits. It is likely the nest was not maintained beyond a single night and was blown out of the tube by inclement weather. No further signs of dormice were recorded within this tube during the last site visit.
- 4.1.4 Table 2 below summarises the results of the surveys. Detailed survey notes for each check are as follows;
- 09/05/23 : **All 50 tubes located, checked and no dormouse or evidence of dormouse seen in any of them.** There was a single tube with some green leaves in but only a few and no signs beyond that. Perhaps the start of something that might be seen on a later check?
  - 06/06/23 : No dormice, dormouse nests or confirmed presence evidence found. However, tube 29 again appeared to contain likely mammal activity, and it did have seemingly more green leaves added since visit 1
  - 04/07/23 : A few green leaves in a single tube but otherwise check 3 complete with nothing notable
  - 08/08/23 : Tube 13 had a clear green leaf mammal nest in. As it had a distinct chamber and lots of green material, it has to go down as a probable dormouse nest. No other signs or dormice seen otherwise onsite. Replaced the plastic sleeve on a damaged tube (probably bird damage) and a couple of cable ties.
  - 12/09/23 : No dormice or signs or dormice found, and downgrading of all previous potential signs. Tubes collected

**Table 2. Dormouse presence/absence survey results**

	Date	Surveyors	Weather Conditions	Dormice
1	09/05/2023	Alex Walker Phoebe Collier	Max air temp: 16° Min air temp: 13°	No confirmed evidence of

Visit	Date	Surveyors	Weather Conditions	Evidence of Dormice
			Wind: 1 Dry, cloudy and overcast	dormouse presence
2	06/06/2023	Alex Walker Phoebe Collier	Max air temp: 15 Min air temp: 14 Wind: 2 Dry, cloudy and overcast	No confirmed evidence of dormouse presence
3	04/07/2023	Alex Walker Phoebe Collier	Max air temp: 19 Min air temp: 16 Wind: 2 Dry, patchy cloud	No confirmed evidence of dormouse presence
4	08/08/2023	Alex Walker Phoebe Collier	Max air temp: 18 Min air temp: 16 Wind: 2 Dry, cloudy and overcast	No confirmed evidence of dormouse presence
5	12/09/2023	Alex Walker Phoebe Collier	Max air temp: 21 Min air temp: 18 Wind: 1 Dry, cloudy and overcast	No confirmed evidence of dormouse presence

## 5. ECOLOGICAL ASSESSMENT AND MITIGATION

### 5.1 Impact Assessment

- 5.1.1 The survey identified no definitive evidence of dormice using the Site.
- 5.1.2 The presence of dormice was not recorded during the checks however, dormice evidence was noted. A green leaved nest characteristic of dormouse was recorded within one of the tubes during the fourth visit though this was not maintained.
- 5.1.3 Some of the nests could not be confidently identified at the time of the survey. Based on the characteristics and findings of subsequent surveys they were considered more likely to be transient individuals moving through the Site rather than a breeding population.
- 5.1.4 A European Protected Species Licence (EPSL) for dormice is not required.
- 5.1.5 It can therefore be considered likely that dormice could be present in suitable habitat within the site boundary.
- 5.1.6 It is recommended that any vegetation clearance of dormouse suitable habitats (semi-mature broadleaved woodland, broadleaved plantation woodland, lines of trees, dense scrub & hedgerow) be undertaken following a precautionary method of work (PMW), to avoid impacts to dormice, in the unlikely event they are present.
- 5.1.7 A PMW document should be produced to provide details of the recommended methodology to ensure hazel dormice are not impacted by the proposed works. The PMW will require the presence of an ECoW with a NE hazel dormouse survey licence, to hand search the vegetation prior to any vegetation management works.
- 5.1.8 A toolbox talk (TBT) should be provided to contractors by the ecologist as part of the PMW prior to commencement of works to detail how to identify hazel dormice and their nests as well as what to do should they subsequently be discovered within the Site.
- 5.1.9 A dormouse licensed will need to be present during the two stage clearance to better assess and handle incidental finds. If, during the course of the works a dormouse or evidence of the species is discovered, all works must cease. The precautionary method of works statement will outline the threshold at which a Natural England mitigation licence will be required before works can continue.
- 5.1.10 Vegetation will be cleared through a two stage clearance methodology whereby an initial clearance of above ground vegetation will be undertaken to a height of 300mm using hand tools (chainsaws, brush cutters, hedge cutters and strimmers are accepted). This will be completed whilst minimising ground disturbance within the work area. Clearance will be undertaken towards areas of retained habitat.

## REFERENCES

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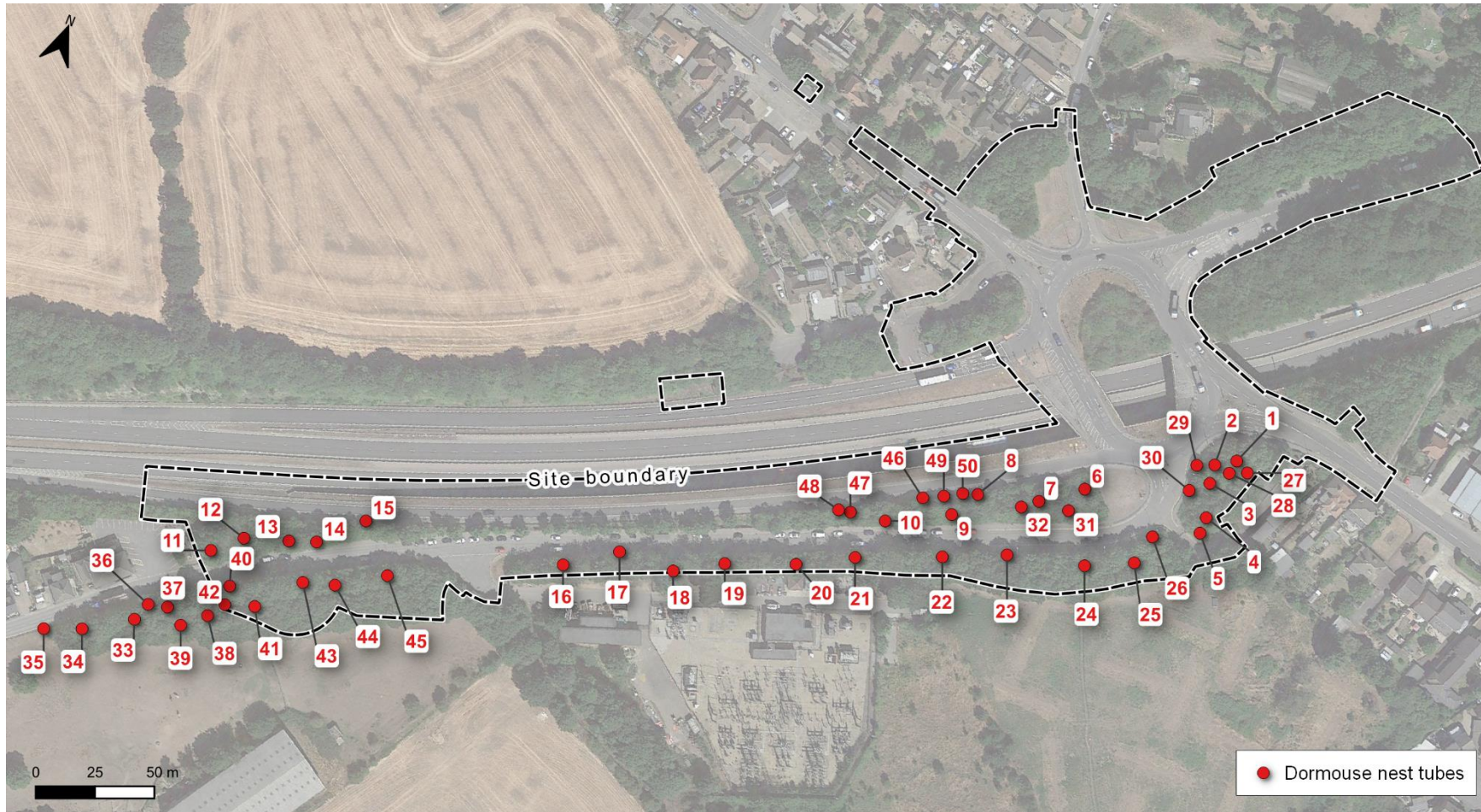
**APPENDIX 1. PHOTOGRAPHIC PLATES**

PHOTOGRAPH ID	DESCRIPTION	PHOTOGRAPH	
1	<p><b>06/06/2023</b>            Visit 2            Nest tube 29            Evidence of several green leaves</p>		
2	<p><b>04/07/2023</b>            Visit 3            Nest tube 44            Evidence of wood mouse nest</p>		



<p><b>3</b></p>	<p><b>08/08/2023</b>          Visit 4          Nest tube 13          Tube 13 had a clear green leaf mammal nest in. As it had a distinct chamber and lots of green material, it has to go down as a probable dormouse nest. No other signs or dormice seen otherwise onsite.          Replaced the plastic sleeve on a damaged tube (probably bird damage) and a couple of cable ties.</p>	

**APPENDIX 2. DETAILED SURVEY DATA**



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