AEWC Ltd

Animal Ecology & Wildlife Consultants

# Hazel Dormouse Survey Report

# Land to the East of Tilletts Lane

## Warnham
## Horsham
## West Sussex

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23-246

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# Summary


- AEWC Ltd were commissioned by Batcheller Monkhouse on behalf of their client to undertake a hazel dormouse (*Muscardinus avellanarius)* survey at Land to the east of Tilletts Lane, Warnham, Horsham, West Sussex at central grid reference TQ 15533 34010 to help inform the proposed development of the site.

- This report details the results of the survey, which was carried out between May and September 2024 by qualified ecologist Natalie Arscott.

- Suitable habitat for dormouse, including native hedgerows and bramble scrub, was identified within the site boundary during a Preliminary Ecological Appraisal. Further surveys were therefore required in order to ascertain whether dormice are present at the site and represent a constraint to the proposed development.

- A total of 50 nest tubes were installed across the site on the 14th May 2024, these being placed in areas considered of greatest potential for dormice within and connected to the site but, also, areas likely to be impacted by the proposals. The tubes were checked monthly in suitable conditions between May and September.

- **No hazel dormice or signs of dormice were recorded on site; therefore, it is considered that dormice are likely absent from the site. A Natural England Mitigation Licence will not be required for the development to continue**.

- **Due to the suitability of on-site habitats for hazel dormouse, it is recommended that a toolbox talk is provided by a suitably qualified ecologist to on-site contractors prior to the start of clearance works. Should a hazel dormouse or evidence of this species be found at any stage during the works, works must immediately stop in this area and a suitably qualified ecologist consulted. A licence may be required for works to proceed**.

# 1 Introduction

1.1 AEWC Ltd were commissioned by Batcheller Monkhouse on behalf of their client to undertake a presence / likely absence survey for hazel dormouse (*Muscardinus avellanarius)* at Land to the east of Tilletts Lane, Warnham, Horsham, West Sussex to help inform the proposed development of the site.

1.2 The proposed development plan involves the construction of approximately 60 dwellings, with associated public greenspace, parking, access roads, and footpaths. The majority of the habitat area on the main part of the site will be affected by these proposals. The footpaths and Tilletts Lane are to be subject to improvement works. See Figure 3 for draft plans.

1.3 A Preliminary Ecological Appraisal was carried out in April 2024 which identified dense bramble scrub and native hedgerows at the field boundaries. These habitats offer suitability for foraging, nesting, and commuting hazel dormice, and are well connected to other suitable habitat in the wider landscape.

1.4 Further surveys were therefore required to ascertain whether dormouse is present at the site and represent a constraint to the proposed development.

1.5 This report details the results of the dormouse survey and outlines recommendations in relation to dormouse and the proposed development of the site.

***Aims and Objectives***

1.6 The objectives of the survey were to:

- Undertake a dormouse survey to determine presence / likely absence of dormice within the proposed development site;
- Evaluate the conservation importance of the survey area in relation to dormice;
- Provide information to inform the impact assessment of development proposals for the area; and
- Provide information for use in the design and development of ecological mitigation and enhancement measures where appropriate.

***Site Location***

1.7 The proposed development site is located at Land to the east of Tilletts Lane, Warnham, Horsham, West Sussex at central grid reference TQ 15533 34010. This is in the village of Warnham, northwest of Horsham and west of the A24. The surrounding landscape includes a diverse mix of habitats, such as ancient and semi-natural woodlands, traditional meadows, grasslands, native hedgerows, and arable and pastoral agricultural lands. Wetlands, ponds, and water bodies, particularly within Warnham Local Nature Reserve, are also present. To the south is residential development. See Figure 1.


**FIGURE 1: SHOWING THE LOCATION OF THE SITE**

***Legislation***

1.8 Hazel dormouse is listed on *Schedule 5* of the *Wildlife and Countryside Act 1981 (as amended)* which affords them protection under *Section 9*, as amended. They are also protected under the *Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019*. In combination, this makes it an offence to:

- intentionally kill, injure or take (capture etc.);
- possess;
- intentionally or recklessly damage, destroy, obstruct access to any structure or place used by a scheduled animal for shelter or protection, or disturb any animal occupying such a structure or place; and
- sell, offer for sale, possess or transport for the purpose of sale (live or dead animal, part or derivative) or advertise for buying or selling such things.

1.9 Hazel dormouse is also a Species of Principal Importance in England under Section 41 of the *Natural Environment and Rural Communities Act 2006*.

***Habitat Requirements***

1.10 The common or hazel dormouse is easy to distinguish from other native small mammals because it has an orange-brown coat and a thickly furred tail. It is nocturnal and highly arboreal. The dormouse's specialised diet includes flowers, fruits, insects,

pollen and nuts. The dormouse is active between late April and early November, spending the remainder of the year in hibernation.

1.11 Traditionally dormouse habitat is ancient semi-natural woodlands with mixed species-rich open coppiced woodland and hedgerows. However, they have also been found in other habitats, such as conifer plantations, hedgerows, and scrub.

1.12 Over the last 100 years, the dormouse population has declined and become extinct over much of England, primarily because of changes in woodland management and habitat fragmentation. The dormouse is now mainly found in southern England, although it also occurs in scattered localities as far north as the Lake District and in parts of Wales.

1.13 Dormice feed on hazel and have a distinctive way of opening the nuts, leaving a smooth, round opening. Hazel nuts opened by Dormice have tooth marks around the rim of the hole, with few tooth marks on the nut surface and no transverse tooth marks across the rim of the nut shell. Hazel nuts gnawed by other rodents show a different pattern of tooth marks and generally have irregular holes. If round holes are gnawed by other rodents these are not as smooth as those gnawed by Dormice.

# 2 Method

***Tube Survey***

2.1 Survey methodology followed Natural England guidance highlighted in the Dormouse Conservation Handbook, Second Edition (English Nature, 2006), tubes were installed in suitable habitat at approximately 20m intervals. The Dormouse Conservation Handbook recommends 50 tubes per site as a rule.

2.2 Fifty dormouse tubes were installed on the 14th May within suitable habitat types that may be affected by the proposed development, as shown in Figure 2. Suitable habitat included bramble scrub and native hedgerows at the field boundaries.

2.3 Tubes were placed in this habitat around all boundaries of the western field in the main development area of the site, along the length of Tilletts Lane, and at the field corner at the junction with Knob Hill. Proposals involve removing sections of hedgerow from the western and eastern boundaries of the western field. Bramble scrub in these field margins may also require cutting back. Improvement works are proposed along Tilletts Lane including road widening at the Tilletts Lane/Knob Hill junction, at this stage it is unknown whether this will involve the removal of hedgerow and/or bramble scrub. The distribution of nest tubes therefore covered all areas and connected adjacent areas of suitable habitat that may be directly impacted by the proposed development.

2.4 There are further hedgerows and lines of trees within the site to the east, however these were not included in the nest tube survey. There is limited habitat connectivity associated with the hedgerows and lines of trees bordering footpaths and roads within

the east of the site, therefore these are unlikely to be used by hazel dormice. Dormice could use the hedgerow with trees along the northern boundary of the eastern field in the main development area, however this meets a dead end at the northeast field corner and is therefore sub-optimal and does not provide a commuting route. The native hedgerow along the southern boundary of this field is newly planted and lacks hedgerow structure, with significant gaps, therefore is entirely unsuitable for dormice. Regardless, all hedgerows and lines of trees in the east of the site are to be retained therefore no direct impacts are anticipated, and a habitat buffer will be retained between the development and boundary hedgerows in the eastern field to minimise disturbance. As such, further survey for these areas was not deemed necessary.


**FIGURE 2: LOCATIONS OF DORMOUSE TUBES**

2.5 Surveying of the tubes commenced in May 2024, checks were undertaken by Natalie Arscott of AEWC Ltd, a suitably qualified ecologist. Should a dormouse nest have been found, its location would be noted, and a Natural England Dormouse Licence holder would undertake a more detailed analysis. The licence holder would also sex and weigh any individual dormice present where possible.

2.6 Surveys were undertaken monthly between May and September. The tubes were checked on the following dates:

- 29th May 2024
- 21st June 2024
- 22nd July 2024

- 20th August 2024
- 16th September 2024

2.7 Each tube was surveyed sequentially. Where a tube could be seen as empty, no further check was made. However, where the tube could not be easily seen, a material "stuffer" was used to block the entrance and the end of the tube pushed back to inspect for evidence of nesting material or an animal. The nesting material was then placed in a large plastic bag for detailed checking. Small plastic bags were taken to put any animals found in for weighing purposes and 50g pesola balances for measuring were used.

2.8 Each survey was carried out in suitable dry weather conditions for surveying dormice. A check of the tubes was also completed within a day to ensure no double counting of animals.

2.9 Evidence of non-target species such as wood mouse (*Apodemus sylvaticus)* and yellow-necked mouse (*Apodemus flavicollis)* was recorded, if found.

***Index of Probability***

2.10 The Dormouse Conservation Handbook 2nd Edition (English Nature, 2006) provides an index of probability for the presence or otherwise of dormice based on a minimum level of survey effort. A scoring system has been devised with each month during the active period being given a score with a minimum score of 20 points needing to be reached to show reasonable survey effort has been undertaken. This score for this survey using the Index of Probability is shown below in Table 1.

**Table 1:** Index of probability

| Month | Index of probability |
|---|---|
| April | 1 |
| **May** | **4** |
| **June** | **2** |
| **July** | **2** |
| **August** | **5** |
| **September** | **7** |
| October | 2 |
| November | 2 |
| **Survey Effort** | **20** |

2.11 Using the Index of Probability table above as a value of different months for surveying, a score can be devised as a guide to the thoroughness of a survey and with the aim of achieving at least 20 points (Chanin and Woods, 2003). Tubes installed at the necessary density (20m intervals) and checked monthly over the whole season would score 25 (the sum of the indices for all 8 months).

# 3 Constraints/Limitations

3.1 No hazel nuts were available to check for evidence of dormouse foraging. The survey therefore comprised a nest tube survey only.

# 4 Results

4.1 The site has good suitability for hazel dormouse. There are several mature native hedgerows across the site in addition to belts of dense bramble scrub at the southern and western boundaries. These offer opportunities for commuting, foraging, and nesting. Dormice may also hibernate at the base of these features.

4.2 There is habitat connectivity between the site and off-site woodland and hedge and tree lines to the west, therefore any dormice present in the wider landscape could move onto the site. It is however noted that there are no records for hazel dormouse within 2km of the site within data from Sussex Biodiversity Records Centre, therefore their presence or likely absence in the local area is unknown.

| | |
|---|---|
|  |  |
| **Photograph 1:** Native hedgerow within the site. | **Photograph 2:** Belt of bramble scrub in the field margin. |

4.3 No dormice or other evidence of dormice (such as nests) have been recorded present on the site during any of the survey checks, and it is considered unlikely that they are present on the site within areas to be impacted.

4.4 A small number of rodent nests (likely yellow-necked or wood mouse) were recorded within tubes scattered around the site during the surveys. These nests comprised loosely piled leaves.

4.5 The results of the survey are detailed in Table 2 below.

**Table 2**: Dormouse survey results

| **Visit number** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| **Date** | 29/05/24 | 21/06/24 | 22/07/24 | 20/08/24 | 16/09/24 |
| **Temperature ºC** | 18ºC | 18ºC | 21ºC | 21ºC | 18ºC |
| **Weather Conditions** | Dry, sun and clouds | Dry, clear | Dry, overcast | Dry, sun and clouds | Dry, sun and clouds |
| **Dormouse** | | | | | |
| adult male | 0 | 0 | 0 | 0 | 0 |
| adult female | 0 | 0 | 0 | 0 | 0 |
| juvenile male | 0 | 0 | 0 | 0 | 0 |
| juvenile female | 0 | 0 | 0 | 0 | 0 |
| unclassified | 0 | 0 | 0 | 0 | 0 |
| **Total** | **0** | **0** | **0** | **0** | **0** |
| **Present in tube** | 0 | 0 | 0 | 0 | 0 |
| **Field Signs** | 0 | 0 | 0 | 0 | 0 |
| **Dormouse Nest** | **0** | **0** | **0** | **0** | **0** |
| **Non-Dormouse Nest** | 0 | 0 | 2 | 4 | 5 |

# 5 Conclusions & Recommendations

5.1 **Hazel dormouse or evidence of this species were not found during the survey and there are no biological data records of dormice within 2km of the site. As such, it is considered that hazel dormice are likely absent from the site and there are no known constraints regarding these species and the proposed development**.

5.2 Due to the suitability of on-site habitats for hazel dormouse, **it is recommended that a toolbox talk is provided by a suitably qualified ecologist to on-site contractors prior to the start of clearance works**. This should include information about the legislation regarding hazel dormice, their appearance and the appearance of their nests, and the procedure to follow should a hazel dormouse or potential evidence of this species be encountered on-site.

5.3 **Should a hazel dormouse or evidence of this species be found at any stage during the works, works must immediately stop in this area and a suitably qualified ecologist consulted.** A licence may be required for works to proceed.

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