

Dormouse Survey 2017

Land east of Wandley's Lane
Fontwell, West Sussex

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LIABILITIES:

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living animals and plants are capable of migration/establishing and whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date.

This report provides a snap shot of the species that were present at the time of the survey only and does not consider seasonal variation. Furthermore, where access is limited or the site supports habitats which are densely vegetated only dominant species may be recorded.

The recommendations contained within this document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to or during works.

1.0 Introduction

Background

- 1.1 The Ecology Partnership was commissioned by Welbeck Strategic Land II LLP to undertake a dormice survey of land east of Wandley's Lane, Fontwell, West Sussex, BN18 0QR.
- 1.2 This report presents the results of the survey on site so far, which aims specifically to determine the likely presence or absence of dormice on site.
- 1.3 Section 2 of this report sets out the methodology of The Ecology Partnership's survey. The results so far are contained in Section 3 and the implications discussed in Section 4. Conclusions are provided for in section 5 of this report.

Site Context and Status

- 1.4 The site lies to the east of Wandley's Lane in Fontwell, West Sussex (SU 95648 06681). The site covers approximately 6.98ha and consists of grassland fields with tree lines, hedgerows and woodland edge. The surrounding area consists of medium-density housing, agricultural land and woodland. Wandley's Copse lies directly adjacent to the eastern boundary of the site and is designated as ancient woodland.
- 1.5 The approximate red line boundary of the site is shown in Figure 1 below. This is also the approximate survey area.



Figure 1: Approximate red line boundary of the site

Description of the Proposed Development

- 1.6 The outline planning application is for up to 160 residential dwellings including 30% affordable, landscaping, open space and access provision. The final design will be informed by a number of surveys, of which ecology is one.

2.0 Dormouse Survey Methodology

- 2.1 A total of 50 dormouse tubes were established in the hedgerows, tree lines and woodland edge within the site on 8th May 2017 (Figure 2). Tubes could not be put up along some boundaries due to the gappy nature of the hedgerows. The neighbouring ancient woodland (Wandley's Copse) is on private property and access has not been possible. Each dormouse tube on site was established as per Natural England guidelines, attached

to the underside of a suitable branch. Some of the tubes were installed at intervals of less than 20m apart due to the size of the site and some areas being unsuitable to hang tubes.



Figure 2: Location of dormouse tubes on land east of Wandley's Lane

- 2.2 Checks were undertaken once a month from June - November 2017. This enabled a recommended effort score of 20 to be achieved according to the Index of Probability in the Dormouse Conservation Handbook. This is the minimum score considered necessary in order to detect presence/likely absence of dormice.
- 2.3 Surveys have been undertaken by Alexia Tamblyn (dormouse survey licence CLS 138) under the Natural England Class Survey Licence WML CL10A and accredited agents.
- 2.4 In addition to the nest tube checks, hazelnut searches were also carried out in October 2017. This survey requires searching an area of 10 x 10 metres around heavily fruiting hazel for 20 minutes, with all nuts picked up so that no double counting occurs. All opened nuts will be inspected to see if they have been opened by dormice. Using this method, it has been estimated that after checking three such squares, there is an 80% chance of finding a nut opened by a dormouse, if dormice are indeed present. If no nuts

opened by dormice have been found in five squares, it is considered that there is a 90% chance that dormice are not present on site. False negatives are possible due to squirrel competition etc., so this method should never be used in isolation to determine likely absence.

3.0 Results

3.1 Surveys undertaken in June, July and August 2017 did not find evidence of dormice using any of the nest tubes within the site. However, evidence of dormice in the form of adult dormice and nests were found in September, October and November 2017.

3.2 In September, three tubes were found to contain adult dormice and an additional two tubes contained empty nests which appeared to have been made recently (Figures 3). All tubes containing evidence were located in the southeast corner of the site in both the woodland and adjacent tree line (Figure 4).

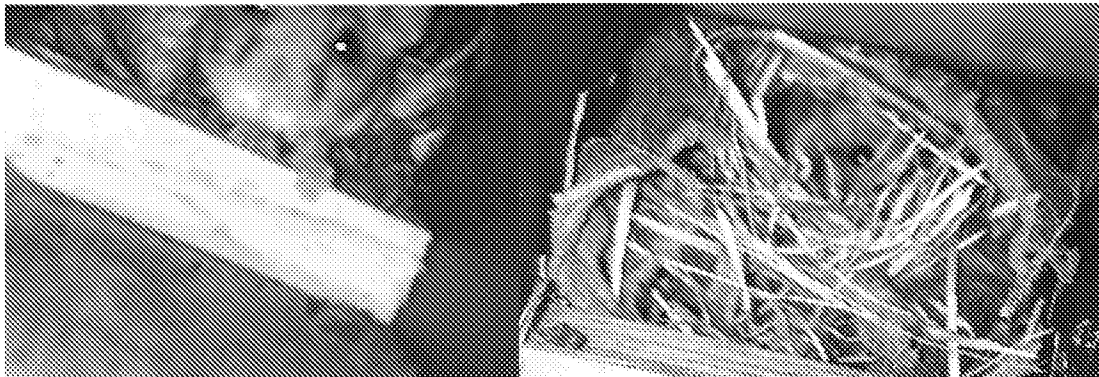


Figure 3: Two adult dormice found in separate tubes along the eastern tree line



Figure 4: Location of tubes with adult dormice (red) and empty dormouse nests (yellow) found in September 2017

- 3.3 In October, three tubes were found to contain dormice and their nests. Adult dormice had already been found in two of these tubes in September and it is believed the same individuals were found during the October check (Figure 5). However, dormice were also found in a tube which was empty in September. This was found to contain one adult dormice as well as at least one juvenile (Figure 6). The tube was not investigated further to keep disturbance to a minimum. In addition, three tubes were found to contain empty dormouse nests (Figure 7). Two of these were identified in September and the third empty nest within the woodland contained an adult dormouse in September but did not during the October check.



Figure 5: Adult dormice found in the same separate tubes in September and October 2017

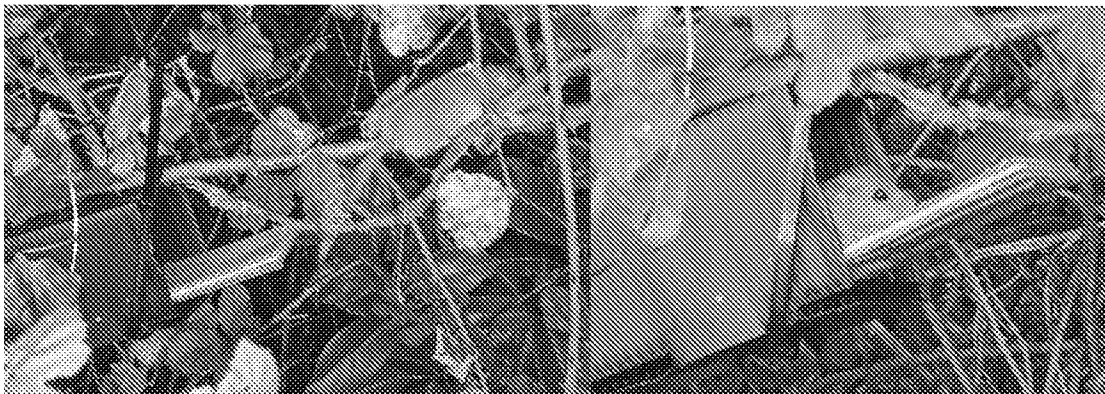


Figure 6: Adult and juvenile dormouse found in same tube in October but not September

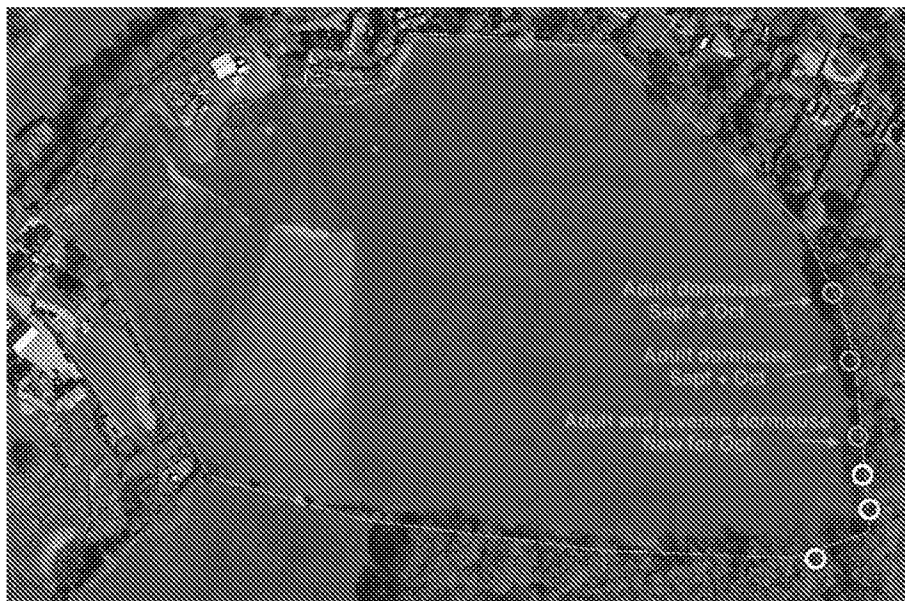


Figure 7: Location of dormice (red) and empty nests (yellow) found in tubes in October 2017

- 3.4 A hazelnut search was also carried out in October. Whilst there were a number of fruiting hazel trees found along the edges of the site, no nuts opened by dormice were found. The majority of the nuts identified were either unopened or had been opened by squirrels or birds.
- 3.5 In November, four adult dormice were found in tubes in the southeast corner of the site (Figure 9). Some of these adults have been found in the same tubes as previous checks although one appeared to have moved to another tube and made a new nest. At the same time, the tube previously occupied by the dormouse was found to contain an adult wood/yellow-neck mouse. In addition to the empty dormouse nests previously found in the southeast corner, a nest was also found along the northern boundary tree line (Figure 10). This nest was not considered to be complete but consisted of a partial woven structure and some green leaves which are characteristic of a dormouse nest.



Figure 9: Location of adult dormice (red circles), wood/yellow-neck mice (brown) and empty dormouse nests (yellow) found in November 2017



Figure 10: Partially constructed dormouse nest along northern tree line found in November 2017

4.0 Discussion

- 4.1 Surveys have identified at least four individual dormice on site and three additional empty dormouse nests. This means that dormouse presence has been confirmed on site.
- 4.2 As dormice have been found using the site, any development works will have to consider their presence and any works which would involve the loss of habitat will need to be carried out under a licence from Natural England.
- 4.3 Wandley's Copse is outside of the development and it is understood that a 15m-19m buffer between the development and the ancient woodland has been incorporated into the scheme. The tree line along the eastern boundary is also to be retained although this will need further protection and enhancements. As such, the mitigation and enhancement strategy for dormice will focus on extra planting along the edges where dormice are present and creating new habitat along the southern and western boundaries.

- 4.4 It is considered that there will be limited direct impacts in terms of habitat loss. However, it is the indirect impacts which are likely to pose a risk to dormice in the long term. Indirect impacts which need to be considered include increased recreational pressure on the ancient woodland habitat as well as a potential increase in predators due to the likely increase in domestic cats as a result of a residential development. These impacts are discussed further below.

Dormice Legislation

- 4.5 The dormouse is a European Protected Species (EPS) and as such it is protected from deliberate killing, injury or disturbance. In addition, its breeding sites and resting places are absolutely protected with no requirement to show that their destruction was deliberate or reckless. The aim of this law is to protect the favourable conservation status (FCS) of the species. The dormouse is further protected by the Wildlife and Countryside Act 1981 (as amended). This law provides protection to individual animals as well as breeding and resting places, making the deliberate killing or injuring of individual dormice unlawful.
- 4.6 Due to the laws providing protection to dormice, any disturbance or destruction of their nests is unlawful unless done under a licence from Natural England. Killing or injuring cannot be done under licence.
- 4.7 Current plans involve cutting through the northern tree line to provide two new access routes onto site. One partial dormouse nest has been found along this tree line suggesting they are using this feature. It is well connected to the tree line on the opposite side of Wandley's Lane due to overhanging branches and is considered to be a suitable corridor. Therefore, the development will be affecting suitable dormouse habitat which may lead to disturbance and potential destruction of nests and a licence from Natural England must be applied for. This can only be done after planning permission has been received.

- 4.8 Individual animals will also be affected and are vulnerable to killing or injuring unless an appropriate mitigation strategy is put in place. A detailed mitigation strategy for maintaining the FCS and for minimising the risk of causing death or injury to individuals is outlined in detail below.

Habitat suitability and population estimate

- 4.9 The majority of the habitat on site is a large open grassland field with tree lines and a woodland edge along the boundaries. The open field is not suitable for dormice; however, the tree lines and woodland edge were considered to be optimal habitat and provide a wide variety of shelter and nest-building opportunities. Wandley's Copse is outside the red line boundary; however, the tree lines and woodland edge are included.
- 4.10 The Dormouse Conservation Handbook cites various studies that give an estimate of likely dormouse numbers per hectare in different types of habitat. Approximately 0.5ha of the site is considered to be oak and hazel, which was found to have a mean spring density (pre-breeding population) of 2 adults per hectare. Therefore, the on-site population is estimated at 1 dormouse. This is greatly exceeded by the latest survey which identified at least four individuals.
- 4.11 The woodland to the south of the site is a continuous habitat with the habitat on site and highly likely to support dormice. This woodland has not been surveyed for dormice due to problems with access. However, it is considered to be dominated by oak and hazel, therefore the density estimate for the rest of the woodland is based on 2 adults per hectare. The woodland not included in the site is approximately 3.14ha, leading to a total estimate of 6.28 dormice.
- 4.12 This leads to a total population estimate of 7.28 dormice across the whole continuous habitat. It should be noted, however, that the suitability of the woodland for dormice is dependent on its management. Dormice thrive in early succession habitats, therefore if the woodland is not managed appropriately it may become shaded with a dense canopy

making it less suitable for dormice due to a lower diversity of species and therefore food sources.

Mitigation and Enhancement Strategy

- 4.13 According to current plans, the majority of the dormouse habitat on site is to be retained and a buffer is in place between the development and Wandley's Copse. However, two new access routes are proposed along the northern boundary which would result in a small amount of habitat loss. This work can only take place under a Natural England and under the supervision of a licenced ecologist.
- 4.14 The vegetation clearance should be conducted in September and October. It is considered that this is the time of the year when dormice are least sensitive to disturbance, prior to hibernation, and young should have dispersed. All site operatives involved in habitat clearance works will receive a tool box talk by a suitably qualified ecologist. If a dormouse is encountered at any time, works will be halted pending consultation with the suitably qualified ecologist.
- 4.15 To compensate for any habitat loss and to provide new habitat on site for dormice, it is recommended that new hedgerows and tree lines be planted along all boundaries, particularly where there are gaps (see Appendix 1). This will help to improve habitat connectivity across the site for a range of species including dormice. Planting should use species which provide food sources for dormice throughout the year, including hazel, oak, honeysuckle, sycamore and wayfaring tree. Bramble should also be left to grow where possible as it is an important food source for dormice.
- 4.16 It is considered that whilst some habitat loss and fragmentation will occur, the most significant impacts from the development would be those associated with domestic cats and increased recreational pressure on the ancient woodland habitat. Mitigation measures to reduce these impacts are outlined below.

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- 4.17 The plans already incorporate a 15-19m buffer between the development and Wandley's Copse. Since dormice were also found along the eastern boundary tree line, a buffer zone should also be implemented along the area where dormice were found (see Appendix 1). It is recommended that several lines of additional planting within these buffer zones be implemented to provide a natural fence line. Species which should be planted include holly, hawthorn, blackthorn and dog rose. Bramble should also be left to grow. The use of thick thorns in the planting scheme will provide dormice protection from pets such as cats and dogs. Overall, two parallel hedges of thorny species should be planted along these edges with a hedgerow of beneficial species (see hedgerow species above) between them and the woodland. This planting should be approximately 6m wide to provide an effective barrier.
- 4.18 Currently, the plans show that a SUDS pond is to be created in the southeast corner of the site, adjacent to where dormice have been identified. There should be a sufficient buffer maintained between the ponds and the boundary so that the 6m thorny buffer planting can be incorporated. A similar buffer should also be maintained between the proposed pumping station and the boundary to take into account the thorny buffer.
- 4.19 Prior to works commencing, it is recommended that dormice boxes be erected within Wandley's Copse, if possible. Permission from the landowner will be required but these would aid dormice in finding new safe nesting areas and allow them to adjust to the modified habitats on site. Boxes can also be put up in areas of suitable habitat on site and they will help to increase the carrying capacity of the habitats on and off site. They should be established at a variety of heights, but above standard human reach to prevent interference and should be installed by suitably qualified personnel. It is recommended that at least 15 boxes are erected on and off site.
- 4.20 Post-development, both habitat management and dormouse population monitoring will be required as part of the Natural England licence. Habitat management and enhancement will include maintaining the hedgerows and tree lines, planting along the boundaries of the site as well as additional planting where required for the foreseeable
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future. Bramble should be left to grow where possible. Monitoring of the dormouse population will be carried out by a licenced ecologist twice a year (May and September) for three years following the completion of development works. Funding for both activities can be secured through a Section 106 agreement and a detailed method statement can be conditioned as part of the planning permission.

5.0 Conclusions

- 5.1 The habitats on site, including the tree lines, hedgerows and woodland edge, were considered to provide suitable habitat for dormice during the preliminary ecological appraisal carried out in April 2017. Records also revealed that dormice were present approximately 700m east of the site in 2011 with connective habitat between Potwell Copse and the site.
- 5.2 A total of 50 dormice nest tubes were hung up in suitable habitat around the site in May 2017 and checks were carried out between June and November 2017. At least four dormice were found in tubes in the southeast corner of the site along with three additional empty nests.
- 5.3 Since the current proposals will affect some areas of suitable dormouse habitat on site, particularly the northern tree line, a Natural England licence will be required for clearance works. This must be carried out in a sensitive manner and under ecological watching brief.
- 5.4 The most significant impacts of development are considered to be indirect impacts resulting from an increased level of predators, such as domestic cats. As such it is recommended that large buffers are established adjacent to the woodland habitat, and that planting uses species which are thorny to prevent cats entering this protected area.
- 5.5 It is also recommended that additional habitat for dormice be provided on site and connectivity is improved. Hedgerow and tree planting should be carried out along the
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boundaries of the site, particularly where there are gaps and the buffer zone should be planted in such a way as to provide successional habitat with a diversity of species.

- 5.6 Dormouse boxes should be established within the Wandley's Copse, if possible, and with the hedgerows and tree lines on site to provide new nesting opportunities for dormice.
- 5.7 Habitat management and monitoring will be required post-development as part of the Natural England licence. Monitoring should be carried out by a suitably qualified licenced ecologist and checks will be carried out twice a year for 3 years. Funding for both activities can be secured through a section 106 agreement.
- 5.8 It is considered that by following the mitigation and enhancement strategy as outlined then the favourable conservation status of dormice in the local area will be maintained.

6.0 References

Bright, P., Morris, P. & Mitchell-Jones, T. (2006) *The Dormouse Conservation Handbook (Second edition)*. English Nature, Peterborough.

Bright, P. & MacPherson, D. (2002) *Hedgerow management, dormice and biodiversity (Report number 454)*. English Nature, Peterborough.

Appendix 1: Proposed enhancement areas



Key

-  Woodland
-  Buffer zone area with recommended thorny planting and maintenance of successional habitat
-  Retain and enhance where possible
-  Recommended new hedgerow and tree planting to improve wildlife corridors
-  Adult dormouse in nest
-  Empty dormouse nests
-  Survey boundary

Site: Land east of Wandley's Lane
Client: Welbeck Land
Drawing Date: November 2017
Drawing Title: Dormouse locations and proposed enhancement areas

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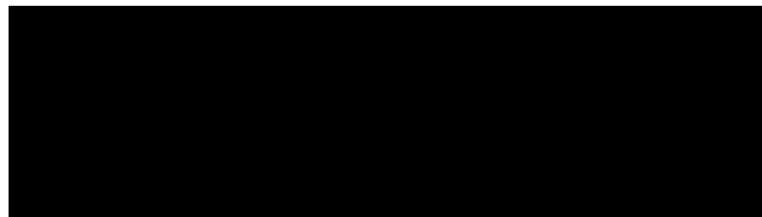
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