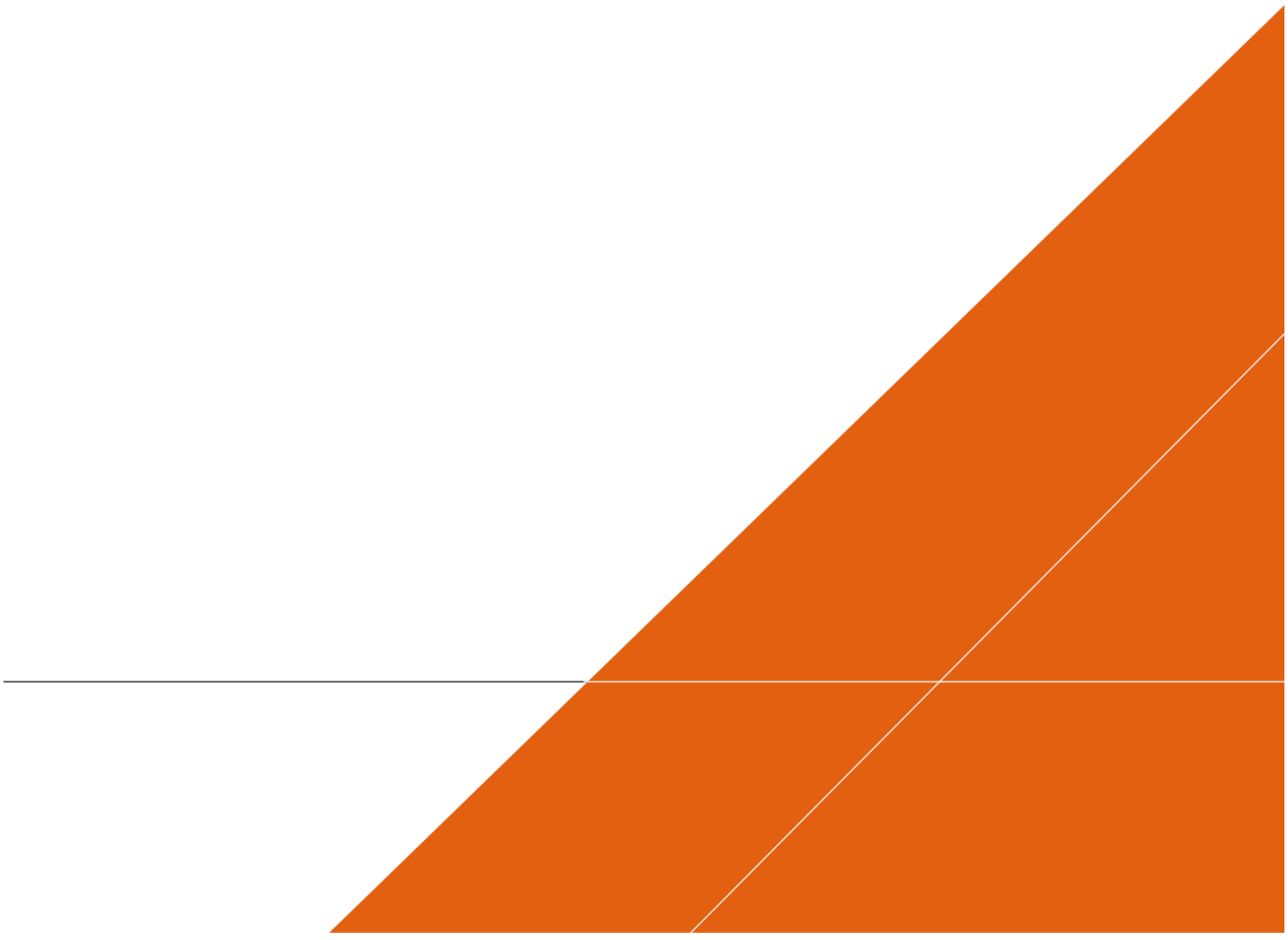
OTTERPOOL PARK

Environmental Statement (ES) Appendix: 7.8 Hazel Dormouse Survey Report – Update to Include 2020 Survey Data

MARCH 2022



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Executive summary

Arcadis Consulting (UK) Limited has been commissioned on behalf of Otterpool Park LLP to undertake surveys for hazel dormouse (*Muscardinus avellanarius*) to inform an Environmental Impact Assessment (EIA) for the proposed Development to accompany an amendment to the outline planning application. The proposed Development is 'Otterpool Park', a garden settlement located within Folkestone, Kent. The development area has been identified as an 'area of search'; hereafter, the area of search is referred to as "the site".

The site is located within Folkestone, Kent within the administrative boundary of Folkestone and Hythe District Council (F&HDC) and spans a large area located immediately south of Junction 11 of the M20. The site is largely agricultural in nature with the majority of the site comprising arable and pasture fields, a disused horseracing course with an artificial lake ('Folkestone Racecourse Lake'), areas modified from historical use (airfields), existing historic settlements and relatively new industrial areas. The site area of the proposed Otterpool Park Area Development is approximately 589 ha. The surveys conducted are summarised below:

- From a desk study, it was identified that a survey conducted to inform a proposed windfarm in the west of the site identified dormouse presence within Harringe Brooks Woods, adjacent to the site to the west.
- Dormouse surveys were initially undertaken from April to October 2017 within hedgerows or woodland identified as suitable dormouse habitat within the site boundary including the interface of Harringe Brooks Woods (referred to as Survey 1).
- Dormouse surveys were subsequently undertaken in 2018 within Kiln Wood and Harringe Brooks Wood located immediately east and west of the site respectively (referred to as Survey 2).
- Updated dormouse habitat assessments were undertaken in 2020 and 2021 to review the validity of the previous surveys. These identified no significant change in the status of dormouse habitat within the site. The results of the 2020 and 2021 surveys concluded that:

During Survey 1, targeted dormouse surveys within the site boundary commenced on the 24 April 2017. Pre-constructed dormouse nest tubes were attached to the branches of trees and scrub and then checked for dormice/signs of dormice every five to six weeks until October 2017. Tubes were left in place from April–October 2017, with five checks being undertaken in total. No evidence of dormouse presence was found within the study area, or within the edge habitat area of Harringe Brooks Wood.

During Survey 2, further surveys of off-site woodlands were conducted in 2018. This extended the survey area to Kiln Wood to the immediate east of the site and covered the remaining area of Harringe Brooks Wood not covered during Survey 1. Within Survey 2, a double density of tubes was utilised, in addition to additional nest boxes, in order to make sure the survey results were valid. The nest boxes and tubes in each woodland were checked in August, October and November 2018. During the 2018 surveys (Survey 2), no dormice were found within Kiln Wood. Three dormouse nests were found within Harringe Brooks Wood (tubes 18, 21 and one nest in tube 56 was recorded on two occasions).

During Survey 3 (2021), targeted dormouse surveys were undertaken in suitable habitats that were near to or potentially connected to Harringe Brooks Wood (as access permission was denied to the wood itself), to establish whether dormice may have spread beyond the wood since Survey 2 in 2018. Six nests of fresh green leaves without structure were found during the surveys, which cannot be definitively identified to species (they could be wood mouse or dormouse) but are precautionarily presumed to be dormouse nests given the materials used and habitat connectivity to the known population in Harringe Brooks Wood. The details of these nests is below.

- four of the six nests were in tubes deployed along a hedgerow running north from Harringe Brooks Wood (approximately 200m - 500m north of the wood);
- one nest was found in a tube within the East Stour River corridor, where the aforementioned hedgerow meets the river corridor, approximately 1.2km north of the wood; and

- one nest was found in a tube within Park Wood to the east of the nest described above.

The 2020 and 2021 dormouse habitat assessments identified no confirmed significant change in the status of habitats for dormouse on the site. The results of the 2020 and 2021 surveys concluded that:

- No further dormouse surveys are required to inform a 2021 resubmission of the ES;
- The habitat evaluations utilised in the 2018 submission are considered to be valid, with no evidence of any dormouse habitats increasing in value (the 2021 Survey 3 results do not change the previous assumption that dormouse would colonise on-site habitats).

Within the study area, dormice are presumed to be present in habitats connected to Harringe Brooks Wood and it is known that dormice are present within Harringe Brooks Wood to the west of the site. The EIA considers potential indirect impacts to this species. Mitigation to prevent impacts to this population of dormice is proposed and includes:

- A suitable buffer around Harringe Brooks Wood;
- Update surveys prior to impacts to habitats connected to Harringe Brooks Woods (to determine if a protected species licence is needed);
- Prescriptions within a CoCP to avoid/minimise impacts; and
- Throughout the development the approach will be reassessed to make sure all actions are compliant with legislation. Licences will be obtained if necessary.

Post development, specific management of suitable dormouse habitat could encourage dormouse to utilise areas of the site, including those where presence has now been presumed. Potential opportunities for enhancement of the site for dormice include:

- Planting of new woodland and hedgerow;
- Maintenance and enhancement of hedgerows and woodland, including gapping up and planting with species of value for dormice such as Hazel; and
- Installation of dormouse boxes.

Measures and targets for dormice within the Otterpool Park development will be specified in a site-specific Biodiversity Action Plan to be drafted as a component of the Otterpool Park ES (ES Appendix 7.20).

1 Introduction

1.1 Overview

1.1.1 Arcadis Consulting (UK) Limited has been commissioned on behalf of Otterpool Park LLP to undertake surveys for hazel dormouse (*Muscardinus avellanarius*) to inform an Environmental Impact Assessment (EIA) for the proposed Development and accompany an amended outline planning application. The proposed Development is 'Otterpool Park', a garden settlement located within Folkestone, Kent. The development area has been identified as an 'area of search'; hereafter, the area of search is referred to as "the site". This report presents the results of dormouse surveys conducted in 2017, 2018 and 2021.

Site Location and Setting

1.1.2 The site is located within Folkestone, Kent within the administrative boundary of Folkestone and Hythe District Council (F&HDC) and spans a large area located immediately south of Junction 11 of the M20. The site is largely agricultural in nature with the majority of the site comprising arable and pasture fields, a disused horseracing course with an artificial lake ('Folkestone Racecourse Lake'), areas modified from historical use (airfields), existing historic settlements and relatively new industrial areas.

1.1.3 The M20 motorway, Channel Tunnel Rail Link and Westenhanger Station are located to the north of the site, beyond which lie the villages of Stanford and Postling within a largely rural setting including the Kent Downs Area of Outstanding Natural Beauty (AONB). This AONB extends to the east, beyond which lies the town of Hythe, and to the south where it includes Lympne village. The site also includes the settlements of Barrowhill, Sellindge, Westenhanger and Newingreen. Lympne Industrial Park and some areas of woodland are located immediately south of the site. In addition, East Stour River flows through the site in a north-east to west direction. The site is centred on BNG TR 111 363.

1.1.4 An aerial image illustrating the site surveyed is presented in Image 1. Photographs of the site can be found in Appendix B - Photographs.

Image 1: Aerial imagery of the site showing survey site location

1.2 Proposed Development

1.2.1 The proposed Otterpool Park Development is located on approximately 589 ha of land within the wider study area as shown in Figure 1. The planning application seeks permission for a new garden settlement accommodating up to 8,500 homes (Use Classes C2 and C3) and Use Class E, F, B2, C1, Sui Generis development, including use of retained buildings as identified, with related infrastructure, highway works, green and blue infrastructure, with access, appearance, landscaping, layout and scale matters to be reserved. A summary of the maximum floorspace areas for each land use type is provided in Chapter 4: The Site and the Proposed Development of the Environmental Statement (ES).

Dormouse Biology

1.2.2 The dormouse is a species native to the UK as well as parts of Europe. Habitat preferences usually consist of species-rich hedgerows or broad-leaved woodland (Wembridge *et al*., 2016). Dormice have a strong preference for woodland which includes coppiced Hazel (*Corylus avellana)*, a species often found in woodlands designated as ancient woodland. It is also classified as an indicator species due to their sensitivity to changes in quality of their habitat (Mortelliti *et al*., 2014).

1.2.3 Dormice are predominantly nocturnal and will forage amongst tree canopies, hedgerows and scrub from April to September. During the day, they can be found sleeping in small circular nests woven from strips of bark and leaves. Dormice are slow breeders and normally produce a single litter annually. Young are typically born between July and August in order to reach a minimum weight of 15g. When conditions are cold or wet, or if food is scarce, dormice curl up into a ball and go into a state similar to hibernation for a short time (called torpor) in order to save energy. Between October and May dormice “hibernate” in nests beneath the leaf litter on the forest floor or in the base of hedgerows. They are subject to some predation from birds of prey, squirrels and badgers, but predation is not a major threat to the population, rather this is thought to be habitat loss and fragmentation (PTES, 2017).

1.2.4 Dormice traditionally feed on the flowers of typical British hedgerow and woodland species such as Pedunculate Oak *(Quercus robur*), Hawthorn (*Crataegus monogyna)*, Sycamore (*Acer pseudoplatanus)* and Willow species *(Salix sp.)* but later in the season will also feed on Bramble (*Rubus fruticosus)* flowers and berries. Dormice have a distinctive method of eating Hazel nuts and their characteristic toothmarks are often used as diagnostic features by surveyors to establish the presence of dormice. This species is not completely herbivorous and will also feed on small or juvenile insects (Chanin *et al.*, 2015).

1.3 Legislation and Conservation Status

1.3.1 The dormouse is protected by National and European legislation. It is listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (HMSO, 1981) which makes it an offence to:

- Intentionally kill, injure or take a dormouse;
- Possess or control any live or dead specimen or anything derived from a dormouse;
- Intentionally or *recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a dormouse (whether occupied or not); and
- Intentionally or *recklessly disturb a dormouse while it is occupying a structure or place which it uses for that purpose.

1.3.2 *The term “recklessly” was added as an amendment to the Wildlife and Countryside Act 1981 (as amended) (HMSO, 1981) as a result of the Countryside and Rights of Way Act 2000 (HMSO, 2000).

1.3.3 The dormouse is included on Schedule 2 of the Conservation of Habitats and Species Regulations 2017[1] (HMSO, 2017) which makes it an offence to:

- Deliberately capture or kill a dormouse;
- Deliberately disturb a dormouse;
- Damage or destroy a breeding site or resting place of a dormouse; and
- Keep, transport, sell or exchange, or offer for sale or exchange a live or dead dormouse or any part of a dormouse.

1.3.4 The dormouse is declining across much of its northern range due to habitat loss and fragmentation. Dormice need well managed woodlands connected by hedgerows in order to disperse and thrive. It is thought that their range in the UK has shrunk by approximately half in the past century and they are mostly concentrated in the south of the country (south of Suffolk) (Wembridge *et al*., 2016).

1.3.5 The dormouse was a UK Biodiversity Action Plan (BAP) Priority Species and is now included on Section 41 of the Natural Environment and Rural Communities Act 2006 (HSMO, 2006).

1 The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 amended the 2017 Regulations in response to the UK's exit from the EU. The requirements and processes of the Regulations remain the same and the level of protection afforded by the Regulations remains unchanged, as does EU guidance and case law.

2 Methodology

2.1 Survey Proportionality and Design

2.1.1 When designing the survey, the potential impacts of the proposed Development were considered to make sure that adequate information was obtained to inform the Environmental Impact Assessment (EIA) and assist with the masterplanning of the proposed Development.

2.1.2 The objectives of the dormouse surveys at the site were to:

- Establish the presence or likely absence of dormouse on the site;
- Determine the distribution of the species, should it be present;
- Assess the potential constraints and implications for development; and
- Provide recommendations for further survey work and mitigation, if required.

2.1.3 Surveys conducted to inform the Otterpool Park development were initially split into 'Survey1' and 'Survey 2'. Survey 1 was conducted in 2017 and covered the site and its immediate surroundings, including the periphery of Harringe Brooks Wood to the west. Survey 2 was conducted in 2018, in response to consultation comments, and covered the remaining area of Harringe Brooks Wood to the west of the site, and Kiln Wood, an area to the east of the site. Survey 3 was conducted in 2021 within suitable habitats connected to Harringe Brooks Wood (as access to the wood itself was not permitted) to identify whether dormouse had dispersed from the wood since previous surveys. Other areas of the site have no or limited connectivity to areas which could provide a source population of dormice, and therefore an update survey was not deemed necessary.

2.2 Desk Study

2.2.1 The purpose of the desk study was to review existing information available in the public domain. Information was requested for dormouse within a 2km radius of the site as recommended in the Institute of Environmental Assessment's 'Guidelines for Baseline Ecological Assessment' (1997) and CIEEM's (Chartered Institute of Ecology and Environmental Management) Guidelines for Preliminary Ecological Appraisal (2018 revision).

2.2.2 Protected species information within 2km of the site was obtained from Kent and Medway Biological Records Centre (KMBRC) in March 2018. An updated information request was obtained from KMBRC in April 2020.

2.2.3 The results of the desk study are presented and discussed in section 3.

2.3 Field Survey

Survey scope

Survey 1 (2017)

2.3.1 For Survey 1, potentially suitable dormouse habitat within the site was identified from Ordnance Survey (OS) mapping, aerial imagery and a Phase 1 habitat survey conducted on 4, 5 and 6 October 2016 by ecologists Brandon Murray (Associate Technical Director) and Guy Stone (Associate Technical Director).

2.3.2 The survey area covered all potentially suitable habitat within the site with the exception of land where access was not permitted (see section 2.4 on limitations). This predominantly consisted of intact hedgerows and woodland. The surveys focussed on on-site areas of woodland that included coppiced Hazel such as Park Wood (adjacent to Somerfield Court Farm). The eastern edge of Harringe Brooks Wood which is adjacent to the site was also surveyed. The areas surveyed in Survey 1 are presented in Figure 1.

2.3.3 Surveys for dormouse at the site followed methods recommended in The Dormouse Conservation Handbook (Bright *et al.*, 2006). The survey technique selected for this survey was the deployment and checking of nest tubes.

2.3.4 The surveys were undertaken by Polly Tayler (Ecologist), Ellen Poppleton (Assistant Ecologist), Ewan Gibson (Ecologist) and Jonathan Wood (Graduate Environmental Consultant).

2.3.5 Tubes were initially set out on the 24, 25 and 30 April 2017. Nest tubes comprise a plastic tube containing a removable wooden floor and end wall. The tubes were attached to branches within hedgerows at approximately 20-35m intervals along the habitat features shown in Figure 1. Distances between tubes varied as many of the hedgerows within the site contained gaps or were defunct. Therefore the density of tubes was reduced within these hedgerows. Initially, 400 nest tubes were installed across the site.

2.3.6 The 400 nest tubes were spread evenly over the site but were concentrated in areas of particular optimum habitat suitability such as Park Wood. Many of the hedgerows where nest tubes were placed were within cattle/sheep-grazed fields, so care was taken to make sure the nest tubes were installed in positions inaccessible to these livestock. The areas where nest tubes were deployed are presented in Figure 1. A summary of the dates of tube deployment are presented in Table 1 below.

Table 1: Dormouse tube installation dates 2017 (Survey 1)

Dates of Deployment	Total number of Tubes installed between 24/04/17-30/04/18
24/04/2017 25/04/2017 30/04/2018	400

Survey 2 (2018)

2.3.7 In response to stakeholder comments, a supplementary survey was undertaken with tubes and nest boxes to further confirm the status of dormouse in Harringe Brooks Wood (to the west of the site) and Kiln Wood (located within Sandling Park to the immediate east of the site). This survey was conducted in 2018 and is referred to as Survey 2. Within Survey 2, double density of tubes was utilised, in addition to additional nest boxes to account for the likely low density of any existing dormouse population. The nest boxes and tubes in each woodland were installed in late June and early July 2018, with a total of 200 tubes and 40 nest boxes being deployed (100 tubes and 20 boxes in each woodland).

2.3.8 Dormouse nest boxes are similar to bird boxes, but with the entrance hole positioned facing the tree. Dormouse nest boxes are considered mainly as a means of population monitoring rather than as a survey tool. The intention is to leave these nest boxes *in situ* on site to aid design proposals and to encourage ongoing monitoring of dormouse populations within the site.

2.3.9 The dates and locations of the Survey 2 tube and box deployments are summarised in Table 2 below. The areas where nest tubes and nest boxes were deployed are presented on Figure 3 and Figure 4 at.

Table 2: Dates of 2018 deployment of dormouse tubes (Survey 2)

Dates of Visits	Number of Tubes Installed	Location of Tunes installed
28 June 2018	50 tubes, 10 boxes installed	Tubes installed at Harringe Brooks Wood
02 and 03 July 2018	60 tubes, 12 boxes installed	Tubes installed at Harringe Brooks Wood and Kiln Wood
12 and 13 July 2018	90 tubes, 18 boxes installed	Tubes installed at Kiln Wood

Survey 3 (2021)

2.3.10 Surveys were undertaken in 2021 of hedgerows, scrub and woodland habitats within the site connected to Harringe Brooks Wood. The locations of the tubes deployed are presented on Figure 6The surveys comprised the deployment and subsequent checking of 149 tubes and seven boxes. The tubes and boxes were deployed on 25 and 26 March 2021 by Ewan Gibson (Ecologist), Liam Price (Ecologist) and Toby Betts (Graduate Ecologist).

Habitat assessment update (2020)

2.3.11 An updated Phase 1 habitat survey was undertaken in May 2020. As part of this survey, habitat within the site was assessed to identify any change in the status of dormouse habitat since the previous dormouse surveys. The habitat surveys were undertaken by Brandon Murray (Associate Technical Director) and Rory Roche (Ecologist). The dates and locations of the surveys are shown in Table 3 below.

Table 3 Dates of 2020 dormouse habitat assessment update surveys

Dates of Visits	Location
30/04-01/05/2020	Habitats surrounding ponds within the site.
05-07/05/2020	Most of the site excluding areas without access.
15/05/2021	Remaining areas not surveyed in 2021 around buildings scattered across the site.

Habitat assessment update (2021)

2.3.12 As part of update surveys undertaken in 2021, the site's habitats were assessed to identify any change in the status of dormouse habitat since the previous dormouse survey undertaken in 2020. The habitat surveys were undertaken by Ewan Gibson (Ecologist). The dates and locations of the survey(s) are shown in Table 4 below.

Table 4 Dates of 2021 dormouse habitat assessment update surveys

Dates of Visits	Location
25-26/03/2021	Habitats connected with Harringe Brooks Wood.
24-25/05/2021	Habitats connected with Harringe Brooks Wood.
21-22/07/2021	Habitats connected with Harringe Brooks Wood.
16-17/08/2021	Habitats connected with Harringe Brooks Wood.
27-28/09/2021	Habitats connected with Harringe Brooks Wood.

Tube / box check methodology

2.3.13 During the dormouse checks, surveyors approached each tube with caution, using a mirror where necessary to view inside the tubes without causing disturbance. In addition to the physical presence of dormice in the nest tubes and boxes, surveyors were also looking for characteristic signs such as:

- gnawed Hazel nuts - dormice leave a smooth round hole with few tooth-marks that run parallel to the edge of the hole, rather than outwards from its centre, so that the rim looks smooth. In contrast, the tooth-marks of mice and voles run outwards, so that the rim of the hole looks like the milled edge of a coin.
- nests - typically grapefruit-size, spherical and woven from strips of honeysuckle bark, or similar material, and frequently have whole leaves incorporated into the outer layers.

Survey effort

Survey 1 (2017)

2.3.14 Survey 1 covered the site, and its immediate surrounds, including the periphery of Harringe Brooks Wood.

2.3.15 The survey checks for the first suite of surveys (survey 1) were undertaken by Polly Tayler (Senior Ecologist, dormouse survey licence number 2017-28430-CLS-CLS), Tom Johnstone (Graduate Ecologist) and Ewan Gibson (Ecologist). The locations of the deployed tubes and boxes are presented in Figure 1. Tubes were checked on the following dates:

- 30 and 31 May 2017
- 10 and 11 July 2017
- 22 and 23 August 2017
- 25 and 26 September 2017
- 19 and 20 October
- 1 November 2017 (Tube Collection).

Survey 2 (2018)

2.3.16 Survey 2 covered the main area of Harringe Brooks Wood to the west of the site and Kiln wood, to the east of the site. The survey checks for the Survey 2 visits were undertaken by Brandon Murray (Associate Technical Director), Ewan Gibson (Ecologist), Kora Kunzmann (Ecologist and accredited under hazel dormouse survey licence 2017-32764-CLS-CLS) and Katy Smart (Ecologist).

2.3.17 Tubes and boxes were checked on the following dates:

- 22 and 23 August 2018
- 25 October 2018
- 28 November 2018.

Survey 3 (2021)

2.3.18 Survey 3 focused on habitats connected to Harringe Brooks Wood to the west of the site. The rationale for this was that:

- Dormice require a large area of woodland to support a population. The only large areas of woodland where dormice could have colonised from to change their status on site is from Harringe Brooks Woods in the west or Kiln Wood to the east.
- In the 2018 surveys, it was confirmed that Kiln Wood did not support a dormouse population. Harringe Brooks Woods in the west supports a dormouse population (confirmed in 2018) so it was assessed that this population could feasibly have expanded into the site. As such, linear features connected to Harringe Brooks Woods were scoped in for the 2021 surveys.

- As there is no source population to the east of the site and areas not connected to Harringe Brooks Woods are separated from this source population by the A20 and B2067, it was determined that there was no notable risk of dormice expanding into these areas of the site since the previous surveys. This was also supported by the limited habitat quality and availability of foraging resources in these other areas.

2.3.19 This approach was discussed and agreed with the Local Planning Authority Ecologist at Kent County Council (KCC). This correspondence is presented in ES Appendix 7.2.

2.3.20 The survey checks for the Survey 3 visits were undertaken by Ewan Gibson (Ecologist, dormouse survey licence number 2020-48078-CLS-CLS).

2.3.21 Tubes and boxes were checked on the following dates:

- 24 and 25 May 2021
- 21 and 22 July 2021
- 16 and 17 August 2021
- 27 and 28 September 2021

Survey 1, 2 and 3 survey effort summary

2.3.22 As described in the Dormouse Conservation Handbook (Bright *et al*., 2006) and presented in Table 5 the chance of detecting dormice through a nest tube survey varies throughout the year. Table 5 below indicates the relative value of surveys when tubes are in place at different times of year, with respect to the chance of detecting dormice.

2.3.23 The minimum survey effort required to assume absence of dormice from the site is a total score of 20, based on the use of 50 nest tubes. It is important to note that a month still counts towards the score, even if a check has not been undertaken in that month, so long as checks are undertaken every two months as a minimum (Natural England, 2011).

Table 5: Index of probability of finding dormice present in nest tubes in any one month.

Month	Index of probability (score)	Survey 1	Survey 2	Survey 3
April	1			
May	4	4		4
June	2	2		2
July	2	2		2
August	5	5	5	5
September	7	7	7	7
October	2	2	2	
November	2			
Total	**25**	**22**	**14 x 2 = 28**	**20**

2.3.24 Double the 50-tube minimum were utilised in each woodland in the 2018 surveys, and nest boxes were added within these woodland surveys, therefore the score allocated is doubled. As it can be seen from the above numbers in Table 5, sufficient survey effort was conducted for the surveys to be deemed valid for the purpose of presence / absence surveys.

2.4 Survey Limitations

2.4.1 Access was limited to some areas of the site due to the following:

- Landowner access permissions;
- Crop growth in fields;
- Shrub/scrub growth in hedgerows;
- Safety limitations due to livestock in fields; and
- Covid-19 restrictions in 2020.

2.4.2 Nest tubes lack the stability that nest boxes have, therefore are subject to incidental damage and destruction. Throughout the Survey 1 surveys some nest tubes were found to be missing, destroyed or on the ground. This could be due to several factors such as adverse weather, disruption by livestock/predators and human interaction; however, where nest tubes were found to be missing, they were replaced by surveyors either during that survey or the subsequent survey.

2.4.3 In 2021, Harringe Brooks Wood could not be surveyed. However, it is assumed that this woodland continues to support dormouse and this is not considered to impact upon the veracity of the assessment.

2.4.4 Despite the limitations mentioned above, the surveys were comprehensive, with a broad coverage, and the data is considered sufficient to inform the outline masterplan in terms of impact assessment. The data has also allowed appropriate mitigation to be incorporated into the design and construction and operational mitigation to be devised. It should be noted that site conditions and the environment are subject to change over time and this survey is only reflective of the status of dormice on site at the time of survey.

2.4.5 Due to the outbreak of the COVID-19 virus in 2020, survey scope was greatly impacted and had to be altered to what was safe and practical to achieve. As such, the 2020 surveys endeavoured to collect the information intrinsic to make sure the submission is founded on robust survey data, whilst acknowledging that the surveys needed to be proportionate in light of the additional risks to Arcadis employees and members of the public. As a result, the following changes were made to the scopes:

- For the update surveys, access was not requested to parcels of land where members of the public were likely to be at increased risk of coming into contact with Arcadis employees;
- Access to private land and businesses (excluding farms) was not requested, both to reduce exposure risk and to avoid potential for negative reactions to interaction with Arcadis staff.

3 Results

3.1 Desk Study

3.1.1 Information was received from KMBRC and from the ES for a planning application for "Harringe Brooks Wind Park". This is summarised below in Table 6.

Table 6: Desk study data summary

Organisation	Data Received
KMBRC (obtained March 2018 and updated April 2020)	Hazel dormouse recorded in 2001 at OS grid reference TR03S (Aldington Knoll) Hazel dormouse (x2) recorded in 2000 at OS grid reference TR03S (Aldington Knoll) Hazel dormouse recorded in 2000 at OS grid referenceTR03U (Smeeth) The updated information request in April 2020 did not return any additional dormouse records within 2km of the site.
Ecotricity	Two targeted surveys were undertaken in 2009 and 2011 to support a planning application for Harringe Brooks Wind Park. During the 2009 surveys, one probable dormouse nest was found located in a hedgerow of Hazel to the east of Harringe Brooks Wood (the location of this is shown as TN16 in Figure 2). A confirmed dormouse nest was found in 2011 in a Dogwood (*Cornus sanguinea*) shrub on the eastern edge of Harringe Brooks Wood (the location of this is shown as TN17 in Figure 2).

3.2 Field Survey

Dormouse tube / box survey results

Survey 1 (2017)

3.2.1 No evidence of dormouse presence was found within the site during the surveys in 2017 (Survey 1). The dates and summary results of the nest tube checks conducted on the site in 2017 are presented in Table 7 below.

Table 7: Results of dormouse nest tube checks on -site and Harringe Brook Woods eastern edge, Survey 1 (2017)

Dates of Visits	Number of Tubes Replaced	Number of Tubes with Evidence of Dormouse	Description	Other Comments
24/04/2017 25/04/2017	N/A	N/A	N/A	N/A
29/05/2017 30/05/2017	0	0	N/A	N/A
10/07/2017 11/07/2017	36	0	N/A	N/A
23/08/2017 24/08/2017	95	0	N/A	N/A
25/09/2017 26/09/2017	0	0	N/A	Access denied by landowner to an area which contained approximately 30 tubes.
19/10/2017 20/10/2017	0	0	N/A	437 tubes removed from the site

Dates of Visits	Number of Tubes Replaced	Number of Tubes with Evidence of Dormouse	Description	Other Comments
01/11/2017				

Survey 2 (2018)

3.2.2 Within the survey of the off-site woodlands conducted in 2018, one dormouse nest was observed. Details of the deployment dates of the nest boxes and tubes, and the results of the surveys are presented in Table 8. The location of the nest found is shown on Figure 5.

Table 8: Results of dormouse nest tube / box checks off-site within the woodlands 'Harringe Brooks Wood and Kiln Wood (Survey 2)

Dates of Visits	Areas surveyed	Number of Tubes / boxes with Evidence of Dormouse	Description	Other Comments
22 and 23 August 2018	All tubes in Kiln Wood and Harringe Brooks Wood surveyed.	0	N/A	N/A
25 October 2018	All boxes and tubes within Kiln Wood located and surveyed. A subset of the tubes and boxes within Harringe Brooks Wood were surveyed until the survey was stopped (as a dormouse nest was found)	One tube within Harringe Brooks Wood contained a dormouse nest. Location presented in Figure 5.	Nest was located in tube 56 (photograph 8 within Appendix B).	The survey was partially completed in order that an appropriately licensed surveyor could continue the survey (in the event that a dormouse nest was discovered), in line with PTES recommendations. The remainder of this survey was completed on 28 November 2018.
28 November 2018	Remaining tubes and boxes within Harringe Brooks Wood (not surveyed on 25 October 2018) located and surveyed.	Three dormouse nests found within Harringe Brooks Wood. Locations are presented in Figure 5.	Nests located in tube 56 (the same nest as recorded on 25 October 2018), tube 18 (photograph 9) and tube 21 (this nest contained two wood mice but created by dormice – photograph 10). Photographs are presented within Appendix A.	Survey of Harringe Brooks Wood completed.

Survey 3 (2021)

3.2.3 The survey of suitable habitats connected to Harringe Brooks Wood in 2021 found six nests of fresh green leaves without structure, which cannot be certainly identified but are precautionarily presumed to be dormouse nests given the materials used (dormice, especially juveniles, can create nests of green leaves without clear structure, though so can other mouse species), and habitat connectivity to the known population in Harringe Brooks Wood. Details of deployment dates of the nest boxes and tubes, and the results of the surveys are presented in Table 9. The location of the nests found are shown on Figure 6.

Table 9 Results of dormouse nest tube/box checks within suitable habitats connected to Harringe Brooks Wood in 2021 (Survey 3)

Dates of Visits	Areas surveyed	Number of Tubes / boxes with Evidence of Dormouse	Description	Other Comments
24 and 25 May 2021	Habitats connected to Harringe Brooks Wood to the west of the site.	None confirmed	N/A	N/A
21 and 22 July 2021	Habitats connected to Harringe Brooks Wood to the west of the site.	One tube with presumed dormouse nest	One nest comprised of fresh green leaves but with no structure was found in tube 105.	N/A
16 and 17 August 2021	Habitats connected to Harringe Brooks Wood to the west of the site.	Two tubes with presumed dormouse nests	Two nests; tube 105 had two fresh leaves added and tube 28 also contained a nest of fresh green leaves but no structure.	N/A
27 and 28 September 2021	Habitats connected to Harringe Brooks Wood to the west of the site.	Six tubes with precautionarily presumed dormouse nests	Six nests; tubes 20, 28, 103, 105, 107 and 124 contained nests of fresh green leaves but no structure.	All tubes and boxes were collected, except those with nests of fresh green leaves.

Habitat assessment update (2020 & 2021)

3.2.4 The dormouse habitat assessment in 2020 and 2021 identified no significant change in the status of dormouse habitat within the site.

Other species

3.2.5 Evidence of wood mouse (*Apodemus sylvaticus*) was found during the 2017 surveys (Survey 1). This was found at the following locations:

- OS grid reference TR125364, TR125363, TR120372, TR120370, TR118369, TR112373 and TR118374 (Folkestone Racecourse);
- OS grid reference TR128369 and TR128366 (Folkestone Racecourse/ Hillhurst Farm);
- OS grid reference TR107363 (Champneys Farm);
- OS grid reference TR099373 (Somerville Court Farm); and
- OS grid reference TR121362 (small area of woodland south of the Ashford Road).

3.2.6 Two of these nests contained wood mice. These are marked as TN7 and TN14 on Figure 2 and listed within 0. TN7 (TR128369) contained three adult wood mice and TN14 (TR121362) contained four adult wood mice.

3.2.7 An unknown nest was found at TR122358 (TN5 on Figure 2 and listed within 0). This was predominantly made of thistledown and had a loose, collapsible structure (Photograph 1 within Appendix B). This was identified as likely being a wood mouse nest. Due to its structure, it was considered highly unlikely to be a dormouse nest.

3.2.8 Two food caches were identified at OS grid references TR128368 and TR122358 (TN1 and TN15 on Figure 2 respectively and both listed within Appendix A). TN1 was not identified as containing feeding signs specific to any species and no signs of dormouse were identified. TN15 contained characteristic wood mouse feeding signs.

3.2.9 Evidence of wood mouse was found during the 2018 surveys (Survey 2). This was found at the following locations:

- Two wood mice were found within a dormouse nest in tube 21 at approximately TR 09890 35921 (Harringe Brooks Wood); and
- A wood mouse nest was found in nest box 9 which also contained two wood mice.

3.2.10 Evidence of wood mouse was found during the 2021 surveys (Survey 3). This was found at the following locations:

- A nest of dry leaves with no structure (likely wood mouse) was found in tube 108 at approximately TR 09813 36789;
- A nest of dry leaves with no structure (likely wood mouse) was found in tube 124 at approximately TR 09813 36789;
- A nest of dry leaves with no structure (likely wood mouse) was found in tube 136 at approximately TR 10575 35753;
- A nest of dry leaves with no structure (likely wood mouse) was found in tube 146 at approximately TR 10721 36212; and
- A nest of dry leaves with no structure (likely wood mouse) was found in tube 150 at approximately TR 10712 36356.

3.2.11 Evidence of wood mouse was found during the 2021 surveys (Survey 2). This was found at the following locations:

- A nest of dry leaves with no structure (with four wood mice present) was found in box 52 at approximately TR 11048 36159;
- A nest of semi-dry leaves with no structure (likely wood mouse) was found in tube 113 at approximately TR 09865 36671;
- A nest of dry leaves with no structure (likely wood mouse) was found in tube 136 at approximately TR 10572 35737;
- A nest of dry leaves with no structure (likely wood mouse) was found in tube 146 at approximately TR 10717 36228;
- A nest of dry leaves with no structure (likely wood mouse) was found in tube 150 at approximately TR 10713 36331; and
- A nest of dry leaves with no structure (likely wood mouse) was found in tube 150 at approximately TR 10712 36424.

3.2.12 The locations of these observations are presented in Figure 6.

4 Summary and Discussion

4.1.1 Dormouse surveys were undertaken from April to October 2017 within hedgerows or woodland identified as suitable dormouse habitat within the site boundary including the interface of Harringe Brooks Woods (Survey 1). These surveys did not find any evidence to suggest the presence of dormice though wood mice were incidentally recorded .

4.1.2 Dormouse surveys were undertaken in 2018 within Kiln Wood and Harringe Brooks Wood located immediately east and west of the site respectively (Survey 2). No evidence of dormouse was found within Kiln Wood. Three dormouse nests were found within Harringe Brooks Wood (tubes 18, 21 and one nest in tube 56 was recorded on two occasions). Previous surveys for planning applications within the last 10 years have also recorded dormouse presence here. The masterplan design has been iterated to maximise the value of the site for dormice and to minimise potential impacts to this off-site population (through appropriate buffers etc.).

4.1.3 Updated dormouse habitat assessments were undertaken in 2020 and 2021 to review the validity of the previous surveys.

4.1.4 Dormouse surveys were undertaken in 2021 within the site in suitable habitats that were near to or potentially connected to Harringe Brooks Wood (access permission was denied to the wood itself), to establish whether dormice may have spread beyond the wood since Survey 2 in 2018. Six nests of fresh green leaves, without structure, were found during the surveys, which were not diagnostic, but were presumed to be dormouse nests given the materials used (dormice, especially juveniles, can create nests of green leaves without clear structure, though so can other mouse species), and habitat connectivity to the known population in Harringe Brooks Wood. Four nests were found in tubes deployed along a hedgerow running north from Harringe Brooks Wood (approximately 200m - 500m north of the wood); one nest was found in a tube within the East Stour River corridor, where the aforementioned hedgerow meets the river corridor approximately 1.2km north of the wood; and one nest was found in a tube within Park Wood.

- No further dormouse surveys are required to inform a 2021 resubmission of the ES; and
- The evaluations utilised in the 2018 submission are still considered to be valid, with no evidence of any dormouse habitats increasing in value (the 2021 Survey 3 results do not change the previous assumption that dormouse would colonise on-site habitats).

4.1.5 Dormice and their habitats are protected from harm/ disturbance and they are listed as a priority species for conservation both nationally and locally. An assessment of the potential development impacts are presented in the ES.

5 Mitigation Recommendations and Further Work

5.1 Introduction

5.1.1 Dormice have not been confirmed as present within the site; however, as dormice were confirmed to be present in habitat adjacent to the site (Harringe Brooks Wood), as a precautionary approach, dormice have been presumed present in suitable on-site habitats, therefore, appropriate mitigation and enhancement is proposed. This includes measures to maximise the value of the site for dormice and to safeguard them. These measures will be included within a site-specific Biodiversity Action Plan (BAP) (ES Appendix 7.20) and a Code of Construction Practice (CoCP), as outlined below. This will guide habitat enhancements within the site and management and monitoring to provide potential benefits to adjacent populations and to encourage colonisation of the site.

5.2 Design Mitigation

5.2.1 The following measures are being incorporated within the masterplan design:

- a minimum buffer of 50m around Harringe Brooks Wood from built development;
- appropriate buffers around retained woodlands within the site;
- retention of hedgerows where possible, particularly in areas adjacent to the known populations; and
- planting of new woodland blocks and creation of new hedgerows, including a significant belt of trees to the west of the development connected to Harringe Brooks Wood. Hedgerows will also be gapped up where appropriate.

5.3 Additional Mitigation

Construction Mitigation

5.3.1 The presence of dormice has been confirmed immediately adjacent to the site boundary and is presumed within the site in areas connected to the off-site source population; as dormice are a protected species appropriate construction mitigation measures will be implemented. These will be outlined within a Code of Construction Practice (CoCP) (ES Appendix 4.2) and include:

- prescriptions for update surveys prior to development of areas with connectivity to the source population in Harringe Brooks Woods and the linear features connected to them.
- A licence may be required to permit the removal of sections of hedgerows on site;
- appropriate measures implemented to control dust and other emissions that could affect air quality;
- site compounds, storage facilities and staff facilities are suitably bunded and located in places that would not have an adverse effect on the environment; in particular, the CoCP would make sure that retained trees are protected;
- in advance of site clearance, protective fencing is installed to protect retained and/or ecologically sensitive habitats (woodlands, mature trees and hedgerows) and their associated buffer zones to make sure that they are not subject to accidental damage (to be determined on a phase by phase basis);
- haul routes, storage compounds and staff facilities would be located away from retained habitats to minimise disturbance to the species they support;
- an Ecological Clerk of Works (ECoW) to supervise site clearance, in particular any works that have the potential to disturb notable receptors. The ECoW would also make sure that the mitigation measures proposed adhere to best practice guidelines and take account of any changes in legislation that may have occurred;

- the ECoW would make sure that hedgerow translocation is undertaken in accordance with an agreed method statement. They would also make sure that the retained and translocated hedgerows are monitored to make sure that they are managed appropriately;
- a toolbox talk undertaken by an ECoW to contractors involved in the removal or disturbance of potential dormouse habitat to outline to contractors the legal protection afforded to dormice. Should a dormouse be incidentally found during the works, all work in the area must stop immediately and the advice of a qualified ecologist be sought; and
- care should be taken to make sure that biosecurity measures are in place to prevent the spread of arboricultural diseases such as Ash dieback.

5.3.2 An ECoW would be employed to make sure that the ecological protection measures outlined in the CoCP are adhered to. They would also undertake regular monitoring to make sure that the protection measures remain in place for the time that they are required. In addition, the ECoW would report to the site Manager and/or Environmental Clerk of Works to make sure that remedial actions are undertaken in a timely manner.

Operational Mitigation

5.3.3 Post construction, certain measures could be taken to encourage dormice to colonise the available habitat including:

- the Otterpool BAP includes dormouse as a priority species. An Ecological Management Plan will be produced to assist in achieving the targets set in the Otterpool BAP (ES Appendix 7.20) can be achieved, this will also outline necessary monitoring;
- maintaining high species diversity within woodland areas, a mixture of scrub and trees which are well linked. This could be achieved by appropriate planting, coppicing, thinning and felling;
- ensuring that site maintenance contractors made aware of requirements and legal protections and that suitable ongoing protection measures are in place.
- maintenance of hedgerows to make sure sufficient connectivity between suitable habitats. This might be achieved by small scale pruning and coppicing. It should be noted that the level of maintenance required often depends on the dominant species present within the hedgerow as different species take different amounts of time to flower/fruit;
- the provision and maintenance of nest boxes. This can increase the carrying capacity of the habitat, increasing population density. If not occupied by dormice then these boxes can be beneficial to a range of other wildlife; and
- where it is proposed within the design that gardens back onto valuable existing hedgerows, it is recommended that they are protected by a fence or new hedge.

5.3.4 Further information on these management measures can be found in “The Dormouse Conservation Handbook” (Bright *et al.*, 2006). These approaches to maximising the value of the site for dormice and encouraging these areas to be colonised by dormice will be formalised in the site BAP (ES Appendix 7.20).

5.3.5 In addition, during the operation phase, impacts to retained and newly created habitats would be minimised through green infrastructure design to focus recreational impacts in certain areas and to minimise impacts to other areas, utilising topography, habitat and fencing to control recreational pressures.

6 Conclusions

6.1.1 Dormouse are fully protected by National and European legislation due to a significant decline in population following habitat loss and fragmentation. Survey 1 conducted by Arcadis in 2017 did not find any evidence that dormice are present within the site.

6.1.2 However, the site and surroundings do contain habitat suitable for dormice and 2018 surveys (Survey 2) confirmed the presence of dormice in Harringe Brooks Wood, which is located immediately adjacent to the western extents of the proposed development site.

6.1.3 Dormouse surveys undertaken in 2021 (Survey 3) found no confirmed evidence that dormice are present within the site but did find six nests which could not be confirmed as being made by another species (e.g. wood mouse etc.). These were therefore precautionarily presumed to be dormouse nests.

6.1.4 Habitat assessment update surveys in 2020 and 2021 identified no significant change in the status of dormouse habitat within the site. The results of the 2020 and 2021 surveys concluded that:

- No further dormouse surveys are required to inform a 2021 resubmission of the ES; and
- The evaluations utilised in the 2018 submission are considered to be valid, with no evidence of any dormouse habitats increasing in value (the 2021 Survey 3 results do not change the previous assumption that dormouse are present within on-site habitats where these are connected to Harringe Brooks Wood).

6.1.5 Masterplan design will be iterated to maximise the value of the site for dormice and to minimise potential impacts to off-site (and presumed on-site) populations (through appropriate buffers, CoCP prescriptions, licences if required etc.). Certain management measures would encourage dormouse presence post development, including the implementation of good quality green infrastructure such as woodland planting. In addition, maintenance of hedgerows and woodland, and the provision of nest boxes could also provide benefits for this species.

7 References

	Reference Description
Ref 1	Anon (2007) *UK BAP priority terrestrial mammal species.* Available online: http://jncc.defra.gov.uk/page-5170 [Accessed: December 2020].
Ref 2	Bright, P., Morris, P. and Mitchell-Jones, T. (2006) *The Dormouse Conservation Handbook, 2nd edn*. English Nature, Peterborough.
Ref 3	Ecotricity (2012) Harringe Brooks Wind Park Environmental Statement.
Ref 4	HMSO (1981) Wildlife and Countryside Act 1981. HMSO, London.
Ref 5	HMSO (1996) Wild Mammals (Protection) Act 1996. HMSO, London.
Ref 6	HMSO (2000) Countryside and Rights of Way Act 2000. HMSO, London.
Ref 7	HMSO (2006) Natural Environment and Rural Communities Act 2006. HMSO, London.
Ref 8	HMSO (2017) The Conservation of Habitats and Species Regulations 2017. HMSO, London
Ref 9	Mortelliti, A., Sozio, G., Driscoll, DA., Bani, L., Boitani L., Lindenmayer, DB. (2014) 'Population and individual-scale responses to patch size, isolation and quality in the hazel dormouse'. *Ecosphere,* 5: 1-13.
Ref 10	Natural England (2011) Interim Natural England Advice Note - Dormouse surveys for mitigation licensing – best practice and common misconceptions.
Ref 11	NBN Atlas Partnership (undated) NBN Atlas. Available online: https://nbnatlas.org/ [Accessed April 2020].
Ref 12	People's Trust for Endangered Species (PTES) (2017) *Hazel (or Common) dormouse.* Available online:https://ptes.org/get-informed/facts-figures/hazel-common-dormouse-muscardinus-avellanarius/ [Accessed December 2020].
Ref 13	Wembridge, D., Al-Fulaij, N., Langton, S. (2016) *The State of Britain's Dormice 2016*. Available online: https://ptes.org/wp-content/uploads/2016/09/State-of-Britains-Dormice-2016.pdf [Accessed December 2020].

Figure 1: Dormouse tube locations on-site –Survey 1 (2017)

N
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Legend

- Outline Planning Application Boundary
- Framework Masterplan Boundary
- Study Area
- Hedgerow
- Riparian Corridor
- Dense/continuous Scrub
- Woodland
- Areas Surveyed

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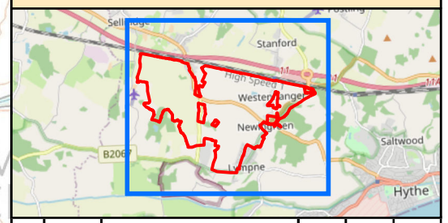

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01	09-10-2020	FOR INFORMATION	AD	BM	MG

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80Fen
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Figure 1
Hazel Dormouse Survey Results (Survey 1)

scale	original size	datum	grid
1: 15,000	A3	Sx	BNG

0 1:15,000 1 km

Figure 2: Target notes map – Survey 1 (2017) and desk study results

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Legend

- Outline Planning Application Boundary
- Framework Masterplan Boundary
- Target notes
- Hedgerow
- Riparian Corridor
- Dense/continuous Scrub
- Woodland

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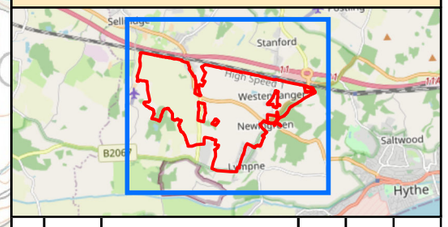

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Figure 2
Hazel Dormouse Survey Results - Desk Study and Survey 1

scale	original size	datum	grid
1: 15,000	A3	Sx	BNG

0 1:15,000 1 km

C:\Users\psi01069\ARCADIS\10029956 - Otterpool Park Stage 4a - 23 GIS\Figures_2021\Ecology\7.8 - Dormouse\Figure 2 - Hazel Dormouse Survey Results - Desk Study and Survey 1.mxd

Figure 3: Dormouse tube and box deployment locations within Harringe Brooks Wood Survey 2 (2018)

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Legend

Outline Planning Application Boundary

Framework Masterplan Boundary

Type

Box

Tube

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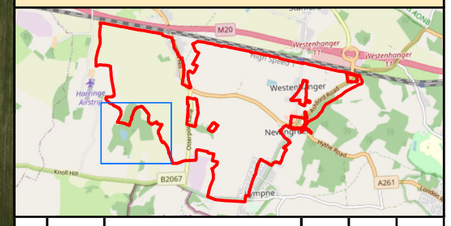

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Figure 3
Dormouse Survey Tube and Box Locations
Harringe Brooks Wood (Survey 2)

scale	original size	datum	grid
1:3,500	A3	Sx	BNG

0 1:3,500 140 Metres

Figure 4: Dormouse tube and box deployment locations within Kiln Wood Survey 2 (2018)

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Legend

Outline Planning Application Boundary

Framework Masterplan Boundary

Type

Box

Tube

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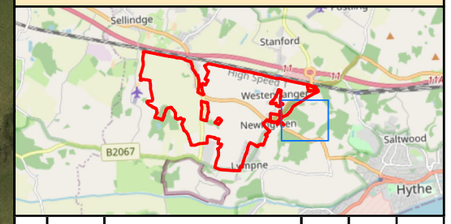

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Figure 4
Dormouse Survey Tube and Box Locations Kiln Wood (Survey 2)

scale	original size	datum	grid
1:3,500	A3	Sx	BNG

0 1:3,500 140 Metres

C:\Users\psi01069\ARCADIS\10029956 - Otterpool Park Stage 4a - 23 GIS\Figures_2021\Ecology\7.8 - Dormouse\Figure 4 - Dormouse Survey Tube and Box Location Kiln Wood (Survey 2).mxd

Figure 5: Dormouse survey results – Survey 2 (2018)

N.B Dormouse signs were only observed within Harringe Brooks Wood.

N
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0 1:3,000 120 Metres

Legend

- Outline Planning Application Boundary
- Framework Masterplan Boundary
- Dormouse Nest 28.11.2018
- Dormouse Nest 25.10.2018 and 28.11.2018
- Woodmouse Nest 28.11.2018

Type

- Box
- Tube

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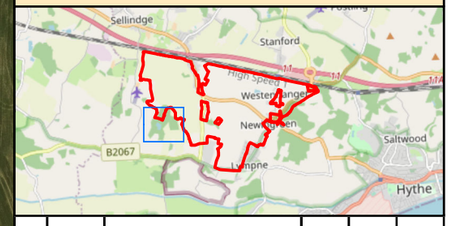

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Figure 5
Location of Dormouse
Nest Found 25.10.2018 and 28.11.2018 (Survey 2)

scale	original size	datum	grid
1:3,000	A3	Sx	BNG

Figure 6: Dormouse tube locations and survey results – Survey 3 (2021)

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Legend

- Outline Planning Application Boundary
- Framework Masterplan Boundary
- Tube
- Box
- Unknown Nest – likely Woodmouse

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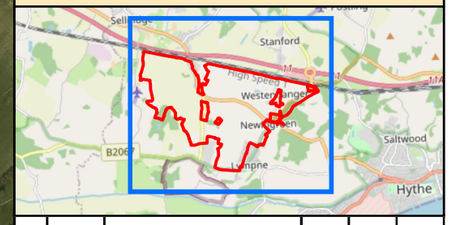

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Figure 6
Hazel Dormouse Survey Results (Survey 3)

scale	original size	datum	grid
1: 15,000	A3	Sx	BNG

0 1:15,000 1 km

C:\Users\psi01069\ARCADIS\10029956 - Otterpool Park Stage 4a - 23 GIS\Figures_2021\Ecology\7.8 - Dormouse\Figure 6 - Hazel Dormouse Survey Results (Survey 3).mxd

: Target notes shown in Figure 2

Target Note	Grid reference	Date	Tree Species	Information
TN1	TR128368	24/08/17	Blackthorn	Food cache – species unidentified.
TN2	TR125364	24/08/17	Willow sp.	Wood mouse nest
TN3	TR107363	24/08/17	Hawthorn	Wood mouse nest
TN4	TR099373	24/08/17	Elder	Wood mouse nest
TN5	TR122358	25/08/17	Blackthorn	Unidentified nest
TN6	TR118369	25/08/17	Blackthorn	Wood mouse nest
TN7	TR128369	25/09/17	Blackthorn	Wood mouse nest – contained 3 adult wood mice.
TN8	TR128366	25/09/17	Blackthorn	Wood mouse nest
TN9	TR125363	25/09/17	Elder	Wood mouse nest
TN10	TR120370	25/09/17	Hawthorn	Wood mouse nest
TN11	TR120372	25/09/17	Hawthorn	Wood mouse nest
TN12	TR118374	25/09/17	Willow sp.	Wood mouse nest
TN13	TR112373	25/09/17	Blackthorn	Wood mouse nest
TN14	TR121362	26/09/17	Blackthorn	Wood mouse nest – contained 4 adult wood mice.
TN15	TR122358	26/09/17	Hawthorn	Food cache – identified as wood mouse.
TN16	N/A – Desk study data	Within desk study data – survey	Hazel	Potential dormouse nest of intertwined leaves and grass.

Target Note	Grid reference	Date	Tree Species	Information
		conducted 9 November 2009		
TN17	N/A – Desk study data	Within desk study data survey conducted 17 May 2011	Dogwood	One old dormouse nest found.

APPENDIX A: Site Photographs

Photograph 1: Unidentified nest (TN5; TR122358). Predominantly made of thistledown with a loose structure. Likely wood mouse considering nest composition.

Photograph 2: Area of suitable woodland (Park Wood) at OS grid reference TR105372, predominantly comprised of coppiced Hazel trees.

Photograph 3: Example of species rich hedgerows on site (photograph taken in February). Hedgerows at TR 103 376

Photograph 4: Example of species rich hedgerows on site (photograph taken in February). Hedgerows at TR 103 376

Photograph 5: Habitat within Harringe Brooks Woods, off site to the west

Photograph 6: Photograph of the dense vegetation along the river corridor, taken at: TR 11663 36973

Photograph 7: Dormouse nest found within Harringe Brooks Wood on 25 October 2018 and 28 November 2018

Photograph 8: Dormouse tube within which a nest was found on 25 October 2018 and 28 November 2018

Photograph 9: Dormouse nest within tube 18 (Harringe Brooks Wood) found on 28 November 2018

Photograph 10: Dormouse nest within tube 21 (Harringe Brooks Wood) found on 28 November 2018

Photograph 11: Unknown nest of green hazel leaves within tube 20 (Park Wood) found on 28 September 2021. This example is typical of the green leaf nests found in 2021.

APPENDIX B: Pen Portraits of Surveyors

Surveyor	CV details
Ewan Gibson BSc (hons) Grad CIEEM (2015)	Ewan Gibson is a graduate ecologist with a broad range of ecological experience. Ewan has been a professional ecologist for five years and has conducted surveys for a range of species, including bats, badger, dormouse, amphibians and reptiles, as well as being licensed to survey for barn owl. Ewan strives to collect and collate data with accuracy and precision. He has received in-house 'on the job' training in order to understand the requirements of these surveys, including the usage of survey equipment and identification of field signs.
Polly Tayler BSc (hons) MSc MCIEEM (2017)	Polly has over nine years' experience relating to ecology and conservation and has worked on a number of projects for a diverse range of clients undertaking protected species surveys. Polly holds a dormouse survey licence, licence number 2017-28430-CLS-CLS. Polly has led on a number of dormouse surveys coordinating the planning or surveys including locations, tube deployment and survey effort ensuring that surveys are undertaken in line with current best practice guidelines and legislation.
Tom Johnson BSc (hons) GradCIEEM (2017)	Tom is a professional ecologist who has worked in the sector for over six years and is currently a graduate member of CIEEM. Tom regularly undertakes protected species surveys and has experience in surveying for Dormice on a number of different projects including the A2 Bean to Ebbsfleet junction in Kent. He is capable of deploying and checking dormice tubes / boxes as well as handling and processing dormice while under supervision of a licenced ecologist.
Brandon Murray BSc (hons) MCIEEM (2017)	Brandon has been a professional ecologist for over ten years and has surveying for dormice. Brandon has handled dormice under the supervision of licenced ecologists and attended a dormouse surveying training course.
Ellen Poppleton, BSc (hons) Grad CIEEM (2017)	Ellen Poppleton has been an ecologist for over two years. She has experience surveying for reptiles, bats, badgers, dormice amphibians and water voles. Ellen has received internal and on the job training to make sure that she can confidently conduct a range of protected species surveys under appropriately skilled supervision.
Jonathan Wood BSc (hons) MSc PIEMA (2017)	Jonathan Wood has been an Environmental Consultant for over four years. Jon has received on the job training to also him to confidently assist with ecological surveys under appropriately skilled supervision.
Kora Kunzmann BSc MSc GradCIEEM (2018)	Kora is a consultant ecologist with a broad range of ecological experience. Kora has been a professional ecologist for nearly six years and has conducted surveys for a range of species, including dormouse, bats, badger and reptiles, as well as being licensed to survey for great crested newts. Kora is working towards obtaining a dormouse licence and currently surveys as an accredited agent under Hannah Tracey's licence, licence number is 2017-32764-CLS-CLS. Kora strives to collect and collate data with accuracy and precision. She has also experience in coordinating surveys for large projects, stakeholder engagement and report writing.

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