

A358 Taunton to Southfields Dualling Scheme

Ecological Baseline Report - Hazel Dormouse

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Executive summary

The A358 Taunton to Southfields Dualling scheme would provide a dual carriageway along the length of the A358 between Taunton and Ilminster in Somerset, connecting the M5 motorway to the A303 at Ilminster to the south.

Hazel dormouse (*Muscardinus avellanarius*) surveys were part of the suite of habitat and protected species surveys commissioned in relation to the scheme. This report presents the results of the hazel dormouse surveys undertaken throughout 2021 and aims to inform the ecology baseline for the scheme.

The objectives of this report are to present the methodologies used, identify survey limitations, and present the results of nest box and nest tube surveys; the results of which will be used to inform appropriate mitigation and enhancement.

The hazel dormouse is afforded full protection under the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981. Hazel dormouse is listed as a species of principal importance in accordance with Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Hazel dormice are nationally rare and vulnerable to extinction. Although the exact size of the UK population is unknown, there has been a long-term decline in both numbers and geographical range. Even in southern counties such as Somerset, where the population is widespread in comparison to the rest of the UK, the distribution of hazel dormice is still patchy.

Twenty-seven survey areas across the full length of the scheme were identified as providing suitable habitat to support hazel dormouse. These 27 survey areas were subject to hazel dormouse nest tube and box surveys in 2021, using nationally accepted best practice survey methods. A series of limitations were encountered during the surveys, including withdrawal of land access, national shortage of nest box production due to COVID-19 and removal or relocation of nest tube and boxes during September 2021 due to hedgerow management by landowners across the scheme. Overall, the limitations are not considered significant, and the baseline detailed within this report is reliable for the purposes of the assessment of the scheme upon hazel dormice.

Following the completion of these surveys, 26 survey areas had confirmed presence of hazel dormouse within the suitable habitat. In instances where land access was delayed and a full season of surveys was unable to be completed, further surveys will be undertaken in 2022. This includes the one survey area where dormouse presence has not been confirmed to date. The impact assessment upon the populations within these survey areas and any mitigation measures required will be fully detailed within Chapter 8 of the Environmental Statement (ES), and the results of the 2022 surveys included in an addendum to the ES.

1 Introduction

1.1 Purpose and scope of this document

- 1.1.1 The A358 Taunton to Southfields Dualling scheme (hereafter referred to as ‘the scheme’) would provide a dual carriageway along the length of the A358 between Taunton and Ilminster in Somerset, connecting the M5 motorway to the A303 at Ilminster to the south. Hazel dormouse (*Muscardinus avellanarius*) surveys were part of the suite of habitat and protected species surveys commissioned in relation to the scheme.
- 1.1.2 This report presents the results of the hazel dormouse surveys and aims to inform the ecology baseline for the scheme.
- 1.1.3 The objectives of this report are to:
- undertake a review of hazel dormouse records within 2 kilometres of the scheme
 - determine the presence or likely absence of hazel dormouse populations in any suitable habitat within the study area of the scheme
 - provide sufficient information to inform an assessment of potential impacts to hazel dormice as a result of the scheme and design appropriate mitigation measures (where required)

1.2 Scheme overview

- 1.2.1 The scheme is part of a programme of improvements planned along the A303/A358 corridor aimed at improving connectivity between London, the south-east and the south-west. The A303, alongside the A30, forms part of the strategic road network (SRN) and together with the A358, provides the link between London, the south-east and the south-west.
- 1.2.2 The programme of improvements, as set out in the Government’s *Road Investment Strategy* [1] made a commitment to, “...upgrade all remaining sections of the A303 between the M3 and the A358 to dual carriageway standard, together with creating a dual carriageway link from M5 at Taunton to the A303”.
- 1.2.3 The scheme directly addresses this long-term commitment and would provide a new rural all-purpose dual carriageway link from the M5 at Taunton to the A303 at Southfields roundabout. The new dual carriageway would comprise new and upgraded stretches of the existing A358 road. Full details of the scheme will be provided in Chapter 2 *The Project* of the Environmental Statement (ES). Please refer to Figure 1-1 for the scheme plan.

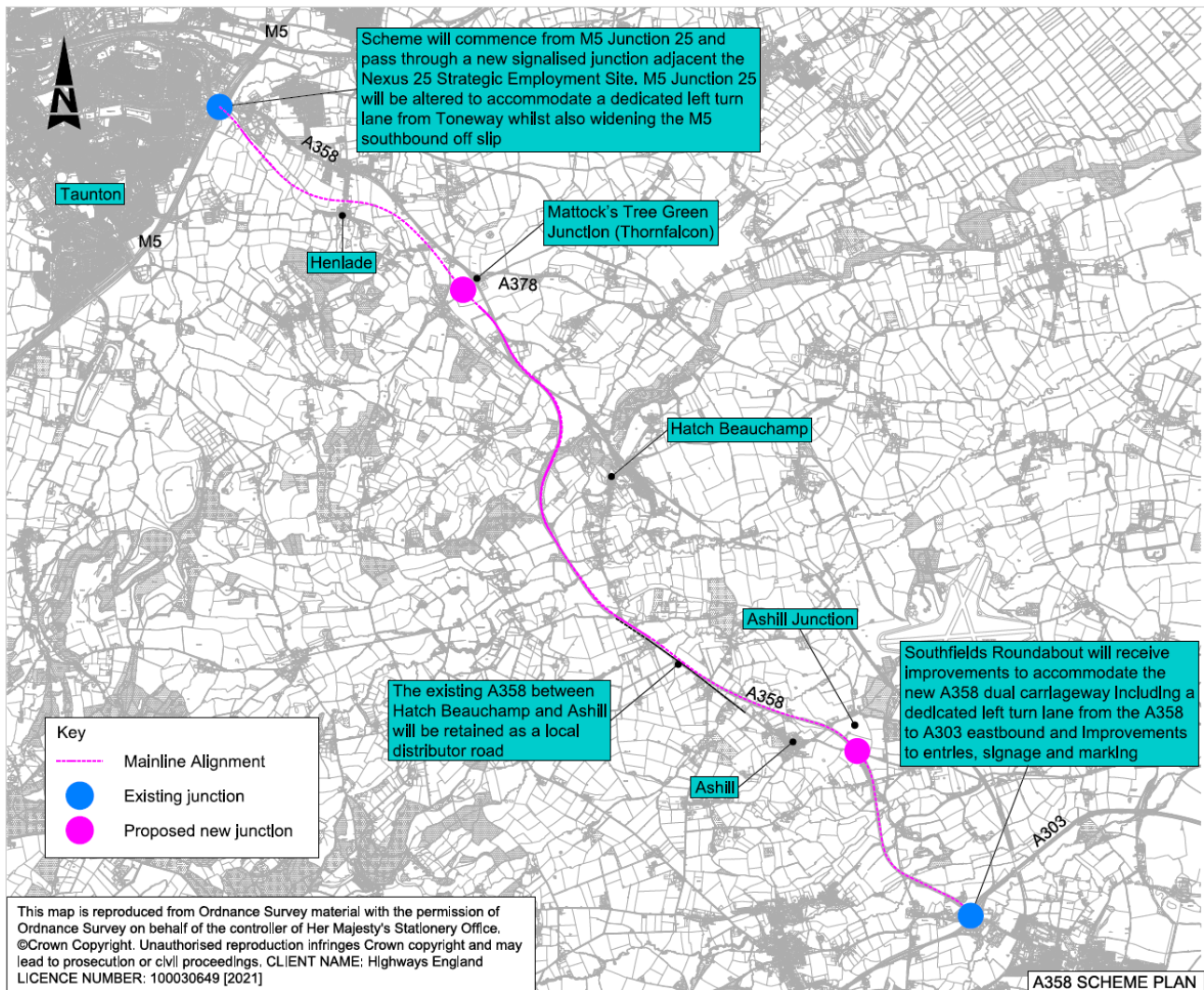


Figure 1-1 Scheme plan

1.3 Study area and zone of influence

1.3.1 The Chartered Institute for Ecology and Environmental Management (CIEEM) *Guidelines for Ecological Impact Assessment* [2] recommend that all potentially important ecological features that occur within the Zone of Influence (Zoi) for a scheme are investigated. The Zoi includes:

- areas to be directly within the land take for the scheme
- areas that would be temporarily affected during construction
- areas likely to be impacted by hydrological disruption
- areas where there is a risk of pollution and noise disturbance during construction and/or operation

1.3.2 The Zoi depends on the ecological features concerned. With regard to the habitats likely to be affected by the scheme, the Zoi has been defined as land within 100 metres of the defined ecology survey zone, which comprises the footprint of the scheme and associated site clearance area. This Zoi is hereby referred to as the study area. In some instances, the study area has extended beyond 100 metres where small pockets of habitat would be fragmented from the wider habitat network by the construction of the scheme and potentially create isolated dormouse populations. In such instances professional judgement has

been applied to determine the study area required to gather the appropriate baseline data to inform the impact assessment and mitigation design process.

1.4 Legislation

- 1.4.1 A framework of international, European, national and local legislation and planning policy guidance exists to protect and conserve wildlife and habitats. This legislation will be listed in full within Chapter 8 *Biodiversity* of the ES. Legislation relevant to and discussed within this report are:
- The Conservation of Habitats and Species Regulations 2017
 - Wildlife and Countryside Act 1981
 - Natural Environment and Rural Communities (NERC) Act 2006
- 1.4.2 The hazel dormouse is fully protected by the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981.
- 1.4.3 Under Regulation 43 of the Conservation of Habitats and Species Regulations it is illegal to:
- deliberately capture, injure or kill a hazel dormouse
 - possess or control any live or dead specimen or anything derived from a hazel dormouse
 - deliberately disturb a hazel dormouse (in particular, disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, to hibernate or migrate or to affect significantly the local distribution or abundance of the species to which they belong)
 - damage or destroy a breeding site or resting place of a hazel dormouse
 - possess, transport, advertise, sell or exchange a hazel dormouse (dead or alive) or any part of a dormouse
- 1.4.4 Under schedule 5 of the Wildlife and Countryside Act 1981 it is illegal to:
- intentionally kill, injure or take a hazel dormouse
 - possess or control any live or dead specimen or anything derived from a hazel dormouse
 - intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a hazel dormouse
 - intentionally or recklessly disturb a hazel dormouse whilst they are occupying a structure or place used for that purpose
- 1.4.5 The UK Biodiversity Action Plan (UKBAP) 1994 – 2010 has been superseded by the UK Post-2010 Biodiversity Framework covering the period 2011 - 2020 [3]. However, UKBAP priority habitats and species have been used to form the basis for the statutory list of habitats and species of ‘principal importance for the conservation of biodiversity in England’ as listed in accordance with Section 41 of the NERC Act 2006.
- 1.4.6 Section 40 of the NERC Act 2006 requires public bodies, including local authorities, ‘to have regard to the conservation of biodiversity in England’ when carrying out their normal functions. The local planning authority, therefore, must consider the impact on biodiversity of the proposed development. The NERC Act 2006 identifies species of ‘principal importance for the conservation of biodiversity in England’ (SPI) to guide public bodies in implementing their duty. This priority list includes hazel dormouse. The strategic direction for biodiversity policy for the next decade is set out in Biodiversity 2020: a national strategy for England’s wildlife and ecosystem services [4].

1.5 Status of hazel dormouse at national level

- 1.5.1 Hazel dormice are native to the UK but are nationally rare and vulnerable to extinction, largely due to habitat loss. They are a SPI for the conservation of biodiversity in England under the NERC Act (2006). Although the exact size of the UK population is unknown, there has been a long-term decline in both number of individuals and the geographical range [5].
- 1.5.2 The distribution of hazel dormouse is predominantly confined to southern England and southern Wales and is fragmented throughout. However, due to conservation efforts, including hazel dormouse reintroductions, there are isolated populations of dormouse located in the midlands and north of England. Dormouse monitoring programmes have recently provided an indication that the decline may be slowing and as part of an ongoing hazel dormouse reintroduction programme, the current range is slowly being extended to the north.

1.6 Status of hazel dormouse at county level

- 1.6.1 Even in southern counties such as Somerset, where the population is relatively widespread in comparison to the rest of the UK, the distribution of hazel dormice is still described as very patchy [5].
- 1.6.2 Hazel dormice are listed within the *South Somerset Local Biodiversity Action Plan* (LBAP) [6], as well as being noted as a priority species within the *Somerset Notable Species Dictionary* [7], which emphasises recording effort on species that are noted as uncommon, rare or of other ecological importance.

1.7 Hazel dormouse ecology

- 1.7.1 The hazel dormouse annual cycle commences on emergence from hibernation. Whilst they occasionally arouse between February and March and show some signs of short periods of activity between March and April, hazel dormice become fully active between April and May. They will breed between May and June, with a first litter being born between June and July, and an occasional second brood between August and September. Hazel dormice start preparing for hibernation in September, where they will feed to increase their body weight. From November onwards, they will start creating hibernation nests on the ground, within coppice stools, log piles or leaf litter [8].
- 1.7.2 As they are arboreal, hazel dormice are reluctant to cross open ground, and rely on interconnected habitat (tree/shrub canopy) to travel. Suitable hazel dormouse habitat includes deciduous woodland with a dense understory (particularly managed coppiced woodland), oak woodland with hazel (e.g. derelict coppice), dense scrub habitat, hedgerow, and occasionally conifer woodland/plantation [9] [10]. As sequential, specialist feeders, they rely on food diversity within their home range, which typically comprises of nectar, pollen, seeds, fruit, nuts and invertebrates [8]. Male dormice are known to range typically up to 0.75ha, whereas the females have a slightly smaller range.
- 1.7.3 The population of hazel dormice has significantly declined in recent years; data from the People's Trust for Endangered Species (PTES) shows a population decline of 51% since 2000, although this decline may be slowing [5]. The decline has been attributed to inappropriate management and fragmentation of woodlands and hedgerows, as well as variable climate impacting hibernation and breeding success.

2 Methodology

2.1 Desk study

- 2.1.1 A biological records search was conducted to obtain existing records of legally protected and notable species, including hazel dormice. Species records within 2 kilometres of the scheme were requested from the Somerset Environmental Records Centre (SERC) in January 2021. Records of over 10 years of age were omitted as they may not accurately represent the current status of dormouse populations in the area.
- 2.1.2 A review of the Ordnance Survey and online aerial mapping resources was also carried out to identify woodlands within the study area, as confirmed by Natural England, and those within the surrounding landscape that are functionally linked to the study area by a network of hedgerows. A review of the *A358 Taunton to Southfields Dualling Dormouse Technical Report (March 2021)* [11] and the *A358 Taunton to Southfields Preliminary Ecological Appraisal (PEA) Report (June 2016)* [12] was also undertaken. Broadleaved woodlands in excess of 20ha are generally considered as optimal habitat for supporting a viable population of hazel dormice. However, smaller woodlands and hedgerows are also considered as suitable if they are well connected to other habitats that offer sufficient food sources and habitat throughout the year [8].
- 2.1.3 Suitable areas of habitat were identified across the study area, given the prevalence of suitable habitats, primarily in the form of species rich hedgerows, surveys were targeted to sample regular points of suitable habitat along the scheme. This then allows the results to be extrapolated to connected suitable habitats adjacent to the surveyed areas. This targeted approach was agreed with Natural England. All survey areas were given a unique identifier that corresponds to the unique identifiers within the March 2021 report, with the first survey area referenced in this report identified as 6A. Due to restricted land access, survey area 13 was split into survey area 13A and survey area 13B to maximise the probability of detecting dormice, as survey area 13B was not accessible until July 2021.

2.2 Field study

- 2.2.1 All surveys were led by experienced ecologists: Ed Venables, Jack Medley, Jay Allen, Jenny Singh, Marie Fleming and Mike Ashford, with each survey lead holding a Natural England Level 1 Dormouse survey licence (WML-CL10(a)).

Nest tube/box survey

- 2.2.2 Designed to replicate the natural nesting opportunities provided by tree cavities, hedgerows and scrub, nest tubes and boxes were deployed within suitable habitats, as shown in Appendix C *Hazel dormouse survey area plan*. On occasion, nest boxes and tubes were installed outside of the 100 metre study area to investigate the presence of dormice within functionally linked habitat.
- 2.2.3 Nest tubes were deployed every 15 to 20 metres, in accordance with best practice methodology [8], and a nest box was deployed every 100 metres (or after every fourth nest tube) to provide alternative nesting opportunities. In total, 1747 nest tubes and 418 nest boxes were installed between April and June 2021 within suitable habitat likely to support dormice.

2.2.4 All surveys were undertaken following the *Dormouse Conservation Handbook* [8] and *National Dormouse Monitoring Programme (NDMP) survey guidelines* [13]. Where land access allowed, surveys were undertaken between the 15th and 25th of each month. Table 2-1 outlines the biometrics recorded upon discovering a dormouse. Other details recorded include weight to the nearest 0.5 grams and any noticeable physical features of identification, such as a white-tipped tail, or a missing tail.

Table 2-1 Biometrics recorded upon identifying a dormouse

Biometrics recorded	Observed results	Comment
Sex	Male	Male genitalia clearly observed
	Female	Female genitalia clearly observed
	Unknown	Sex undetermined
Status	Torpid	Individual is in a state of torpor (inactivity)
	Active	Individual is clearly awake, alert, and active
	Dead	Individual is deceased
Breeding condition	Male with testes scrotal	Male with descended testes and is ready to breed
	Pregnant female	Female displays signs of pregnancy, including swollen belly and protruding nipples
	Lactating female	Female displays signs of post birth, including protruding nipples with recent hair loss indicative of suckling young
	Female post lactation	Female with scarring around nipples, indicative of historic litters
	Non-breeding	Individual (often juvenile) displays no sign of breeding
	Unknown	Breeding condition undetermined
Age class	Adult (approx. 8-12 months +, weight 12g+)	Sandy/ginger in colour with brown, bushy tail. To class as an adult, individual must have survived at least one winter/hibernation
	Juvenile (approx. 28+ days old, weight 10g+)	Similar sandy/ginger colour to adult, but coat still has some grey fur within. Individual is completely independent from mother, however, has not yet experienced hibernation
	Grey eyes open (GEO) (approx. 16-28 days old, weight 6-10g)	Individual with grey fur, and eyes clearly open, showing first signs of independence from mother
	Grey eyes closed (GEC) (approx. 6-16 days old, weight 2.5-6g)	Individual with grey fur, and eyes closed. Still suckling and heavily reliant on mother
	Pink (approx. 0-6 days old, weight 1-2g)	Individual has been recently born and is completely pink (no fur). Eyes have not fully developed yet

2.2.5 Whilst it is possible to estimate the age of an individual based on weight classification alone, where other biometrics were successfully recorded, an

estimation on age class was made based on all factors present, including weight, size, fur colour and comparison with other individuals (if applicable).

- 2.2.6 The *Dormouse Conservation Handbook* [8] describes an index of probability which dictates sufficient survey effort which should be undertaken to confidently detect dormice or assume likely absence on a site where a minimum of 50 dormouse tubes have been installed. Set scores are awarded for each month of survey effort, as detailed in Table 2-2.
- 2.2.7 The indices awarded for a single survey in each month should be added up for a total index of probability of detecting dormice. Assumed likely absence should not be based on a search effort score of less than 20, therefore nest tube surveys should aim to equal or exceed this score by including monthly checks from spring into autumn.

Table 2-2 Index of probability of detecting dormice in nest tubes by month

Month	Index of probability
April	1
May	4
June	2
July	2
August	5
September	7
October	2
November	2

Population density estimate

- 2.2.8 The *Dormouse Conservation Handbook* [8] details that whilst dormouse population density can only accurately be estimated using mark-recapture techniques, a rough estimate of minimum pre-breeding density can be made by using the number of dormice found in boxes in May divided by the survey area (in hectares). For practical reasons, however, the surveys reported herein utilised predominantly nest tubes, which provides a good indication of hazel dormouse presence/likely absence, however, cannot be used for estimating population density. To allow a basic comparison of likely population densities where hazel dormouse are present, the *Dormouse Conservation Handbook* provides estimates of 'Small mammal population densities (pre-breeding numbers of adults per ha)' for a range of habitat types, which has been replicated below in Table 2-3.

Table 2-3 Hazel dormouse population densities (pre-breeding numbers of adults per ha) adapted from *Dormouse Conservation Handbook* Table 2

Habitat	Mean spring density (individuals per ha)
Optimal habitat (diverse deciduous woodland with abundant scrub and vigorous understorey)	4 to 10 adults
Oak dominated woodland, with hazel	2 adults, increased by 48 per cent by appropriate management
Scrub	Unknown
Conifer woodland	1 to 3 adults

Habitat	Mean spring density (individuals per ha)
Hedgerow	1.3 adults

2.2.9 To give an indication of population density to allow some comparison between survey areas, peak counts of adults recorded at each survey area have been divided by the area of suitable habitat surveyed and reported herein. It is recognised that these figures are likely to be an underestimate for population size given that it is generally accepted that nest tube surveys only sample approximately one third of the population.

2.3 Assumptions and limitations

- 2.3.1 Due to land access restrictions, survey areas 11, 12 and 13B, were not accessible until late June 2021, therefore survey checks were not undertaken during May and June and the survey remains incomplete. These areas will, therefore, be subject to surveys in 2022.
- 2.3.2 Land access was not granted to a small portion of survey area 10A in time for the set-up in April 2022, access was subsequently granted however due to impenetrable bramble was not able to be surveyed. This inaccessible section comprised the disused Chard Branch Lines railway in West Hatch. The wider network of functionally linked hedgerow and scrub habitats that makes up the remainder of survey area 10A was able to be surveyed, the presence or likely absence of dormice within the disused railway has therefore been extrapolated from this data.
- 2.3.3 Access was withdrawn within the southern half of survey area 16 during the spring and summer, therefore it was not possible to survey the full extent of suitable habitats within this area. The habitat within this inaccessible portion is similar and functionally linked to the surveyed portion, therefore the results can be extrapolated to the wider survey area to interpret likely presence/likely absence.
- 2.3.4 Overall, where land access permitted, the majority of suitable habitat was surveyed across the entirety of the scheme. However due to the magnitude of the suitable habitat, it was not possible to survey all hedgerows within the designated survey areas. Where necessary, results for these areas have been extrapolated based on habitat connectivity, as well as similar hedgerow structure and species present.
- 2.3.5 Due to impacts of the COVID-19 pandemic, there was a national reduction in nest box production and availability. As a result, the deployment of boxes was completed in stages between April and May (as equipment became available); however, a minimum of 50 tubes were deployed at each survey area in line with the *Dormouse Conservation Handbook* [8], with survey areas 6A, 7A, 10A, 12, 13B, 16A, 17, 18, 19, 23, 24, 25, 26, 27, 28, 29, 30, 31, 34, 35, 36, 37 supplemented with boxes by the end of May. The occupation of dormice within boxes during May is recommended as the basis for an estimation of population size; however, it is recognised that this is not precise, therefore due to the shortage of boxes, the population estimates are based largely on peak counts of adult individuals found within nest tubes.
- 2.3.6 Each survey area had at least 50 nest tubes/boxes deployed in line with the requirements for presence/likely absence surveys as detailed in the *Dormouse Conservation Handbook* [8]. However, within survey area 7A, due to unsuitable vegetation, it was only possible to deploy 44 tubes/boxes. This survey area is,

however, functionally linked, and supports similar habitats to survey area 27, therefore an assessment of the likely presence/likely absence of dormice can be robustly extrapolated from the results of survey area 27.

- 2.3.7 Within the majority of survey areas, boxes were deployed evenly (roughly one box after every four evenly spaced tubes), to ensure a consistent approach to survey of suitable habitats across the scheme. Due to vegetation structure within survey area 12, it was not possible to deploy boxes within many of the hedgerows; tubes were successfully deployed in these locations instead with box deployment clustered along a riparian corridor where more substantial vegetation was present.
- 2.3.8 Due to the intensively managed nature of the agricultural landscape through which the scheme passes, landowners undertake annual hedgerow management in September/early October on completion of the bird nesting season. Through liaison with landowners, management was largely delayed allowing completion of the September survey check of the nest tubes and boxes, prior to hedgerow cutting. However, in the majority of cases this required the surveys to be undertaken prior to the preferred survey window of day 15-25 of the month. Where active dormouse nests were identified during this final survey, the tubes/boxes were relocated deeper into the hedgerow to minimise any risk to nests within.
- 2.3.9 As discussed above, survey areas 11, 12 and 13B were not able to be deployed until June due to land access restrictions. These areas were also subject to hedgerow management, with tubes and boxes temporarily removed for two weeks in September to allow management to be undertaken, before tubes and boxes were redeployed. Due to the disturbance to survey equipment in September, the data collected that month will not be counted as a valid check, therefore surveys will continue into August 2022 to ensure sufficient survey effort is achieved. Table 2-4 details the commencing and final survey dates for each area, and its corresponding index of probability score for detecting dormice.
- 2.3.10 Efforts were made to take biometric recordings of all dormice encountered (with the exception of pink babies) to help provide an understanding of the health of the population. On occasions dormice escaped before biometric measurements could be taken. As the ultimate aim of the survey is to confirm the presence/likely absence of dormice within the study area, the lack of the occasional biometric data is not considered a significant limitation to the validity of the survey. For the purposes of population density assessments, any dormice that escaped before biometrics could be collected were assumed to be adults, unless there were any other clear indicators of age class (such as an adult female dormouse within a box of GEO).
- 2.3.11 Surveys were scheduled to avoid adverse weather conditions, however if weather conditions deteriorated whilst onsite, surveys were modified to reduce handling and disturbance, or abandoned entirely to minimise distress to any dormice observed.
- 2.3.12 On 23 September 2021, a deceased male dormouse was found in survey area 26. It was assumed that the dormouse had been recently killed, potentially by wood mice that had taken over neighbouring nests. This individual was collected and sent to PTES for post-mortem in order to determine a full cause of death. Deceased dormice were also found in survey areas 12 and 23; however, these

individuals were not sent away as they were found in an advanced state of decay and were deemed non-viable for post-mortem.

Table 2-4 Survey dates and index of probability in detecting dormice

Survey area	First survey date	Final survey date	Index of probability of detecting dormice score
6A	17/05/2021	20/09/2021	20
7A	18/05/2021	20/09/2021	20
10A	17/05/2021	24/09/2021	20
11	20/07/2021	20/10/2021	9*
12	20/07/2021	19/10/2021	9*
13A	25/05/2021	22/09/2021	20
13B	20/07/2021	20/10/2021	9*
16A	18/05/2021	21/09/2021	20
17	18/05/2021	21/09/2021	20
18	20/05/2021	22/09/2021	20
19	20/05/2021	22/09/2021	20
21	25/05/2021	22/09/2021	20
23	20/05/2021	24/09/2021	20
24	24/05/2021	23/09/2021	20
25	21/05/2021	23/09/2021	20
26	25/05/2021	23/09/2021	20
27	27/05/2021	22/09/2021	20
28	18/05/2021	21/09/2021	20
29	24/05/2021	23/09/2021	20
30	20/05/2021	20/09/2021	20
31	18/05/2021	21/09/2021	20
32	19/05/2021	20/09/2021	20
33	20/05/2021	24/09/2021	20
34	20/05/2021	24/09/2021	20
35	19/05/2021	23/09/2021	20
36	20/05/2021	22/09/2021	20
37	24/05/2021	22/09/2021	20

*Due to hedgerow management, tubes and boxes were temporarily removed for 2 weeks during September within hedgerow sections of these survey areas, as such the score for index of probability score for September has not been included.

3 Results

3.1 Desk study

- 3.1.1 Analysis of aerial imagery confirmed that the study area comprised woodland parcels and scrub functionally linked by hedgerows and tree belts along the existing A358 and connecting into a wider hedgerow network through intensively managed agricultural land. These areas had the potential to support hazel dormice, however, it was noted that the majority of the surrounding land comprised intensively managed arable land, with heavily flailed hedgerows.
- 3.1.2 The data search results from SERC returned 33 records of hazel dormouse within 2 kilometres of the study area. These are summarised in Appendix A *Hazel dormouse biological records summary table* and shown on Appendix B *Hazel dormouse biological records plan*. Fifteen records were located between Ruishton and Henlade, largely along the M5 corridor, with the closest record situated directly within the scheme boundary. Eight additional records also fell directly within the scheme boundary, at seven locations east of Capland, and one further record in Ashill. The closest records outside of the scheme boundary, approximately 6.4 metres south of the scheme boundary, formed a cluster of six records between Bickenhall woodland and Saltfield Copse to the west of the existing A358.

3.2 Field study

- 3.2.1 The main areas of potential hazel dormouse habitat within the study area were woodland blocks connected by hedgerows and dense areas of scrub habitat, which were surveyed using nest tubes and boxes. In areas of semi-natural broadleaved woodland, nest tubes and boxes were deployed predominately on pedunculate oak (*Quercus robur*), hazel (*Corylus avellana*), elder (*Sambucus nigra*), beech (*Fagus sylvatica*), ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*) and willow spp. (*Salix spp.*). Likewise, within hedgerow and scrub habitats, tubes and boxes were predominately deployed on hazel, bramble (*Rubus fruticosus*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), dogwood (*Cornus sanguinea*), field maple (*Acer campestre*), honeysuckle (*Lonicera periclymenum*) and elm spp. (*Ulmus spp.*).
- 3.2.2 The location of each survey areas is shown on Appendix C *Hazel dormouse survey area plan* and full results of the field study are presented in Appendix D *Hazel dormouse survey results plan*.

Survey area 6A

Habitat description

- 3.2.3 Survey area 6A is located at the northern end of the scheme to the south of the existing A358, west of Henlade. Habitats present included species-poor managed hedgerows dominated by blackthorn and hawthorn, with standard mature oak trees. In places the hedgerows had become gappy. However good connectivity was maintained at the tree canopy level. Survey area 6A also included part of the Black Brook riparian corridor, which was lined by scrub including a mix of species such as elm, dogwood, hawthorn, bramble, with mature oak and ash trees. Figure 3-1 illustrates the type of habitat present at survey area 6A.

3.2.4 The survey area covered approximately 1.8 kilometres of suitable dormouse habitats. With an estimated average hedgerow width of 3 metres, the area of suitable habitat surveyed was estimated to be 0.54 hectares



Figure 3-1 Survey area 6A habitat example

Nest tube and box surveys

3.2.5 Dormouse were confirmed to be present within survey area 6A, with the first evidence of dormouse being nests and a single, active, non-breeding adult male encountered on 19 July 2021. Across the whole survey season, evidence of dormouse was encountered in nine of the 79 tubes/boxes; this represents 11.4% of nest tubes/boxes across the survey area. Individual dormice were encountered on three occasions within tube number 40 in July, August and September, however the peak count for dormice in this area was only one. No females with young were encountered.

3.2.6 A summary of the dormouse evidence encountered within survey area 6A is provided in Table 3-1.

Table 3-1 Dormouse evidence for survey area 6A

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
1	19/07/2021	Dormouse nest comprised some dried grasses and brown leaves	Possible start of dormouse nest but remained unoccupied and inactive throughout survey season
6	20/09/2021	Dormouse nest comprising woven grass with green leaves	Active but unoccupied dormouse nest observed during September checks only
7	16/08/2021	Dormouse nest comprising woven grass with green leaves	Active but unoccupied dormouse nest observed during August and September checks
22	19/07/2021	Dormouse nest comprising woven grass with damp brown and some green leaves	Active but unoccupied dormouse nest observed during July, August and September checks
31	20/09/2021	Dormouse nest comprising woven grass with dried brown and some green leaves	Active but unoccupied dormouse nest observed during September checks only
37	16/08/2021	Dormouse nest of dried and woven grass	Possible start of dormouse nest but remained unoccupied and inactive throughout survey season
39	20/09/2021	Dormouse nest of dried leaves	Active but unoccupied dormouse nest observed during September checks only

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
40	19/07/2021	Dormouse nest comprising woven grass and brown leaves	Occupied dormouse nest observed during checks in July, August and September July: Single, active, non-breeding adult male. Weight 16g August: Single, active, assumed adult, observed leaving the nest before biometrics could be recorded. September: Single, active, non-breeding juvenile male. Weight 16g with short tail showing signs of recent conflict
42	20/09/2021	Dormouse nest of dried and woven grass with some green leaves	Active but unoccupied dormouse nest observed during September checks only

3.2.7 Dormouse evidence was found only within the hedgerows to the south of the Black Brook, with the greatest concentration of evidence found within hedgerows to the south-west of the area.

3.2.8 The peak adult count during the surveys was one dormouse (recorded in July, August & September) across the surveyed area, which represented approximately 0.5 hectares of suitable habitat. This equates to an estimated population density of 2.0 adults per hectare. While it is recognised that this is likely to be an underestimate, it is consistent with the figure of 1.3 adult dormice per hectare given for hedgerow habitat in the Dormouse Conservation Handbook.

Survey area 7A

Habitat description

3.2.9 Survey area 7A is located at the northern end of the scheme to the south of the existing A358, east of Henlade. Habitats present included lowland mixed deciduous woodland with dense scrub comprising bramble, hawthorn, hazel and oak. This woodland was also connected to the wider landscape via native species-rich hedgerows with trees, predominantly elm, with bramble, hazel, honeysuckle and hawthorn. Figure 3-2 illustrates the type of habitat present at survey area 7A.

3.2.10 The survey area covered approximately 1.03 kilometres of suitable dormouse habitats. With an estimated average hedgerow width of 3 metres, the area of suitable habitat surveyed was estimated to be 0.3 hectares.



Figure 3-2 Survey area 7A habitat example

Nest tube and box surveys

- 3.2.11 Dormice were confirmed to be present within survey area 7A, with the first evidence of dormouse being a single, active, non-breeding adult male encountered on 18 May 2021. Across the whole survey season, evidence of dormouse was encountered in six of the 44 tubes/boxes; this represents 13.6% of nest tubes/boxes across the survey area. Individual dormice were encountered on four occasions, with a peak count of two for all individuals observed in July. No females with young were encountered in this area. A summary of the dormouse evidence encountered at survey area 7A is provided in Table 3-2.

Table 3-2 Dormouse evidence for survey area 7A

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
6	16/08/2021	Dormouse nest comprising woven grass surrounded by some green leaves	Dormouse nest only observed during August checks, with occupancy confirmed by one active, assumed adult, dormouse observed leaving the nest before biometrics could be recorded. Nest showing obvious signs of abandonment in subsequent checks
19	21/06/2021	Dormouse nest comprising woven grass surrounded hazel and oak leaves	Active but unoccupied dormouse nest observed during June, July, August and September checks
23	18/05/2021	Dormouse nest comprising woven grass surrounded by some green leaves	Dormouse nest observed during checks in May, June, July and September, with occupancy confirmed in May and July. May: Single, active, non-breeding adult male. Weight 13g. July: One active, assumed adult, dormouse observed leaving the nest before biometrics could be recorded
27	20/09/2021	Dormouse nest comprising woven grass surrounded by elm leaves	Active but unoccupied dormouse nest observed during September checks only
28	20/09/2021	Dormouse nest comprising woven grass surrounded by damp leaves	Active but unoccupied dormouse nest observed during September checks only
36	19/07/2021	Dormouse nest comprising of woven grass with brown leaves	Dormouse nest only observed during July checks. One active, assumed adult, dormouse observed within nest. Escaped before biometrics could be recorded

- 3.2.12 Dormouse evidence was centred around the woodland and associated hedgerows at Greenway Bridge near the northern end of this survey area.
- 3.2.13 The peak adult count during the surveys was two dormice (recorded in July) across the surveyed area, which represented approximately 0.3 hectares of suitable habitat within the woodland block and surveyed hedgerows. This equates to an estimated population density of 6.5 adults per hectare. While it is recognised that this is likely to be an underestimate, it exceeds the figure of 1.3 adult dormice per hectare given for hedgerow habitat in the Dormouse Conservation Handbook.

Survey area 10A

Habitat description

- 3.2.14 Survey area 10A is located towards the central section of the scheme to the north of the existing A358, north-west of Hatch Beauchamp. Habitats present included broadleaved woodland with hawthorn bordering the woodland edge, which connected to the disused Chard Branch Lines railway and the wider landscape via native species-rich hedgerows with blackthorn, hawthorn, elm, hazel and bramble. Figure 3-3 illustrates the type of habitat present at survey area 10A.
- 3.2.15 The survey area covered approximately 1.54 kilometres of suitable dormouse habitats. With an estimated average hedgerow width of 4.5 metres and assuming approximately 10 metre width of woodland surveyed, the area of suitable habitat surveyed was estimated to be 0.98 hectares.



Figure 3-3 Survey area 10A habitat example

Nest tube and box surveys

- 3.2.16 Dormice were confirmed to be present within survey area 10A, with the first evidence of dormouse being four individuals encountered on 17 May 2021. Across the whole survey season, evidence of dormouse was encountered in 10 of the 80 tubes/boxes; this represents 12.5% of nest tubes/boxes across the survey area. Individual dormice were encountered on six occasions, with a peak count of four individuals observed in May. No females with young were encountered in this area. A summary of the dormouse evidence encountered at survey area 10A is provided in Table 3-3.

Table 3-3 Dormouse evidence for survey area 10A

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
3	23/06/2021	Dormouse nest comprising green hazel leaves	Unoccupied but active dormouse nest observed in June, July and September checks
4	23/07/2021	Dormouse nest comprising tightly woven grass and some brown and green leaves	Unoccupied but active dormouse nest observed in July and August checks
9	23/07/2021	Dormouse nest comprising mostly green leaves	Unoccupied but active dormouse nest observed during July checks only

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
10	24/09/2021	Dormouse nest comprising mostly green leaves	Active dormouse nest observed in September checks only, with occupancy confirmed by single, active juvenile male. Weight 12.5g
12	20/08/2021	Dormouse nest comprising of woven grass	Active dormouse nest observed in August checks only, with occupancy confirmed by single, active, non-breeding adult female. Weight 16g. Activity was not recorded in subsequent checks
15	23/07/2021	Dormouse nest comprising mostly green leaves	Unoccupied but active dormouse nest observed during July checks only
18	17/05/2021	Dormouse nest comprising of tightly brown leaves with clear cavity	Active dormouse nest observed during May, June, July, August and September. Nest remained active throughout survey season with occupancy confirmed in May by a single active, non-breeding adult male. Weight 14.5g
20	23/07/2021	Dormouse nest comprising tightly woven grass surrounded by green and brown leaves	Unoccupied but active dormouse nest observed during July and August checks only
51	17/05/2021	No nest present	Single, active dormouse observed leaving nest tube before any biometrics could be collected. No activity recorded during subsequent checks
58	17/05/2021	Dormouse nest comprised of brown leaves with some woven grass	Active dormouse nest observed during checks in May and July, with occupancy confirmed in May by two adult dormice present in nest tube. Adult male weight 16g. Adult female weight 14g

3.2.17 Dormouse evidence was found within the woodland edge and the adjacent hedgerow, with the greatest concentration of evidence found within the hedgerow running directly adjacent to the existing A358.

3.2.18 The peak adult count during the surveys was four dormice (recorded in May) across the surveyed area, which represented approximately 0.98 hectares of suitable habitat within the woodland blocks and adjacent hedgerows. This equates to an estimated population density of 4.1 adults per hectare. While it is recognised that this is likely to be an underestimate, it is in line with the lower end of the Dormouse Conservation Handbook figures for estimated population density for the habitat types present at survey area 10A; 1.3 dormouse per hectare for hedgerow and 4-10 adult dormice per hectare for optimal woodland.

Survey area 11

Habitat description

3.2.19 Survey area 11 is located towards the central section of the scheme to the north of the existing A358, east of West Hatch. Habitats present included lowland mixed deciduous woodland with an oak and ash canopy and a diverse understory of hawthorn and hazel, with some bramble scrub throughout. The woodland connected into a wider network of species-rich hedgerows and was directly connected to the woodland and scrub belt that runs alongside the west of the A358 in this location. Figure 3-4 illustrates the type of habitat present at survey area 11.

3.2.20 The survey area covered approximately 0.71 kilometres of suitable dormouse habitats. With an estimated 10 metre width of woodland surveyed, the area of suitable habitat surveyed was estimated to be 0.72 hectares.



Figure 3-4 Survey area 11 habitat example

Nest tube and box surveys

3.2.21 No evidence of dormouse was observed within survey area 11 between July and October 2021. However, due to the delayed set-up of the survey area, surveys will continue into summer 2022 to confirm presence/likely absence of this species. Across the 50 nest tubes and boxes, only two wood mouse (*Apodemus sylvaticus*) nests were observed throughout the survey effort. However, this may be attributed to the high number of natural nesting opportunities present within this woodland.

Survey area 12

Habitat description

3.2.22 Survey area 12 is located towards the central section of the scheme to the west of the existing A358, west of Hatch Beauchamp. Habitats present included hedgerows and woodland belts running along the eastern verge of the A358 connecting extensive blocks of broadleaved woodland with a canopy dominated by oak, and a dense understory of hazel, hawthorn and bramble. Figure 3-5 illustrates the type of habitat present at survey area 12.

3.2.23 The survey area covered approximately 1.24 kilometres of suitable dormouse habitats. Assuming approximately 10 metre width of woodland surveyed, the area of suitable habitat surveyed was estimated to be 1.87 hectares.



Figure 3-5 Survey area 12 habitat example

Nest tube and box surveys

3.2.24 Dormouse were confirmed to be present within survey area 12, with the first evidence of dormouse being four adult dormice encountered on 18 August 2021. Across the whole survey season, evidence of dormouse was encountered in 19 of the 99 tubes/boxes; this represents 19% of nest tubes/boxes across the survey area. Individual dormice were encountered on 16 occasions, with a peak count of 11 for all individuals observed in October. One female with five young were encountered in this area. A summary of the dormouse evidence encountered at survey area 12 is provided in Table 3-4.

Table 3-4 Dormouse evidence for survey area 12

Nest tube / box ID	Evidence first found	Nest description	Occupancy and activity description
8	18/08/2021	Woven grass nest surrounded by green leaves observed	Dormouse nest remained active throughout August, September, and October. Nest was occupied during September checks, with a single, active dormouse escaped before any biometrics could be collected
10	22/09/2021	Dormouse nest made entirely of leaves which were loose on top but woven together at the base. There were several green leaves from multiple species despite being located in a hawthorn hedge	Dormouse nest was unoccupied during September checks, however a dead adult suspected female with 4 dead young greys were found in October. No obvious signs of wounding but decomposed and maggots so not in state to take for post-mortem
12	19/10/2021	Dormouse nest with some structure of woven grasses and brown leaves	Dormouse nest was only observed during October checks and showed no signs of recent activity, suggesting abandonment
15	19/10/2021	Dormouse nest found with limited nesting material inside nest box	Active dormouse nest found occupied during October checks. Three active dormice observed within nest box: Adult male, testes scrotal, weight 21g. Post-lactating, adult female weight 13.5g. Juvenile male, non-breeding, weight 11g
16	19/10/2021	Dormouse nest with clear woven grass structure	Dormouse nest only observed during October checks. Recent activity noted due to the fresh material inside the nest
24	19/10/2021	Dormouse nest comprising nicely woven with clear cavity and green leaves incorporated	Dormouse nest only observed during October checks. Recent activity noted due to the fresh material inside the nest
31	19/10/2021	Dormouse nest formed grass and bark strip woven nest surrounded by mostly brown leaves	Dormouse nest only observed during October checks. Recent activity noted due to the fresh material inside the nest
34	22/09/2021	Damp dormouse nest with woven structure and some green leaves	Dormouse nest contained one deceased GEC dormouse during the September checks. No obvious signs of wounding but decomposed and maggots so not in state to take for post-mortem. Nest was removed from tube due to poor condition. No other signs were recorded during subsequent checks
51	19/10/2021	Dormouse nest with some structure however nest beginning to deteriorate	Dormouse nest only observed during October checks, however already showing signs of deterioration and abandonment
54	18/08/2021	Well-formed dormouse nest of grass and green leaves observed within tube	Dormouse nest was occupied during August checks, with three active dormice observed

Nest tube / box ID	Evidence first found	Nest description	Occupancy and activity description
			leaving the nest before any biometrics could be collected. Nest remained in place and active during checks in September and October
57	18/08/2021	Dormouse nest observed mostly comprising dried woven grass	Dormouse nest initially observed as occupied in August, with a single, active dormouse observed leaving the nest before any biometrics could be collected. Nest continued to be active but unoccupied during September checks. A single, torpid, male dormouse weighing 11.5g, was observed in October
63	19/10/2021	Dormouse nest with a woven structure, green leaves and some moss	Dormouse nest only observed during October checks. Recent activity noted due to the fresh material inside the nest
74	19/10/2021	Dormouse nest of wet brown and green leaves with some woven grass	Dormouse nest only observed during October checks. Recent activity noted due to the fresh material inside the nest
75	22/09/2021	Dormouse nest predominantly made from leaves of multiple species but with grass structure underneath	Dormouse nest initially identified in September and remained very active. Nest was occupied during October checks with one active, lactating adult female, observed with five active juveniles also present. Individuals were not weighed on this occurrence due to number of young and to reduce disturbance
81	19/10/2021	Small, dormouse nest made from mostly dry leaves and woven grass	Dormouse nest only observed during October checks. Recent activity noted due to the fresh material inside the nest
82	19/10/2021	Dormouse nest comprising mostly brown and green hawthorn leaves. Very tight structure with a clear cavity	Dormouse nest only observed during October checks. Recent activity noted due to the fresh material inside the nest
85	19/10/2021	Dormouse nest, comprising brown and green leaves with a clear cavity	Dormouse nest only observed during October checks. Recent activity noted due to the fresh material inside the nest
96	19/10/2021	Fairly poorly constructed and wet dormouse nest	Dormouse nest only observed during October checks. Nest was active at this time, with a single, active, adult male observed. Testes scrotal, weight 17.5g
97	19/10/2021	Dormouse nest, with woven structure, a clear cavity and green leaves	Dormouse nest only observed during October checks. Recent activity noted due to the fresh material inside the nest

3.2.25 Dormouse evidence was found throughout this area, with the greatest concentration of evidence found within the hedgerow running directly adjacent to the existing A358.

3.2.26 The peak adult count during the surveys was five dormice (recorded in October) across the surveyed area, which represents approximately 1.87 hectares of suitable habitat within the woodland areas and adjacent hedgerows. This equates to an estimated population density of 2.7 adults per hectare. It is recognised that this is likely to be an underestimate and is below what would be expected when compared to the estimated dormouse population density figure of 4-10 adult

dormice per hectare reported for optimal woodland habitats in the Dormouse Conservation Handbook.

3.2.27 Due to the delayed set-up of this survey area, surveys will continue into summer 2022, therefore the results presented here are interim results.

Survey area 13A

Habitat description

3.2.28 Survey area 13A is located towards the central section of the scheme to the west of the existing A358, north of Bickenhall. Habitats present included native species-rich hedgerow dominated by hawthorn with blackthorn, oak, and bramble, and Bickenhall wood ancient woodland, comprising mixed woodland with oak, blackthorn and hazel. Figure 3-6 illustrates the type of habitat present at survey area 13A.

3.2.29 The survey area covered approximately 0.96 kilometres of suitable dormouse habitats, with an estimated average hedgerow width of two metres, and assuming approximately 10 metre width of woodland surveyed. The total area of suitable habitat surveyed was estimated to be 0.48 hectares.



Figure 3-6 Survey area 13A habitat example

Nest tube and box surveys

3.2.30 Dormice were confirmed to be present within survey area 13A, with the first evidence of dormouse being a single, adult dormouse encountered on 25 May 2021. Across the whole survey season, evidence of dormouse was encountered in six of the 62 tubes/boxes; this represents 9.7% of nest tubes/boxes across the survey area. Individual dormice were encountered on four occasions, with a peak count of three for all individuals observed during June. No females with young were encountered in this area. A summary of the dormouse evidence encountered at survey area 13A is provided in Table 3-5.

Table 3-5 Dormouse evidence for survey area 13A

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
20	19/07/2021	Dormouse nest comprising woven grass with some brown leaves	Unoccupied but active dormouse nest observed during July checks only

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
23	24/06/2021	Dormouse nest comprising woven grass and brown leaves	Unoccupied but active dormouse nest observed during June, July and August checks
25	24/06/2021	Dormouse nest comprising grass with some structure and green leaves	Active dormouse nest observed during June, July August and September checks, with occupancy confirmed in June with a single, active, non-breeding adult male. Weight 16g
30	25/05/2021	Dormouse nest comprising of green leaves with tightly woven structure	Active dormouse nest observed during May June, July, August and September, with occupancy confirmed in May and June. May: single, active, adult dormouse. Biometrics were not recorded due to adverse weather conditions. June: two active, assumed adults observed leaving the nest before biometrics could be recorded
33	24/06/2021	Dormouse nest comprising brown and green leaves	Unoccupied but active dormouse nest observed during June and July checks
40	19/07/2021	Tightly woven dormouse nest with green and brown leaves on top	Active dormouse nest observed during July, August and September checks, with occupancy confirmed in July by single, active, non-breeding female. Weight 20g

3.2.31 Dormouse evidence was found mainly to the east of survey area 13A, with the greatest concentration of evidence found within the hedgerow directly adjacent to the existing A358.

3.2.32 The peak adult count during the surveys was three dormice (recorded in June) across the surveyed area, which represented approximately 0.48 hectares of suitable habitat within the woodland and adjacent hedgerows. This equates to an estimated population density of 6.3 adults per hectare. While it is recognised that this is likely to be an underestimate, it is largely in line with the Dormouse Conservation Handbook figures for estimated population density for the habitat types present at survey area 13A; 1.3 adult dormice per hectare for hedgerow and 4-10 adult dormice per hectare for optimal woodland.

Survey area 13B

Habitat description

3.2.33 Survey area 13B is located towards the central section of the scheme to the west of the existing A358, south of West Hatch. Habitats present included lowland mixed deciduous woodland dominated by mature oak with a well-developed understorey of hawthorn, hazel and bramble, and native species-rich hedgerow, dominated by hawthorn. The survey area included the hedgerow and woodland belt that runs alongside the western edge of the A358 in this location. Figure 3-7 illustrates the type of habitat present at survey area 13B.

3.2.34 The survey area covered approximately 0.88 kilometres of suitable dormouse habitats. Assuming approximately 10 metre width of woodland surveyed, the area of suitable habitat surveyed was estimated to be 0.81 hectares.



Figure 3-7 Survey area 13B habitat example

Nest tube and box surveys

3.2.35 Dormice were confirmed to be present within survey area 13B, with the first evidence of dormouse being three adult dormice encountered on 20 July 2021. Across the whole survey season, evidence of dormouse was encountered in seven of the 50 tubes/boxes; this represents 14% of nest tubes/boxes across the survey area. Individual dormice were encountered on 16 occasions, with a peak count of six for all individuals observed during August and September. One female with young were encountered in this area. A summary of the dormouse evidence encountered at survey area 13B is provided in Table 3-6.

Table 3-6 Dormouse evidence for survey area 13B

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
14	18/08/2021	Dormouse nest comprising green leaves with some loose structure	Active but unoccupied dormouse nest observed during August and September checks
16	16/09/2021	Dormouse nest comprising damp woven grass	Unoccupied dormouse nests observed during September and October checks, showing signs of abandonment
19	20/07/2021	Nest relatively poorly constructed, with damp leaves and some woven grass	Active dormouse nest observed during July, August, September, and October checks, with occupancy confirmed in July, August and September. July: Two, active adult dormice observed. Male, testes scrotal, weight 17g. Second, assumed adult, dormouse escaped before biometrics could be recorded. August: Active, adult lactating female. Weight 18g. Five GEC dormice September: Active, adult lactating female. Weight 18g. Five juveniles also observed. Single juvenile male, weight 9g, and two juvenile females, weight 8g each were recorded. Two additional assumed juveniles were observed leaving the nest tube before biometrics could be recorded
20	20/10/2021	Dormouse nest comprising tightly	Dormouse nest observed in October with confirmed occupancy of single active, adult

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
		woven grass surrounded by brown leaves	dormouse observed leaving the nest before any biometrics could be recorded
23	20/07/2021	Dormouse nest comprising of damp brown and green leaves	Active dormouse nest observed during July and August with occupancy confirmed in July by single, active, assumed adult dormouse observed leaving the nest before biometrics could be recorded. Nest appeared to show signs of abandonment by August checks
25	20/10/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Unoccupied but active dormouse nest observed during October checks only
27	18/08/2021	Dormouse nest comprising woven grass with clear cavity	Unoccupied but active dormouse nest observed during August, September and October checks

- 3.2.36 Dormouse evidence was found throughout the eastern side of the area, with the greatest concentration of evidence found within the hedgerow directly adjacent to the existing A358. No dormice were encountered in Abbey Wood.
- 3.2.37 The peak adult count during the surveys was three adult dormice (recorded in July) across the surveyed area, which represented approximately 0.81 hectares of suitable habitats within the woodland block and surveyed hedgerows. This equates to an estimated population density of 3.7 adults per hectare. While it is recognised that this is likely to be an underestimate, it is in line with the lower end of the Dormouse Conservation Handbook figure for estimated dormouse population density of 4-10 adult dormice per hectare reported for optimal woodland habitats.
- 3.2.38 Due to the delayed set-up of the survey area surveys will continue into summer 2022, therefore the results presented here are interim results.

Survey area 16A

Habitat description

- 3.2.39 Survey area 16A is located within the central section of the scheme to the south of the existing A358, west of Capland. Habitats present included a network of native species-rich hedgerows with trees, dominated by hawthorn and blackthorn with a bramble understory. Figure 3-8 illustrates the type of habitat present at survey area 16A.
- 3.2.40 The survey area covered approximately 2.71 kilometres of suitable dormouse habitats. With an estimated average hedgerow width of 3.5 metres, the area of suitable habitat surveyed was estimated to be 0.95 hectares.



Figure 3-8 Survey area 16A habitat example

Nest tube and box surveys

3.2.41 Dormice were confirmed to be present within survey area 16A, with the first evidence of dormouse being four dormice encountered on 18 May 2021. Across the whole survey season, evidence of dormouse was encountered in 30 of the 90 tubes/boxes; this represents 33.3% of the nest tubes/boxes deployed across the survey area. Individual dormice were encountered on 34 occasions, with a peak count of 13 for all individuals encountered during June. Two females with young were encountered in this area. A summary of the dormouse evidence encountered at survey area 16A is provided in Table 3-7.

Table 3-7 Dormouse evidence for survey area 16A

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
4	20/07/2021	Dormouse nest comprising woven grass with some green leaves within the cavity	Dormouse nest remained in place throughout July, August, and September, however it was not occupied during any checks
5	21/09/2021	Small dormouse nest comprised of limited material with a cavity within	Dormouse nest was occupied during September checks, with a single, non-breeding, juvenile female observed. Weight 16g. Nest showing obvious signs of abandonment during subsequent checks.
7	22/06/2021	Old dormouse nest, comprising woven grass surrounded by some green leaves	Dormouse nest observed during June and July checks only. On both occasions, nest was unoccupied
9	18/05/2021	Dormouse nest, comprising a mixture of green and brown leaves	Dormouse nest observed during checks in May, June, July and August, with occupancy confirmed in May and June. May: Single adult observed leaving the nest before any biometrics could be recorded June: Two active, non-breeding adult dormice. Female weight 13g. Male weight 17g Nest was unoccupied in July and August and showed obvious signs of abandonment
13	20/07/2021	Dormouse nest with tightly woven grass, surrounded by brown and green leaves.	Dormouse nest observed during checks in July, August and September checks. Occupied nest observed during July, with a single, active, lactating adult female. Weight 25g. GEC present but left undisturbed

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
			Nest remained unoccupied but active during subsequent months
14	20/07/2021	Tightly woven grass structure with clear cavity	Dormouse nest observed during checks in July, August and September checks. Nest remained active but unoccupied during all checks
16	21/09/2021	Dormouse nest, comprising a mixture of green and brown leaves	Active but unoccupied dormouse nest observed during September checks only
19	22/06/2021	Dormouse nest, comprising a mixture of green and brown leaves and some woven grass	Dormouse nest observed during checks in June, July, August and September checks. Nest remained active but unoccupied during all checks
21	22/06/2021	Dormouse nest comprising woven brown leaves, with clear cavity and grass within	Dormouse nest observed during checks in June, July, August and September checks. Nest remained active but unoccupied during all checks
23	17/08/2021	Dormouse nest comprising woven grass with some brown leaves	Dormouse nest occupied during August with a single, active, non-breeding adult male. Weight 16g. Active but unoccupied nest also observed during September checks
25	22/06/2021	Dormouse nest comprising woven grass with some brown leaves	Dormouse nest observed during checks in June, July, August and September checks. Nest remained active but unoccupied during all checks
26	21/09/2021	Dormouse nest, comprising woven grass surrounded by green and brown leaves	Active but unoccupied dormouse nest observed during September checks only
28	22/06/2021	Dormouse nest comprising woven grass with some brown leaves	Dormouse nest occupied during June checks with a single, torpid adult male. Weight 14g. Active but unoccupied nest also observed during subsequent checks in July, August and September
29	21/09/2021	Dormouse nest comprised mostly of green leaves, with some woven grass	Active but unoccupied dormouse nest observed during September checks only
32	22/06/2021	Dormouse nest comprised entirely of woven grass with clear cavity	Dormouse nest observed during checks in June, July, August and September checks. Nest remained active but unoccupied during all checks
38	18/05/2021	Dormouse nest comprising woven grass surrounded by green and brown leaves	Dormouse nest occupied during checks in May with a single, active, non-breeding adult male. Weight 16g. Nest remained active but unoccupied in June and July but was subsequently abandoned
41	22/06/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Dormouse nest observed during checks in June, July, August and September, with occupancy confirmed in June and September. June: Single active, assumed adult dormouse observed leaving the nest before biometrics could be recorded. September: Single, active, adult male. Weight 17g
43	22/06/2021	Dormouse nest comprising well woven grass, with a clear cavity	Dormouse nest observed during checks in June, July, August and September, with occupancy confirmed in June and August.

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
			June: Single, active, non-breeding adult female. Weight 22g. August: One active, assumed adult, dormouse observed leaving nest tube before biometrics could be collected
48	22/06/2021	Dormouse nest comprising well woven grass, with a clear cavity	Dormouse nest observed during checks in July, August and September checks. Nest remained active but unoccupied during all checks
49	22/06/2021	Dormouse nest comprised mostly of brown leaves	Dormouse nest observed during checks in June, July, August and September, with occupancy confirmed in July, with a single, juvenile female. Weight 7g
50	09/09/2021	Dormouse nest with loose woven structure and green leaves	Active but unoccupied dormouse nest observed during September checks only
51	17/08/2021	Dormouse nest, comprising woven grass with some green leaves	Unoccupied but active dormouse nest observed during August and September checks
53	18/05/2021	Dormouse nest with tight woven grass structure	Dormouse nest observed during checks in May, June, and July, with occupancy confirmed in June with two active, assumed adult, dormice observed leaving the nest before biometrics could be collected Nest was abandoned and taken over by wood mice in August
55	21/09/2021	Dormouse nest comprised mostly of brown leaves	Occupied dormouse nest observed during September checks only, with occupancy confirmed by a single assumed adult dormouse observed leaving the nest before biometrics could be recorded
57	17/08/2021	Dormouse nest with very tightly woven structure and clear cavity	Occupied dormouse nest observed during checks in August and September, with occupancy confirmed in August with two, active, non-breeding adults. Male weight 17g. Female weight 18g. Nest was unoccupied during September checks but remained clearly active
66	22/06/2021	Dormouse nest comprised mostly of brown leaves	Occupied dormouse nest observed during June, July and August checks. June: Single, active, non-breeding male. Weight 14g. July: Single, active, assumed adult dormouse observed leaving the nest tube before biometrics could be recorded. August: Single, active, assumed adult dormouse observed leaving the nest tube before biometrics could be recorded. Nest was not recorded during September checks
67	18/05/2021	Dormouse nest comprised mostly of brown leaves	Dormouse nest observed during checks in May, June, and July, with occupancy confirmed in May and July. May: Two active, assumed adult dormice observed leaving the nest before biometrics could be recorded

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
			July: Single, active, assumed juvenile observed leaving the nest before biometrics could be recorded. Nest was not recorded during subsequent checks
68	22/06/2021	Dormouse nest with tight woven grass structure, surrounded by green leaves	Unoccupied but active dormouse nest observed during June, July and August checks
69	20/07/2021	Dormouse nest comprising woven grass	Unoccupied but active dormouse nest observed during July, August and September checks
70	22/06/2021	Dormouse nest comprised of damp, woven grass surrounded by some green leaves	Occupied dormouse nest observed during June and July checks. June: Five pink dormice observed. Mother was not present during time of inspection. July: Single, active, assumed adult dormouse observed leaving the nest before biometrics could be recorded. Nest was observed to have been destroyed in subsequent surveys

3.2.42 Dormouse evidence was observed throughout survey area 16A, with the greatest concentration of evidence found within the western boundary where the hedgerows have been allowed to develop into a dense and tall belt of trees and shrubs.

3.2.43 The peak adult count during the surveys was eight dormice (recorded in June) across the surveyed area, which represented approximately 0.95 hectares of suitable habitats. This equates to an estimated population density of 8.4 adults per hectare. While it is recognised that this is likely to be an underestimate, this far exceeds the estimate dormouse population figure of 1.3 adult dormice per hectare reported for hedgerow habitat in the Dormouse Conservation Handbook.

Survey area 17

Habitat description

3.2.44 Survey area 17 is located within the central section of the scheme to the north of the existing A358, south of Capland. Habitats present included native species-rich hedgerow, dominated by oak with hawthorn and blackthorn, and a mixed deciduous woodland belt between arable fields with an understorey of hawthorn and bramble. The survey area also included a portion of the riparian corridor of trees and scrub along Fivehead River main channel 2. Figure 3-9 illustrates the type of habitat present at survey area 17.

3.2.45 The survey area covered approximately 2.61 kilometres of suitable dormouse habitats, with an estimated average hedgerow width of 3 metres and assuming approximately 10 metre width of woodland surveyed. The total area of suitable habitat surveyed was estimated to be 0.87 hectares.



Figure 3-9 Survey area 17 habitat example

Nest tube and box surveys

3.2.46 Dormice were confirmed to be present within survey area 17, with the first evidence of dormouse being seven adult dormice, encountered across multiple different nests on 18 May 2021. Across the whole survey season, evidence of dormouse was encountered in 28 of the 118 tubes/boxes; this represents 24% of nest tubes/boxes across the survey area. Individual dormice were encountered on 18 occasions, with a peak count of eight for all individuals observed during June. Occupied nests with young were encountered in this area, including an adult female with 2 GEO and a nest with pinks found in June. A summary of the dormouse evidence encountered at survey area 17 is provided in Table 3-8.

Table 3-8 Dormouse evidence for survey area 17

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
1	20/07/2021	Dormouse nest comprising woven grass	Active but unoccupied dormouse nest observed during July checks only
5	20/07/2021	Dormouse nest comprising a mixed of brown and green leaves, with some moss	Active but unoccupied dormouse nest observed during July, August and September checks
9	21/09/2021	Dormouse nest with clear woven structure of grass and leaves	Active but unoccupied dormouse nest observed during September checks only
13 (tube)	18/05/2021	Dormouse nest with clear woven structure of grass and brown leaves	Active but unoccupied dormouse nest observed during May, June and July
13 (box)	21/06/2021	Dormouse nest with tightly woven grass structure, surrounded by moss and green leaves	Active but unoccupied dormouse nest observed during July and August checks
15 (tube)	20/07/2021	Dormouse nest comprising of woven mosses and green leaves with a clear cavity	Active but unoccupied dormouse nest observed during July and August checks
15 (box)	21/06/2021	Dormouse nest comprised of tightly woven grass structure surrounded by green leaves with clear cavity	Active dormouse nest with occupancy confirmed during June checks with an adult, lactating female dormouse with 2 GEO. Adult dormouse weight 22g. Nest remained active but unoccupied during July, August and September checks

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
17	21/06/2021	Dormouse nest comprised of some woven grass and leaves	Unoccupied dormouse nest observed during June checks only
22	21/09/2021	Dormouse nest with some woven structure, and a mix of green and brown leaves. Some plastic material also observed within the nest	Unoccupied dormouse nest observed during September checks only
25	20/07/2021	Dormouse nest comprised mostly of green leaves, with a clear bowl structure	Unoccupied dormouse nest observed during July checks only
30	17/08/2021	Dormouse nest comprised of some woven grass and leaves	Dormouse nest observed during August checks only, with confirmed occupancy of two juvenile, non-breeding dormice. Female weight 9g. Male weight 14g
45	21/06/2021	Dormouse nest comprised mostly of woven grass with a clear cavity	Unoccupied but active dormouse nest observed during June, August and September
53	18/05/2021	Dormouse nest comprised of some woven grass and brown leaves	Active dormouse nest observed during May and June checks, with occupancy confirmed in May by a single, active, non-breeding adult male. Weight 16g
55	21/06/2021	Dormouse nest comprising some woven grass and mostly damp leaves	Unoccupied but active dormouse nest observed during June checks only
56	18/05/2021	Dormouse nest comprised of some woven grass with a bowl structure	Active dormouse nest observed during May, June and July checks, with occupancy confirmed in May by a single, active, non-breeding adult female. Weight 18g
57	18/05/2021	Dormouse nest comprised of woven brown leaves	Active dormouse nest observed during May, June and August checks, with occupancy confirmed in May and June May: Single, active, non-breeding adult male. Weight 16g. June: Single, active, adult male. Weight 15g
58	18/05/2021	Dormouse nest comprised of tightly woven grass with clear cavity	Active but unoccupied dormouse nest observed during May, June and July checks
60	18/05/2021	Dormouse nest comprised of some woven grass and brown leaves	Active dormouse nest observed during May, June, July and August checks, with occupancy confirmed in May by two active, non-breeding adults found within nest. Active adult male, missing half a tail. Weight 19.5g Active adult female, weight 18g
61	20/07/2021	Dormouse nest with some woven grass. Plastic material has also been woven into the nest	Active but unoccupied dormouse nest found during July and August checks
62	21/06/2021	Dormouse nest comprised of woven brown leaves	Active dormouse nest observed during June and August checks, with occupancy confirmed during June checks by a single, active, non-breeding adult male missing half a tail. Weight 21.5g
69	18/05/2021	Dormouse nest comprised of tightly woven grass	Active but unoccupied dormouse nest observed during May, June, July and August checks

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
		surrounded by brown leaves with clear cavity	
72	18/05/2021	Dormouse nest comprised of tightly woven grass surrounded by brown leaves with clear cavity	Active dormouse nest observed during May, July and August checks, with occupancy confirmed during May by a single, active non-breeding adult female. Weight 19g
74	18/05/2021	Dormouse nest comprised of tightly woven grass surrounded by brown leaves with clear cavity	Active dormouse nest observed during May, June, July, August and September, with occupancy confirmed in May and June May: Single, active adult female (breeding condition unknown). Weight 18g. June: Three pink dormice. Mother was not present during checks
75	21/06/2021	Dormouse nest of woven grass surrounded by mixed leaves	Active but unoccupied dormouse nest observed during June and July checks
81	21/06/2021	Dormouse nest of tightly woven grass with a clear cavity. Structure is surrounded by green leaves	Active but unoccupied dormouse nest observed during June and July checks
93	20/07/2021	Dormouse nest comprising moss and green leaves	Active but unoccupied dormouse nest observed during July checks only
94	21/06/2021	Dormouse nest of woven grass with a clear cavity. Nest is surrounded by green leaves and moss	Active but unoccupied dormouse nest observed during June, July and August checks
95	20/07/2021	Dormouse nest comprised of tightly woven grass surrounded by brown leaves with clear cavity	Active dormouse nest observed during July, August and September checks, with occupancy confirmed during July checks by single, assumed adult, dormouse observed leaving the nest before biometrics could be recorded

3.2.47 Dormouse evidence was recorded throughout area 17, with the greatest concentration of evidence found within the hedgerow directly adjacent to the existing A358.

3.2.48 The peak adult count during the surveys was seven dormice (recorded in May) across the surveyed area, which represented approximately 0.87 hectares of suitable habitat within the woodland and adjacent hedgerows. This equates to an estimated population density of 8.0 adults per hectare. While it is recognised that this is likely to be an underestimate, it is at the higher end of the Dormouse Conservation Handbook figures for estimated population density for the habitat types present at survey area 17; 1.3 adult dormice per hectare for hedgerow and 4-10 adult dormice per hectare for optimal woodland.

Survey area 18

Habitat description

3.2.49 Survey area 18 is located towards the southern end of the scheme to the north of the existing A358, west of Rapps. Habitats present included narrow blocks of broadleaved woodland dominated by hazel and bramble along the woodland margin, and native species-rich hedgerow dominated by blackthorn and

hawthorn, with oak and bramble also present. Figure 3-10 illustrates the type of habitat present at survey area 18.

- 3.2.50 The survey area covered approximately 2.16 kilometres of suitable dormouse habitats, with an estimated average hedgerow width of 3 metres, and assuming approximately 10 metre width of woodland surveyed. The area of suitable habitat surveyed was estimated to be 1.86 hectares.



Figure 3-10 Survey area 18 habitat example

Nest tube and box surveys

- 3.2.51 Dormice were confirmed to be present within survey area 18, with the first evidence of dormouse being an occupied dormouse nest encountered on 20 May 2021. Across the whole survey season, evidence of dormouse was encountered in 25 of the 86 tubes/boxes; this represents 29% of the nest tubes/boxes across the survey area. Individual dormice were encountered on eight occasions, with a peak count of three for all individuals encountered during May, however two individuals escaped before any biometrics were recorded. One nest in June did contain pinks, however all three were deceased. A summary of the dormouse evidence encountered at survey area 18 is provided in Table 3-9.

Table 3-9 Dormouse evidence for survey area 18

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
2	25/06/2021	Dormouse nest, with nest box full of woven grass, and a mix of brown and green leaves	Active but unoccupied dormouse nest observed during June checks only
4 (nest tube)	25/06/2021	Dormouse nest comprising woven grass with a clear cavity, surrounded by green and brown leaves	Active but unoccupied dormouse nest observed during June, July and August checks
4 (nest box)	21/07/2021	Dormouse nest, with nest box full of woven grass, and a mix of brown and green leaves	Active but unoccupied dormouse nest observed during July, August and September checks
6	21/07/2021	Dormouse nest, with nest box completely full of green leaves of varying species	Active but unoccupied dormouse nest observed during June, July and August
8	25/06/2021	Dormouse nest, comprising tightly woven grass	Active but unoccupied dormouse nest observed during June checks only

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
10	21/07/2021	Dormouse nest, with nest box completely full of green leaves of varying species	Active dormouse nest observed during July, August and September checks, with occupancy confirmed in August and September checks. August: Single, active, testes scrotal adult male. Weight 17g. September: Single, active, testes scrotal adult male. Weight 20g
12	21/07/2021	Dormouse nest with nest box completely full of leaves of varying species	Active but unoccupied dormouse nest observed during July and August checks
13	20/05/2021	Dormouse nest comprising woven grass surrounded by brown and green leaves with a clear bowl structure	Active but unoccupied dormouse nest observed during May, June and July checks
14	20/05/2021	Dormouse nest comprising of some woven grass with brown leaves	Active but unoccupied dormouse nest observed during May, June and July checks
15	25/06/2021	Dormouse nest comprising of some woven grass with brown leaves	Active but unoccupied dormouse nest observed during June checks only
16	25/06/2021	Dormouse nest comprised woven grass surrounded by brown leaves with bowl structure	Three deceased pink dormice found abandoned in nest. Activity recorded during June checks only
17	25/06/2021	Main structure of the nest has been composed of litter material (plastic and paper). Clear cavity and woven grass surrounding	Active but unoccupied dormouse nest recorded during June and July checks
22	25/06/2021	Dormouse nest mainly comprising a mix of brown and green leaves	Active but unoccupied dormouse nest recorded during June and July checks
23	25/06/2021	Dormouse nest mainly comprising a mix of brown and green leaves, with some woven grass inside main structure	Active but unoccupied dormouse nest observed during June, July and September checks
24	20/05/2021	Dormouse nest, comprising tightly woven grass surrounded by brown leaves with a clear cavity	Active dormouse nest observed during May, June, July and August, with occupancy confirmed in May by a single dormouse observed leaving the nest before any biometrics could be recorded
30	25/06/2021	Dormouse nest comprising tightly woven grass with a clear cavity	Active but unoccupied dormouse nest observed during June, July and August checks
34	25/06/2021	Dormouse nest comprised mostly of brown leaves with a clear structure	Active but unoccupied dormouse nest observed during June and July checks
38	25/06/2021	Dormouse nest comprised mostly of brown leaves with a clear structure	Active but unoccupied dormouse nest observed during June and July checks
41	20/05/2021	Dormouse nest comprised mostly of brown leaves with a clear structure	Active dormouse nest observed during May, June and July checks, with occupancy confirmed in May by single, active, non-breeding male. Weight 17.5g

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
43	22/09/2021	Dormouse nest comprising of some woven grass with brown leaves	Active dormouse nest observed during September checks only, with confirmed occupancy of a single, active, juvenile female. Weight 15g
57	20/05/2021	Dormouse nest comprised mostly of brown leaves with a clear structure	Active dormouse nest observed during May, June, July, August and September checks, with occupancy confirmed during May checks by a single dormouse observed leaving the nest before any biometrics could be recorded
58	25/06/2021	Dormouse nest comprising tightly woven grass with clear cavity	Active but unoccupied dormouse nest observed during June, July and August checks
59	21/07/2021	Dormouse nest comprising tightly woven grass surrounded by green leaves with clear cavity	Active but unoccupied dormouse nest observed during July and August checks
60	25/06/2021	Dormouse nest comprised mostly of brown leaves with some grass and a clear structure	Active but unoccupied dormouse nest observed during June and July checks
67	18/08/2021	Dormouse nest comprising tightly woven grass with clear cavity	Active but unoccupied dormouse nest observed during July and August checks

3.2.52 Dormouse evidence was recorded throughout area 18, with the greatest concentration of evidence found within the hedgerow directly adjacent to the existing A358.

3.2.53 The peak adult count during the surveys was three dormice (recorded in May) across the surveyed area, which represented approximately 1.86 hectares of suitable habitat within the woodland and adjacent hedgerows. This equates to an estimated population density of 1.6 adults per hectare. While it is recognised that this is likely to be an underestimate, it is in line with the lower end of the Dormouse Conservation Handbook figures for estimated population density for the habitat types present at survey area 18; 1.3 dormouse per hectare for hedgerow and 4-10 adult dormice per hectare for optimal woodland.

Survey area 19

Habitat description

3.2.54 Survey area 19 is located towards the southern end of the scheme to the south of the existing A358, east of Ashill. Habitats present included native species-rich hedgerow dominated by thick hawthorn and abundant honeysuckle, and broadleaved woodland along the highways verge, with canopy of oak and a dense understory of bramble, hawthorn and hazel. Figure 3-11 illustrates the type of habitat present at survey area 19.

3.2.55 The survey area covered approximately 2.21 kilometres of suitable dormouse habitats, with an estimated average hedgerow width of 3 metres, and assuming approximately 10 metre width of woodland surveyed. The total area of suitable habitat surveyed was estimated to be 0.9 hectares.



Figure 3-11 Survey area 19 habitat example

Nest tube and box surveys

3.2.56 Dormice were confirmed to be present within survey area 19, with the first evidence of dormouse being seven dormice encountered on 20th May 2021. Across the whole survey season, evidence of dormouse was encountered in 26 of the 106 tubes/boxes; this represents 24.5% of nest tubes/boxes across the survey area. Individual dormice were encountered on 10 occasions, with a peak count of seven for all individuals observed during May. One heavily pregnant female was also encountered in this area. A summary of the dormouse evidence encountered at survey area 19 is provided in Table 3-10.

Table 3-10 Dormouse evidence for survey area 19

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
6	22/09/2021	Dormouse nest comprising of some woven grass with brown leaves	Active and occupied dormouse nest observed during September checks only. Occupancy confirmed by single, active, post-lactating adult female. Weight 19g
10	22/09/2021	Dormouse nest comprising woven leaves with a clear structure	Active but unoccupied dormouse nest observed during September checks only
11	22/09/2021	Dormouse nest comprising of some woven grass with brown leaves	Active but unoccupied dormouse nest observed during September checks only
14	22/09/2021	Dormouse nest comprising woven leaves with a clear cavity	Active but unoccupied dormouse nest observed during September checks only
15	23/06/2021	Dormouse nest comprising woven grass with some green leaves surrounding	Active but unoccupied dormouse nest observed during June, July, August and September checks
16	22/09/2021	Dormouse nest, comprising woven grass and green leaves	Active but unoccupied dormouse nest observed during September checks only
17	22/09/2021	Dormouse nest, comprising woven grass and green leaves	Active but unoccupied dormouse nest observed during September checks only
19	24/06/2021	Dormouse nest comprising woven green leaves	Active but unoccupied dormouse nest observed during June, July, August and September checks

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
22	21/07/2021	Dormouse nest comprising woven brown leaves	Active dormouse nest observed during July, August and September checks, with occupancy confirmed in July and August. July: Single, active, juvenile male with short tail and a patch of fur missing. Weight 16g. August: Single, active, pregnant adult female. Weight 16g
23	22/09/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during September checks only
24	21/07/2021	Dormouse nest comprised mostly of brown leaves, with some structure	Active but unoccupied dormouse nest observed during July, August and September
26	20/05/2021	No nest present within tube	Single adult dormouse observed leaving the nest tube before any biometrics could be recorded. No other activity recorded throughout survey season
27	18/08/2021	Dormouse nest comprising woven grass with some green leaves surrounding	Active but unoccupied dormouse nest observed during August and September
29	20/05/2021	Dormouse nest comprising woven grass with some brown leaves surrounding and a clear cavity	Active dormouse nest observed during May, June, July and August, with occupancy confirmed in May by single adult dormouse observed leaving the nest before any biometrics could be recorded
30	24/06/2021	Dormouse nest comprising woven leaves with a clear cavity	Active but unoccupied dormouse nest observed during June, July, August and September checks
33	21/07/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during July, August and September checks
42	18/08/2021	Dormouse nest, comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during August checks only
45	22/09/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during September checks only
47	24/06/2021	Dormouse nest, with a clear inner structure of woven brown leaves, surrounded by woven green grass	Active but unoccupied dormouse nest observed during June, July, August and September checks
48	20/05/2021	Dormouse nest comprising woven grass and brown leaves with a clear bowl structure	Active dormouse nest observed during May, June, July, August and September checks, with occupancy confirmed in May by a single, torpid, adult female dormouse. Weight 15g
51	20/05/2021	Dormouse nest comprising woven grass and green leaves	Active dormouse nest observed during May, June, July, August and September checks, with occupancy confirmed in May by two, active adult dormice. Male weight 19g. Female weight 20g. Breeding condition unknown
55	20/05/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during May, June, July, August and September checks
64	20/05/2021	Dormouse nest comprising woven grass and green leaves	Active but unoccupied dormouse nest observed during May and June. Nest remained in place

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
			during July and August but showing signs of abandonment
66	22/09/2021	Dormouse nest with tightly woven grass structure, surrounded by some brown leaves	Active but unoccupied dormouse nest observed during September checks only
82	20/05/2021	Dormouse nest comprising woven grass with green and brown leaves and a clear cavity	Active dormouse nest observed during May, August and September checks, with occupancy confirmed in May by two adult, male dormice. Both dormice were torpid and left undisturbed due to wet weather conditions (no biometrics recorded)
83	20/05/2021	Dormouse nest comprising of woven grass with brown leaves	Active but unoccupied dormouse nest observed during May, June, July, August and September checks

- 3.2.57 Dormouse evidence was observed throughout the majority of the area (with the exception of the southern-most hedgerow), with the greatest concentration of evidence found within the broadleaved woodland running adjacent to the existing A358.
- 3.2.58 The peak adult count during the surveys was seven dormice (recorded in May) across the surveyed area, which represented approximately 0.9 hectares of suitable habitat within the woodland and surveyed hedgerows. This equates to an estimated population density of 7.8 adults per hectare. While it is recognised this is likely to be an underestimate, it is at the higher end of the Dormouse Conservation Handbook figures for estimated population density for the habitat types present at survey area 19; 1.3 adult dormice per hectare for hedgerow and 4-10 adult dormice per hectare for optimal woodland.

Survey area 21

Habitat description

- 3.2.59 Survey area 21 is located towards the southern end of the scheme to the north-east of the existing A358, north of Rapps. Habitats present included two ancient woodlands, Every's Copse and Ashill Wood, comprising lowland mixed deciduous woodland, dominated by oak with a dense understorey of hawthorn, hazel and honeysuckle. Survey area 21 also included the network of native species-rich hedgerows, with oak, blackthorn and hawthorn, that connected into the woodlands. Figure 3-12 illustrates the type of habitat present at survey area 21.
- 3.2.60 The survey area covered approximately 1.71 kilometres of suitable dormouse habitats. With an estimated average hedgerow width of 4 metre and assuming 10 metre width of woodland has been surveyed from the tubes/boxes deployed at its perimeter the total area of suitable habitat surveyed was estimated to be 1.32 hectares.



Figure 3-12 Survey area 21 habitat example

Nest tube and box surveys

3.2.61 Dormice were confirmed to be present within survey area 21, with the first evidence of dormouse being three dormice encountered on 25 May 2021. Across the whole survey season, evidence of dormouse was encountered in 12 of the 89 tubes/boxes; this represents 13.5% of the nest tubes/boxes across the survey area. Individual dormice were encountered on six occasions, with a peak count of three for all individuals observed during May. One post-lactating female was encountered in this area. A summary of the dormouse evidence encountered at survey area 21 is provided in Table 3-11.

Table 3-11 Dormouse evidence for survey area 21

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
1	22/09/2021	Dormouse nest comprising woven grass and some brown leaves	Active dormouse nest observed during September checks only with confirmed occupancy of a single, active, post-lactating adult female. Weight 17.5g
31	25/05/2021	Dormouse nest comprising woven grass, surrounded by some green leaves	Active but unoccupied dormouse nest observed during June, July and August checks. Nest showing signs of abandonment by September checks
32	25/05/2021	Dormouse nest comprising woven grass, surrounded by some green leaves	Active dormouse nest observed during May, June and July checks, with occupancy confirmed in May by two, active adult dormice. Male weight 15g. Female weight 16g. Breeding condition unknown.
35	19/07/2021	Dormouse nest comprised mostly of green leaves, with some woven grass	Active but unoccupied dormouse nest observed during July, August and September
36	23/06/2021	Dormouse nest with good structure with woven grass and some green leaves	Active but unoccupied dormouse nest observed during June and July. Nest showing signs of abandonment by August checks
41	23/06/2021	Dormouse nest comprised mostly of green leaves with some limited structure	Active but unoccupied dormouse nest observed during June and July checks

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
43	25/05/2021	Dormouse nest comprising woven grass and brown leaves	Active dormouse nest observed during May, June and July checks, with occupancy confirmed in May by a single adult female dormouse. Female was torpid with clear injuries, including an injured eye and a bleeding tail. Weight 16g
45	19/07/2021	Dormouse nest comprised mostly of green leaves with some limited structure and woven grass	Active but unoccupied dormouse nest observed during July and August checks. Nest starting to show signs of abandonment by September checks
48	19/07/2021	No nest present	Occupied tube in July only, with a single, active, testes scrotal, adult male. Weight 16g
51	23/06/2021	Dormouse nest comprising very compact, woven brown leaves	Active but unoccupied dormouse nest observed during June, July, and August checks. Nest starting to show signs of abandonment by September checks
55	22/09/2021	Well-formed dormouse nest, with woven grass surrounded by leaves	Active dormouse nest observed during September checks only, with occupancy confirmed by a single, active, testes scrotal adult male. Weight of 18g
57	19/07/2021	Dormouse nest comprising woven grass with a clear cavity	Active but unoccupied dormouse nest observed during July and August checks

3.2.62 Dormouse evidence was mostly found within the southern half of the survey area, with the greatest concentration of evidence found within the hedgerow network to the south of Ashill Wood.

3.2.63 The peak adult count during the surveys was three dormice (recorded in May) across the surveyed area, which represented approximately 1.32 hectares of suitable habitat within the woodland and surveyed hedgerows. This equates to an estimated population density of 2.3 adults per hectare. While it is recognised that this is likely to be an underestimate, it is in line with the lower end of the Dormouse Conservation Handbook figures for estimated population density for the habitat types present at survey area 21; 1.3 adult dormice per hectare for hedgerow and 4-10 adult dormice per hectare for optimal woodland.

Survey area 23

Habitat description

3.2.64 Survey area 23 is located towards the southern end of the scheme to the south of the existing A358, north of Horton Cross. Habitats present included lowland deciduous woodland with a canopy of oak and ash, and an understorey of hazel, blackthorn and hawthorn, as well as native hedgerow dominated by hawthorn and ash. Figure 3-13 illustrates the type of habitat present at survey area 23.

3.2.65 The survey area covered approximately 1.13 kilometres of suitable dormouse habitats. The surveyed hedgerow sat immediately in front of several small woodland parcels, assuming approximately 10 metre width of woodland surveyed, the area of suitable habitat surveyed was estimated to be 1.13 hectares.



Figure 3-13 Survey area 23 habitat example

Nest tube and box surveys

3.2.66 Dormice were confirmed to be present within survey area 23, with the first evidence of dormouse being single, adult male dormouse encountered on 20 May 2021. Across the whole survey season, evidence of dormouse was encountered in 22 of the 53 tubes/boxes; this represents 41.5% of the nest tubes/boxes across the survey area. Individual dormice were encountered on 19 occasions, with a peak count of nine for all individuals observed during August. Two females with young were encountered in this area. A summary of the dormouse evidence encountered at survey area 23 is provided in Table 3-12.

Table 3-12 Dormouse evidence for survey area 23

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
1 (nest tube)	24/09/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during September checks only
1 (nest box)	21/07/2021	Dormouse nest comprising green and brown leaves	Active but unoccupied dormouse nest observed during July and August checks only
3	20/05/2021	Dormouse nest comprising woven grass and brown leaves	Active dormouse nest observed during May checks with confirmed occupancy by a single, active, non-breeding, adult male. Weight 16g
4	24/09/2021	Dormouse nest mostly comprising brown leaves	Active but unoccupied dormouse nest observed during September checks only
6	23/06/2021	Dormouse nest, with woven grass structure and brown leaves	Active but unoccupied dormouse nest observed during June, July, August and September checks
8	20/07/2021	Dormouse nest comprised woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during June, July, August, and September checks
9	20/08/2021	Dormouse nest comprising woven grass and brown leaves	Active dormouse nest observed during August and September, with confirmed occupancy during both months. August: Single active adult, testes scrotal male. Weight 18g. September: Single active, non-breeding adult male. Weight 21g

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
10	23/06/2021	Dormouse nest comprising woven grass and brown leaves	Active dormouse nest observed during June, July, August and September checks, with occupancy confirmed in August by one active, lactating adult female, weight 24g, with six pinks in nest
11	24/09/2021	Dormouse nest comprising tightly woven grass, surrounded by green and brown leaves, with a clear cavity	Active but unoccupied dormouse nest observed during September checks only
12	20/08/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during August and September checks
13	24/09/2021	Dormouse nest comprising tightly woven leaves with a clear structure	Active but unoccupied dormouse nest observed during September only
15	20/07/2021	Dormouse nest comprising woven grass	Active but unoccupied dormouse nest observed during July, August, and September
18	20/07/2021	Dormouse nest comprising woven grass and brown leaves with clear bowl structure	Active but unoccupied dormouse nest observed during July, August, and September
19	23/06/2021	Dormouse nest comprising woven brown leaves	Active dormouse nest observed during June, July, August and September checks, with occupancy observed during August by single, active, testes scrotal adult male. Weight 19g
20	23/06/2021	Dormouse nest comprising tightly woven grass with clear cavity, surrounded by brown and green leaves	Active but unoccupied dormouse nest observed during June, July and August checks
29	23/06/2021	Dormouse nest comprising woven grass surrounded by brown and green leaves	Active but unoccupied dormouse nest observed during June, July and August checks
30	21/07/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during July checks only
33	20/08/2021	Dormouse nest comprised of well woven grasses surrounded by green leaves with a clear cavity	Active but unoccupied dormouse nest observed during August checks only
35	23/06/2021	No nest recorded	No nest or activity was recorded in nest tube 35, however a deceased dormouse was found in an old nest tube that was positioned in the same hazel coppice stool as tube 35. It is assumed that this old nest tube had been left following previous surveys due to confirmed occupancy
38	23/06/2021	Dormouse nest comprising woven grass surrounded by brown and green leaves	Active dormouse nest observed during June, July, August and September, with occupancy confirmed in June and September. June: Single, active, non-breeding adult female. Weight 19g

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
			September: One adult lactating female - 20g. Six juveniles. Male 9g, female 9g, female 8g, male 10g, male 9g & male 10g
40	24/09/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during September checks only
41	23/06/2021	Dormouse nest comprising woven brown leaves	Active but unoccupied dormouse nest observed during June, July and August checks

3.2.67 Dormouse evidence was observed throughout area 23, with the greatest concentration of evidence found within the western and eastern woodland parcels directly adjacent to the A358.

3.2.68 The peak adult count during the surveys was three dormice (recorded in August) across the surveyed area, which represented approximately 1.13 hectares of suitable habitat within the woodland and surveyed hedgerows. This equates to an estimated population density of 2.7 adults per hectare. While it is recognised that this is likely to be an underestimate, it is at the higher end of the Dormouse Conservation Handbook figures for estimated population density for the habitat types present at survey area 23; 1.3 adult dormice per hectare for hedgerow and 4-10 adult dormice per hectare for optimal woodland.

Survey area 24

Habitat description

3.2.69 Survey area 24 is located towards the northern end of the scheme to the south of the existing A358, north of Haydon. Habitats present included the riparian corridor of the Black Brook and native hedgerows with trees, dominated by hawthorn and blackthorn. Figure 3-14 illustrates the type of habitat present at survey area 24.

3.2.70 The survey area covered approximately 2.09 kilometres of suitable dormouse habitats. With an estimated average hedgerow width of 3 metres, the area of suitable habitat surveyed was estimated to be 0.63 hectare.



Figure 3-14 Survey area 24 habitat example

Nest tube and box surveys

- 3.2.71 Dormice were confirmed to be present within survey area 24, with the first evidence of dormouse being an unoccupied dormouse nest encountered on 24 May 2021. Across the whole survey season, evidence of dormouse was encountered in five of the 83 tubes/boxes; this represents 6% of the nest tubes/boxes across the survey area. Individual dormice were encountered on one occasion, with a peak count of one individual observed during September. No females with young were encountered in this area. A summary of the dormouse evidence encountered at survey area 24 is provided in Table 3-13.

Table 3-13 Dormouse evidence for survey area 24

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
24	24/06/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during June checks only
30	19/08/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during August checks only
51	24/05/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during May, June, and July. Nest remained in place for August and September checks however nest was showing signs of abandonment
58	26/07/2021	Dormouse nest comprising woven grass with some brown leaves and a clear cavity	Active but unoccupied dormouse nest observed during July, August and September checks
61	23/09/2021	Dormouse nest comprising woven grass and brown leaves	Active dormouse nest observed during September with occupancy confirmed by a single, active, testes scrotal adult male. Weight 16g

- 3.2.72 Dormouse evidence was relatively sparse in this area, with the greatest concentration of evidence along the riparian corridor of Black Brook.
- 3.2.73 The peak adult count during the surveys was one dormouse across the surveyed area, which represented approximately 0.63 hectares of suitable habitat. This equates to an estimated population density of 1.6 adults per hectare. While it is recognised that this is likely to be an underestimate, this is largely consistent with the figure of 1.3 adult dormice per hectare given for hedgerow habitat in the Dormouse Conservation Handbook.

Survey area 25

Habitat description

- 3.2.74 Survey area 25 is located towards the northern end of the scheme to the south of the existing A358, immediately west of Henlade. Suitable habitat present comprised native species-rich hedgerow dominated by hawthorn and blackthorn. Figure 3-15 illustrates the type of habitat present at survey area 25.
- 3.2.75 The survey area covered approximately 1.31 kilometres of suitable dormouse habitats. With an estimated average hedgerow width of 4 metres, the area of suitable habitat surveyed was estimated to be 0.52 hectares.



Figure 3-15 Survey area 25 habitat example

Nest tube and box surveys

3.2.76 Dormice were confirmed to be present within survey area 25, with the first evidence of dormouse being an occupied dormouse nest encountered on 25 June 2021. Across the whole survey season, evidence of dormouse was encountered in one of the 62 tubes/boxes (tube 36); this represents 1.6% of the nest tubes/boxes across the survey area. Individual dormice were not encountered in this area. A summary of the dormouse evidence encountered at survey area 25 is provided in Table 3-14.

Table 3-14 Dormouse evidence for survey area 25

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
36	25/06/2021	Dormouse nest with tight woven grass structure and a clear cavity	Active dormouse nest observed during June checks. Nest showed signs of abandonment in subsequent checks and was destroyed, possibly by wood mice.

3.2.77 Dormouse evidence was only observed within the eastern hedgerow which runs along Stoke Road perpendicular to the existing A358.

3.2.78 As no individual dormice were encountered within the surveyed area, an estimated population density cannot be calculated. However, it is recognised that nest tube surveys often underestimate the size of the dormouse population present. As dormouse presence has been confirmed, the dormouse population density is estimated as 1.3 adult dormice per hectare, as per the estimated density for hedgerow habitats within the Dormouse Conservation Handbook such as those present in survey area 25.

Survey area 26

Habitat description

3.2.79 Survey area 26 is located towards the northern end of the scheme to the south of the existing A358, west of Henlade. Habitats present included native species-rich hedgerows with abundant hawthorn, hazel, blackthorn and spindle, and a mixed deciduous woodland corridor along the Thornwater Stream with an understorey of dense bramble, hawthorn and hazel. Figure 3-16 illustrates the type of habitat present at survey area 26.

3.2.80 The survey area covered approximately 1.67 kilometres of suitable dormouse habitats, with an estimated average hedgerow width of 4 metres, and assuming approximately 10 metre width of woodland surveyed, the area of suitable habitat surveyed was estimated to be 1.17 hectares.



Figure 3-16 Survey area 26 habitat example

Nest tube and box surveys

3.2.81 Dormice were confirmed to be present within survey area 26, with the first evidence of dormouse being four adult dormice encountered on 26 May 2021. Across the whole survey season, evidence of dormouse was encountered in 34 of the 101 tubes/boxes; this represents 33.6% of the nest tube/boxes across the survey area. Individual dormice were encountered on 27 occasions, with a peak count of 11 for all individuals observed during June. Three nests with young were encountered in this area. A summary of the dormouse evidence encountered at survey area 26 is provided in Table 3-15.

Table 3-15 Dormouse evidence for survey area 26

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
6	19/08/2021	Dormouse nest comprising woven grass and some green leaves	Active but unoccupied dormouse nest observed during August and September checks
10	19/08/2021	Dormouse nest comprising woven grass with green hazel and hawthorn leaves	Active but unoccupied dormouse nest observed during August and September checks
11	19/08/2021	Dormouse nest comprising a mixture of grasses and green leaves	Active but unoccupied dormouse nest observed during August checks only
24	26/05/2021	Dormouse nest box full to the top with green and brown leaves and a woven bowl structure	Active dormouse nest observed during May, June, July and August checks, with occupancy confirmed during May checks by a single, active, non-breeding adult male. Weight 16g. Nest had been destroyed by woodmice by September checks
25	19/08/2021	Dormouse nest comprising nicely woven grass and a mixture of brown and green leaves	Active dormouse nest observed during August checks. Nest had been taken over by woodmouse by September checks

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
29	19/08/2021	Dormouse nest comprising a mixture of hawthorn leaves and stripped bark with woven grass	Active dormouse nest first observed during August checks. Nest was still in position during September checks; however a single, juvenile male dormouse was found dead within the nest
30	23/09/2021	Dormouse nest comprising tightly woven green leaves	Active but unoccupied dormouse nest found during September checks only
31	19/07/2021	Dormouse nest with tightly woven grass structure surrounded by some brown and green leaves with moss	Active dormouse nest found during July and August checks, with occupancy confirmed during July by a single, active, testes scrotal, adult male. Weight 18g
32	23/06/2021	Dormouse nest comprising tightly woven green leaves	Active but unoccupied dormouse nest observed during June, July and August checks
38	19/08/2021	Dormouse nest comprised mostly of brown and green leaves, with some woven grass	Active but unoccupied dormouse nest observed during August and September checks
45	23/09/2021	Dormouse nest comprised mostly of brown and green leaves, with some woven grass	Active but unoccupied dormouse nest observed during September checks only
50	23/06/2021	Dormouse nest comprised mostly of woven grass and brown leaves	Active dormouse nest observed during June with confirmed occupancy of five GEO dormice observed. Adult was not present during time of inspection. Nest was also in place during July and August however showing signs of abandonment
51	19/07/2021	Dormouse nest comprising brown and green leaves with some woven grass	Active but unoccupied dormouse nest observed during July and August
53	19/08/2021	Dormouse nest comprised woven grass and green leaves	Active but unoccupied dormouse nest observed during August and September
54	19/08/2021	Dormouse nest comprising woven grass and green leaves with lots of moss	Active but unoccupied dormouse nest observed during August checks only
57	19/08/2021	Dormouse nest comprised woven grass and green leaves	Active dormouse nest observed during August and September checks, with occupancy confirmed during both months. August: Single, active, non-breeding juvenile female. Weight 15g. September: Single, active, post-lactating adult female. Weight 18g
58	23/06/2021	Dormouse nest comprised of woven green leaves	Active dormouse nest observed during June and July checks, with occupancy confirmed during both months. June: Single, active, testes scrotal adult male. Weight 28g. July: Active, non-breeding adult female. Weight 17g. Second assumed adult dormouse was observed leaving the nest before biometrics could be recorded
59	19/08/2021	Dormouse nest comprising tightly woven grass with green and brown leaves	Active but unoccupied dormouse nest observed during August and September checks
67	23/06/2021	Dormouse nest comprising of woven leaves	Active but unoccupied dormouse nest observed during June and July checks

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
68	26/05/2021	Dormouse nest comprising of woven grass structure surrounded by brown leaves	Active dormouse nest observed during May with occupancy confirmed by a single, active, non-breeding adult female. Weight 17g. Nest was also observed during August checks, however showing signs of abandonment
69	19/08/2021	Dormouse nest comprising of tightly woven grass structure surrounded by green hazel leaves.	Active dormouse nest observed during August checks with occupancy confirmed by an active, lactating adult female with four pink young. Adult weight 21g. Nest was also observed during September checks, however showing signs of abandonment
70	23/09/2021	Dormouse nest comprising of tightly woven grasses surrounded by green leaves	Active dormouse nest observed during September checks only, with occupancy confirmed by two, active, non-breeding juvenile dormice. Male weight 15.5g. Female weight 15g. Female had a white tip on tail
71	23/06/2021	Dormouse nest comprising woven green leaves	Active but unoccupied dormouse nest observed during June, July and August
73	23/06/2021	Dormouse nest comprising woven green leaves	Active but unoccupied dormouse nest observed during June, July and August
80	19/07/2021	Dormouse nest comprising woven green leaves	Active but unoccupied dormouse nest observed during July, August and September
81	26/05/2021	Dormouse nest comprising tightly woven green leaves	Active but unoccupied dormouse nest observed during June, July, August and September
82	26/05/2021	Dormouse nest comprising woven grass with green and brown leaves	Active dormouse nest observed during May, July, August and September with occupancy confirmed in May by two active, non-breeding adults. Female weight 17g. Male weight 17g
83	24/06/2021	Dormouse nest comprising woven grass with green and brown leaves	Active dormouse nest observed during June, July and August, with occupancy confirmed in June by five pink dormice. Mother was not present during checks
90	23/06/2021	Dormouse nest comprising woven grass with brown leaves	Active but unoccupied dormouse nest observed during June and July checks
91	19/07/2021	Dormouse nest comprising tightly woven grass surrounded by brown and green leaves	Active but unoccupied dormouse nest observed during July checks only
94	19/07/2021	Dormouse nest comprising woven green leaves	Active but unoccupied dormouse nest observed during July checks only
97	19/08/2021	Dormouse nest comprising tightly woven grass structure surrounded by green leaves	Active but unoccupied dormouse nest observed during August and September checks
98	23/09/2021	Dormouse nest comprising some woven grass, with brown and green leaves and some moss	Active but unoccupied dormouse nest observed during September checks only
100	23/09/2021	Dormouse nest comprising tightly woven grass structure surrounded by green leaves	Active but unoccupied dormouse nest observed during September checks only

3.2.82 Dormouse evidence was found throughout survey area 26, with the greatest concentration of evidence found within the broadleaved woodland corridor along the Thornwater Stream.

3.2.83 The peak adult count during the surveys was four dormice (recorded in May) across the surveyed area, which represented approximately 1.17 hectares of suitable habitat within the woodland and surveyed hedgerows. This equates to an estimated population density of 3.4 adults per hectare. While it is recognised that this is likely to be an underestimate, it is in line with the lower end of the Dormouse Conservation Handbook figures for estimated population density for the habitat types present at survey area 26; 1.3 adult dormice per hectare for hedgerow and 4-10 adult dormice per hectare for optimal woodland.

Survey area 27

Habitat description

3.2.84 Survey area 27 is located near Mattock's Tree Green to the west of the existing A358. Habitats present included native species-rich hedgerow, dominated by elm with abundant bramble, hawthorn and blackthorn. Figure 3-17 illustrates the type of habitat present at survey area 27.

3.2.85 The survey area covered approximately 2.29 kilometres of suitable dormouse habitats. With an estimated average hedgerow width of 4 metres, the area of suitable habitat surveyed was estimated to be 0.91 hectares.



Figure 3-17 Survey area 27 habitat example

Nest tube and box surveys

3.2.86 Dormice were confirmed to be present within survey area 27, with the first evidence of dormouse being three adult dormice encountered on 27th May 2021. Across the whole survey season, evidence of dormouse was encountered in nine of the 98 tubes/boxes; this represents 9.9% of the nest tubes/boxes deployed across the survey area. Individual dormice were encountered on five occasions, with a peak count of three for all individuals observed during May. No females with young were encountered in this area. A summary of the dormouse evidence encountered at survey area 27 is provided in Table 3-16.

Table 3-16 Dormouse evidence for survey area 27

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
2	18/08/2021	Dormouse nest comprising woven grass with green and brown leaves	Active dormouse nest observed during August checks only, with occupancy

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
			confirmed by a single, active, testes scrotal adult male. Weight 18g
20	18/08/2021	Dormouse nest comprising woven grass with green and brown leaves	Active but unoccupied dormouse nest observed during August and September checks
29	27/05/2021	Dormouse nest comprising some woven grass and green leaves. Marking tape has also been collected and woven within the nest	Active dormouse nest observed during May, June, July and August checks, with occupancy confirmed in May by two, active, non-breeding adult dormice. Male weight 17g. Female weight 14g
41	25/06/2021	Dormouse nest comprising woven grass with green leaves	Active dormouse nest observed during June, July, August and September, with occupancy confirmed in July by a single, assumed adult, dormouse observed leaving the nest before biometrics could be recorded
43	22/09/2021	Dormouse nest comprising of brown leaves	Active but unoccupied dormouse nest observed during September checks only
44	22/07/2021	Dormouse nest comprising woven grass surrounded by wet green and brown leaves	Active but unoccupied dormouse nest observed during July and August checks
55	18/08/2021	Dormouse nest comprising some woven grass and green leaves. Marking tape has also been collected and woven within the nest	Active but unoccupied dormouse nest observed during August checks only
70	25/06/2021	Dormouse nest comprising woven grass with some brown leaves	Active but unoccupied dormouse nest observed during June, July, August and September checks
79	27/05/2021	Dormouse nest comprising woven grass with some brown leaves	Active dormouse nest observed during May, June, July, August and September checks, with occupancy confirmed during May by a single, active, assumed adult, dormouse observed leaving the nest before biometrics could be recorded

3.2.87 Dormouse evidence was found in small pockets throughout the area, with the greatest concentration of evidence found in the most western hedgerow.

3.2.88 The peak adult count during the surveys was three dormice (during May) across the surveyed area, which represented approximately 0.91 hectares of suitable habitat. This equates to an estimated population density of 3.3 adults per hectare. It is recognised that this is likely to be an underestimate, but still exceeds the figure of 1.3 adult dormice per hectare given for hedgerow habitat in the Dormouse Conservation Handbook.

Survey area 28

Habitat description

3.2.89 Survey area 28 is located towards the middle of the scheme to the east of the existing A358, west of Meare Green. Habitats present included native species-rich hedgerow with abundant blackthorn, hawthorn, hazel and spindle. Figure 3-18 illustrates the type of habitat present at survey area 28.

3.2.90 The survey area covered approximately 1.02 kilometres of suitable dormouse habitats. With an estimated average hedgerow width of 4 metres, the area of suitable habitat surveyed was estimated to be 0.41 hectares.



Figure 3-18 Survey area 28 habitat example

Nest tube and box surveys

3.2.91 Dormice were confirmed to be present within survey area 28, with the first evidence of dormouse being two adult dormice encountered on 22 June 2021. Across the whole survey season, evidence of dormouse was encountered in 15 of the 45 tubes/boxes; this represents 33.3% of the nest tubes/boxes deployed across the survey area. Individual dormice were encountered on three occasions, with a peak count of one individual during June, August and September. No females with young were encountered in this area. A summary of the dormouse evidence encountered at survey area 28 is provided in Table 3-17.

Table 3-17 Dormouse evidence for survey area 28

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
5	20/07/2021	Dormouse nest comprising woven grass with some brown leaves and moss	Active but unoccupied dormouse nest observed during July and September checks
9	22/06/2021	Dormouse nest comprising woven grass with some loose green leaves	Active dormouse nest observed during June, July and August checks, with occupancy confirmed in June by a single, active, non-breeding adult male. Weight 16g
12	22/06/2021	Dormouse nest comprising woven grass and green leaves	Active but unoccupied dormouse nest observed during June, July, August, and September checks
13	21/09/2021	Dormouse nest comprising woven grass with some brown leaves and moss	Active but unoccupied dormouse nest observed during September checks only
15	20/07/2021	Dormouse nest comprised mostly of brown leaves with some woven grass	Active but unoccupied dormouse nest observed during July checks only
16	22/06/2021	Dormouse nest comprising woven grass with some brown leaves and moss	Active but unoccupied dormouse nest observed during June checks only
17	21/09/2021	Dormouse nest comprising woven brown and green leaves	Active but unoccupied dormouse nest observed during September checks only

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
19	21/09/2021	Dormouse nest comprised mostly of brown leaves with some woven grass	Active but unoccupied dormouse nest observed during September checks only
20	17/08/2021	Dormouse nest comprising of woven green leaves	Active dormouse nest observed during August and September checks, with occupancy confirmed during August by a single, active, non-breeding adult male. Weight 16.5g
21	22/06/2021	Dormouse nest comprising woven grass with brown and green leaves and a clear cavity	Active but unoccupied dormouse nest observed during June, July, August and September checks
23	21/09/2021	Dormouse nest comprising of woven green leaves	Active dormouse nest observed during September checks only, with occupancy confirmed by a single, active, adult female. Weight 20g
25	22/06/2021	Dormouse nest comprising tightly woven grass with a clear cavity, surrounded by green leaves	Active but unoccupied dormouse nest observed during June, July, and August checks
26	21/09/2021	Dormouse nest comprising green and brown leaves	Active but unoccupied dormouse nest observed during September checks only
35	20/07/2021	Dormouse nest comprising green and brown leaves	Active but unoccupied dormouse nest observed during July checks only
36	17/08/2021	Dormouse nest comprising green and brown leaves with a clear cavity	Active but unoccupied dormouse nest observed during August checks only

- 3.2.92 Dormouse evidence was observed throughout the survey area, with the greatest concentration of evidence found within the hedgerow directly adjacent to the existing A358.
- 3.2.93 The peak adult count during the surveys was one dormouse (during June, August and September) across the surveyed area, which represented approximately 0.41 hectares of suitable habitat. This equates to an estimated population density of 2.4 adults per hectare. It is recognised that this is likely to be an underestimate, but still far exceeds the figure of 1.3 adult dormice per hectare given for hedgerow habitat in the Dormouse Conservation Handbook.

Survey area 29

Habitat description

- 3.2.94 Survey area 29 is located to the south of the existing A358, north of West Hatch. Habitats present included native species rich hedgerows of hawthorn, hazel, oak and bramble, and a small broadleaved woodland corridor with a thin understorey of dogwood, hawthorn and hazel. Figure 3-19 illustrates the type of habitat present at survey area 29.
- 3.2.95 The survey area covered approximately 1.59 kilometres of suitable dormouse habitats, with an estimated average hedgerow width of 4.5 metres and assuming approximately 10 metre width of woodland surveyed, the total area of suitable habitat surveyed was estimated to be 0.91 hectares.



Figure 3-19 Survey area 29 habitat example

Nest tube and box surveys

3.2.96 Dormice were confirmed to be present within survey area 29, with the first evidence of dormouse being an adult male dormouse encountered on 24 May 2021. Across the whole survey season, evidence of dormouse was encountered in 12 of the 66 tubes/boxes; this represents 18.1% of the nest tubes/boxes deployed across the survey area. Individual dormice were encountered on 10 occasions, with a peak count of six for all individuals observed during July. One female with young was encountered in this area. A summary of the dormouse evidence encountered at survey area 29 is provided in Table 3-18.

Table 3-18 Dormouse evidence for survey area 29

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
9	22/07/2021	Dormouse nest comprising woven grass and a mixture of brown and green leaves	Active but unoccupied dormouse nest observed during July and August checks
10	22/07/2021	Dormouse nest comprising woven grass and green leaves	Active but unoccupied dormouse nest observed during July checks only
11 (nest box)	24/06/2021	Dormouse nest comprising of woven grass and green leaves	Active dormouse nest observed during June, July and August checks, with occupancy confirmed during July by an active, non-breeding adult male, weight 20g, three active juvenile males, weights 9g, 10g and 10.5g, and a second active, assumed adult observed leaving the nest before biometrics could be recorded
11 (nest tube)	24/06/2021	Dormouse nest comprising woven grass and a mixture of brown and green leaves	Active but unoccupied dormouse nest observed during June checks only
14	24/05/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active dormouse nest observed during May, June, July and August checks, with occupancy confirmed in May and July. May: Single, active, adult male. Weight 17g. July: Single, active, adult male. Weight 17.5g
35	19/08/2021	Dormouse nest comprising woven grass and surrounded by brown and green leaves	Active dormouse nest observed during August checks only

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
41	24/06/2021	Dormouse nest comprising woven grass and a mixture of brown and green leaves	Active dormouse nest observed during June, July, August and September checks, with occupancy confirmed during September by a single, active, non-breeding, juvenile female. Weight 9.5g
42	24/05/2021	Dormouse nest comprising woven grass and a mixture of brown and green leaves	Active dormouse nest observed during May, June, July, August and September checks, with occupancy confirmed in May by a single active, assumed adult dormouse observed leaving the nest before biometrics could be recorded
43	24/05/2021	Dormouse nest comprising woven grass surrounded by green leaves	Active but unoccupied dormouse nest observed during May, June, July and August checks
45	23/09/2021	Dormouse nest comprising woven grass surrounded by green leaves	Active but unoccupied dormouse nest observed during September checks only
46	24/05/2021	Dormouse nest comprising of woven grass	Active dormouse nest observed during May, June, July and August checks, with occupancy confirmed in June by a single active, assumed adult dormouse observed leaving the nest before biometrics could be recorded
52	24/05/2021	Dormouse nest comprising woven grass surrounded by green leaves	Active dormouse nest observed during May checks only, with occupancy confirmed by a single, active, adult female. Weight 14g

- 3.2.97 Dormouse evidence was observed in the northern and southern hedgerows, with the greatest concentration of evidence found within the hedgerow directly adjacent to the existing A358.
- 3.2.98 The peak adult count during the surveys was three dormice (during May & July) across the surveyed area, which represented approximately 0.91 hectares of suitable habitat within the woodland strips and surveyed hedgerows. This equates to an estimated population density of 3.3 adults per hectare. While it is recognised that this is likely to be an underestimate, it is largely in line with the Dormouse Conservation Handbook figures for estimated population density for the habitat types present at survey area 29; 1.3 adult dormice per hectare for hedgerow and 4-10 adult dormice per hectare for optimal woodland.

Survey area 30

Habitat description

- 3.2.99 Survey area 30 is located towards the central section of the scheme to the east of the existing A358, west of Hatch Green. Habitats present included native species-rich hedgerow with abundant blackthorn and hawthorn, and a tree belt and scrub riparian corridor along Fivehead River Main Channel 1. Figure 3-20 illustrates the type of habitat present at survey area 30.
- 3.2.100 The survey area covered approximately 2.24 kilometres of suitable dormouse habitats. With an estimated average hedgerow width of 4 metres, the area of suitable habitat surveyed was estimated to be 0.90 hectares.



Figure 3-20 Survey area 30 habitat example

Nest tube and box surveys

3.2.101 Dormice were confirmed to be present within survey area 30, with the first evidence of dormouse being two adult dormice encountered on 20 May 2021. Across the whole survey season, evidence of dormouse was encountered in 22 of the 97 tubes/boxes; this represents 22.7% of the nest tubes/boxes deployed across the survey area. Individual dormice were encountered on eight occasions, with a peak count of three individuals during May and June. One nest with a single, deceased pink dormouse was encountered in this area. A summary of the dormouse evidence encountered at survey area 30 is provided in Table 3-19.

Table 3-19 Dormouse evidence for survey area 30

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
1	20/09/2021	Dormouse nest comprising woven grass surrounded by green leaves	Active but unoccupied dormouse nest observed during September checks only
13	22/06/2021	Dormouse nest comprising woven grass surrounded by green leaves	Active but unoccupied dormouse nest observed during June, July and August checks
15	20/09/2021	Dormouse nest comprising brown and green leaves	Unoccupied dormouse nest observed during September checks only
17 (nest box)	22/06/2021	Dormouse nest comprising woven grass surrounded by green leaves	Active dormouse nest observed during June, July, August and September, with occupancy confirmed during June by three, active adult dormice. Male weight 15g. Female weight 17g. Female weight 21g. Breeding conditions unknown
17 (nest tube)	19/07/2021	Dormouse nest comprising woven grass surrounded by brown and green leaves	Active dormouse nest observed during July, August and September checks, with occupancy confirmed during August by a single, active, non-breeding juvenile male. Weight 14.5g
18	16/08/2021	Dormouse nest comprising tightly woven grass	Active dormouse nest observed during August and September with occupancy confirmed during August by a single, active, non-breeding juvenile female. Weight 14g
23	22/06/2021	Dormouse nest comprising woven grass surrounded by brown and green leaves	Active dormouse nest observed during June and July checks, with occupancy confirmed

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
			in June by a single, dead pink dormouse observed within the nest
24	19/07/2021	Dormouse nest comprising brown leaves	Active but unoccupied dormouse nest observed during July checks only
26	20/05/2021	Dormouse nest comprising tightly woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during May, June, July, August and September checks
32	16/08/2021	Dormouse nest comprising woven green leaves surrounded by woven grass	Active but unoccupied dormouse nest observed during August checks only
37	19/07/2021	Dormouse nest comprising woven green leaves	Active but unoccupied dormouse nest observed during July checks only
39	20/05/2021	Dormouse nest comprising woven grass with moss with a bowl structure	Active but unoccupied dormouse nest observed during May, June and July checks
40	20/05/2021	Dormouse nest comprising woven grass with some green leaves	Active dormouse nest observed during May checks but nest was occupied by wood mice by June
44	16/08/2021	Dormouse nest comprising woven grass	Active but unoccupied dormouse nest observed during August and September checks
60	20/05/2021	Dormouse nest comprising woven grass with clear bowl structure	Active but unoccupied dormouse nest observed during May, June, July and August checks
62	20/05/2021	Dormouse nest comprising woven grass	Active but unoccupied dormouse nest observed during May, June, July and August checks
64	22/06/2021	Dormouse nest comprising woven grass with clear bowl structure	Active but unoccupied dormouse nest observed during June, July and August checks
65	20/05/2021	Dormouse nest comprising tightly woven grass surrounded by brown leaves	Active dormouse nest observed during May, June and July, with occupancy confirmed in May by two active adult dormice. Female weight 14.5g, Male weight 16g. Breeding conditions unknown
69	22/06/2021	Dormouse nest comprising woven grass surrounded by brown and green leaves	Active but unoccupied dormouse nest observed during June and July checks
74	20/05/2021	Dormouse nest comprising woven grass with some green leaves	Active but unoccupied dormouse nest observed during May, June, July and August checks
75	20/05/2021	Dormouse nest comprising of woven grass with clear cavity surrounded by old black plastic bag and some green leaves	Active dormouse nest observed during May, June, July and August checks, with occupancy confirmed in May by a single, active, non-breeding adult female. Weight 15g

3.2.102 Dormouse evidence was observed throughout the survey area, with the greatest concentration of evidence found within the hedgerow directly adjacent to the existing A358.

3.2.103 The peak adult count during the surveys was three dormice (during May & July) across the surveyed area, which represented approximately 0.90 hectares of suitable habitat. This equates to an estimated population density of 3.3 adults per hectare. While it is recognised that this is likely to be an underestimate, it exceeds

the figure of 1.3 adult dormice per hectare given for hedgerow habitat in the Dormouse Conservation Handbook.

Survey area 31

Habitat description

- 3.2.104 Survey area 31 is located towards the middle of the scheme to the west of the existing A358, east of Bickenhall and Batten's Green. Suitable habitat comprised native hedgerow with trees dominated by hawthorn, blackthorn and elm, and broadleaved ancient woodland at Saltfield Copse Local Wildlife Site (LWS). Figure 3-21 illustrates the type of habitat present at survey area 31.
- 3.2.105 The survey area covered approximately 1.36 kilometres of suitable dormouse habitats, with an estimated average hedgerow width of 3 metres, and an estimated 10 metre width of woodland surveyed, the total area of suitable habitat surveyed was estimated to be 0.54 hectares.



Figure 3-21 Survey area 31 habitat example

Nest tube and box surveys

- 3.2.106 Dormice were confirmed to be present within survey area 31, with the first evidence of dormouse being an active adult female encountered on 18 May 2021. Across the whole survey season, evidence of dormouse was encountered in 19 of the 64 tubes/boxes; this represents 29.7% of the nest tubes/boxes deployed across the survey area. Individual dormice were encountered on five occasions, with a peak count of two for all individuals observed during August. No females with young were encountered in this area. A summary of the dormouse evidence encountered at survey area 31 is provided in Table 3-20.

Table 3-20 Dormouse evidence for survey area 31

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
4	23/07/2021	Dormouse nest comprising tightly woven grass and brown leaves with some moss	Active but unoccupied dormouse nest observed during July, August and September checks
6	23/07/2021	Dormouse nest comprising tightly woven grass and brown leaves	Active but unoccupied dormouse nest observed during July, August and September checks

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
7	03/09/2021	Dormouse nest comprising tightly woven grass	Active but unoccupied dormouse nest observed during September checks only
9	23/07/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during July checks only
12	18/05/2021	Dormouse nest comprising tightly woven grass and brown leaves	Active but unoccupied dormouse nest observed during May, July and August checks
16	18/05/2021	Dormouse nest comprising tightly woven grass with a bowl structure	Active but unoccupied dormouse nest observed during May and July checks
18	18/05/2021	Dormouse nest comprising tightly woven grass and brown leaves	Active but unoccupied dormouse nest observed during May, July and August checks
32	18/05/2021	Dormouse nest comprising tightly woven grass and green leaves with a clear cavity	Active dormouse nest observed during May and July checks, with occupancy confirmed in May by a single, active, non-breeding adult female. Weight 14g
34	23/07/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during July and August checks
39	23/07/2021	Dormouse nest comprising woven grass and brown leaves	Active dormouse nest observed during July and August checks, with occupancy confirmed in August by a single, active, assumed adult, dormouse observed leaving the nest before biometrics could be recorded
40	17/08/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during August and September checks
42	17/08/2021	Dormouse nest comprising woven grass and brown leaves	Active dormouse nest observed during August checks only, with occupancy confirmed by a single, active, testes scrotal, adult male. Weight 15g
43	23/07/2021	Dormouse nest comprising woven grass and damp brown leaves	Active but unoccupied dormouse nest observed during July and August checks
44	21/09/2021	Dormouse nest comprising woven grass and brown leaves	Active dormouse nest observed during September checks only, with occupancy confirmed by a single, active, non-breeding, adult male. Weight 18g
45	17/08/2021	Dormouse nest comprising tightly woven grass with brown and green leaves	Active but unoccupied dormouse nest observed during August checks only
46	21/09/2021	Dormouse nest comprising brown leaves with some woven grass	Active but unoccupied dormouse nest observed during September checks only
47	17/08/2021	Dormouse nest comprising woven grass surrounded by green leaves with a clear cavity	Active but unoccupied dormouse nest observed during August and September checks
48	23/07/2021	Dormouse nest comprising woven grass and brown leaves	Active dormouse nest observed during July checks only, with occupancy confirmed by a single, active, non-breeding adult male. Weight 17g
49	17/08/2021	Dormouse nest comprising woven grass with brown leaves	Active but unoccupied dormouse nest observed during August checks only

- 3.2.107 Dormouse evidence was observed within the eastern and southern hedgerows, with the greatest concentration of evidence found in the eastern hedgerow within Saltfield Copse LWS directly adjacent to the existing A358.
- 3.2.108 The peak adult count during the surveys was two dormice (during August) across the surveyed area, which represented approximately 0.54 hectares of suitable habitat within the woodland and surveyed hedgerows. This equates to an estimated population density of 3.7 adults per hectare. While it is recognised that this is likely to be an underestimate, it is in line with the lower end of the Dormouse Conservation Handbook figures for estimated population density for the habitat types present at survey area 31; 1.3 adult dormice per hectare for hedgerow and 4-10 adult dormice per hectare for optimal woodland.

Survey area 32

Habitat description

- 3.2.109 Survey area 32 is located towards the centre of the scheme to the north of the existing A358, at Capland. Habitats present included native species-rich hedgerow dominated by hawthorn and blackthorn, and small parcels of lowland mixed deciduous woodland, with an understorey of occasional hawthorn. Figure 3-22 illustrates the type of habitat present at survey area 32.
- 3.2.110 The survey area covered approximately 1.86 kilometres of suitable dormouse habitats, with an estimated average hedgerow width of 4 metres, and assuming approximately 10 metre width of woodland surveyed, the total area of suitable habitat surveyed was estimated to be 0.86 hectares.



Figure 3-22 Survey area 32 habitat example

Nest tube and box surveys

- 3.2.111 Dormice were confirmed to be present within survey area 32, with the first evidence of dormouse being two adult male dormice encountered on 19 May 2021. Across the whole survey season, evidence of dormouse was encountered in 12 of the 94 tubes/boxes; this represents 12.8% of the nest tubes/boxes deployed across the survey area. Individual dormice were encountered on four occasions, with a peak count of two for all individuals observed during May. No females with young were encountered in this area. A summary of the dormouse evidence encountered at survey area 32 is provided in Table 3-21.

Table 3-21 Dormouse evidence for survey area 32

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
3	19/05/2021	Dormouse nest comprising woven grass with brown leaves	Active but unoccupied dormouse nest observed during May and June checks
10	20/09/2021	Dormouse nest comprising green leaves	Active but unoccupied dormouse nest observed during September checks only
27	22/06/2021	Dormouse nest comprising woven grass with brown leaves	Active but unoccupied dormouse nest observed during June checks only
28	22/06/2021	Dormouse nest comprising tightly woven grass surrounded by brown and green leaves with a clear cavity	Active but unoccupied dormouse nest observed during June, July and September checks
33	22/06/2021	Dormouse nest comprising tightly woven grass	Active but unoccupied dormouse nest observed during June and July checks
40	22/06/2021	Dormouse nest comprising woven grass with brown leaves	Active but unoccupied dormouse nest observed during June checks only
42	19/05/2021	Dormouse nest comprising woven brown leaves	Active dormouse nest observed during May and June checks, with occupancy confirmed in May by a single, active, adult male. Weight 15.5g
45	23/06/2021	Dormouse nest comprising woven grass surrounded by brown and green leaves	Active dormouse nest observed in June and July, with occupancy confirmed in June by a single, torpid, adult male. Weight 16g
46	23/06/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed in June, July and September checks
48	19/05/2021	Dormouse nest comprising woven grass and brown leaves	Active dormouse nest observed in May and July checks with occupancy confirmed in May by a single, active adult male. Weight 17g. Breeding condition unknown.
67	20/09/2021	Dormouse nest comprising woven grass and brown leaves	Active dormouse nest observed during September checks only, with occupancy confirmed by a single, active adult female. Weight 16.5g. Breeding condition unknown.
69	19/07/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during July checks only

3.2.112 Dormouse evidence was found within multiple hedgerows in survey area 32, with the greatest concentration of evidence found within the hedgerow adjacent to Capland Lane.

3.2.113 The peak adult count during the surveys was two dormice (during May) across the surveyed area, which represented approximately 0.86 hectares of suitable habitat within the woodland and adjacent hedgerows. This equates to an estimated population density of 2.3 adults per hectare. While it is recognised that this is likely to be an underestimate, it is in line with the lower end of the Dormouse Conservation Handbook figures for estimated population density for the habitat types present at survey area 32; 1.3 adult dormice per hectare for hedgerow and 4-10 adult dormice per hectare for optimal woodland.

Survey area 33

Habitat description

- 3.2.114 Survey area 33 is located towards the southern end of the scheme to the south of the existing A358. Habitats present included broadleaved woodland dominated by oak with occasional hazel and hedgerows dominated with hawthorn and bramble. Figure 3-23 illustrates the type of habitat present at survey area 33.
- 3.2.115 The survey area covered approximately 1.77 kilometres of suitable dormouse habitats, with an estimated average hedgerow width of 3 metres, and assuming approximately 10 metre width of woodland surveyed. The total area of suitable habitat surveyed was estimated to be 1.15 hectares.



Figure 3-23 Survey area 33 habitat example

Nest tube and box surveys

- 3.2.116 Dormice were confirmed to be present within survey area 33, with the first evidence of dormouse being four dormice encountered on 1 July 2021. Across the whole survey season, evidence of dormouse was encountered in 25 of the 55 tubes/boxes; this represents 45.4% of the nest tubes/boxes deployed within the survey area. Individual dormice were encountered on 12 occasions, with a peak count of seven for all individuals observed during July. One lactating female was encountered in this area. A summary of the dormouse evidence encountered at survey area 33 is provided in Table 3-22.

Table 3-22 Dormouse evidence for survey area 33

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
1	01/07/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active dormouse nest observed during July and September checks with occupancy confirmed in July by a single, active, non-breeding adult male. Weight 15g
3 (nest tube)	01/07/2021	Dormouse nest comprising woven grass surrounded by green leaves	Active dormouse nest observed during July and August checks, with occupancy confirmed in July by an active, assumed adult, dormouse observed leaving the nest before biometrics could be recorded
3 (nest box)	01/07/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during July, August and September checks

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
5	01/07/2021	Dormouse nest comprising woven grass surrounded by brown leaves with a clear cavity	Active but unoccupied dormouse nest observed during July checks only
7	24/09/2021	Dormouse nest comprising woven grass surrounded by green leaves	Active dormouse nest observed during September checks only, with occupancy confirmed by a single, active, juvenile male. Weight 16g
9 (nest tube)	22/07/2021	Dormouse nest comprising woven grass surrounded by brown leaves with a clear cavity	Active but unoccupied dormouse nest observed during July, August and September checks
9 (nest box)	24/09/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active dormouse nest observed during September checks only, with occupancy confirmed by two, active female dormice. Adult weight 22g. Juvenile weight 13g
10	01/07/2021	Dormouse nest comprising tightly woven grass surrounded by brown and green leaves	Active dormouse nest observed during July and August checks, with occupancy confirmed in July by a single active dormouse observed leaving the nest before any biometrics could be recorded
20	20/08/2021	Dormouse nest comprising woven grass with clear cavity surrounded by brown leaves	Active but unoccupied dormouse nest observed during August checks only
21	20/08/2021	Dormouse nest comprising woven grass surrounded by green and brown leaves	Active but unoccupied dormouse nest observed during August and September checks
22	20/08/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during August and September checks
23	20/08/2021	Dormouse nest comprising woven grass with clear cavity surrounded by brown leaves	Active but unoccupied dormouse nest observed during August and September checks
24	23/07/2021	Dormouse nest comprising woven grass surrounded by brown leaves with a clear bowl structure	Active but unoccupied dormouse nest observed during July, August and September checks
25	23/07/2021	Occupied dormouse nest however dormouse escaped before any biometrics could be recorded	Active dormouse nest observed during July, August and September checks, with occupancy confirmed in July by a single, active, assumed adult, dormouse observed leaving the nest before biometrics could be recorded
28	01/07/2021	Dormouse nest comprising woven grass with clear cavity surrounded by brown leaves	Active but unoccupied dormouse nest observed during July, August and September checks
29	23/07/2021	Dormouse nest comprising some woven grass with green leaves	Active but unoccupied dormouse nest observed during July, August and September checks
30	23/07/2021	Dormouse nest comprising well woven grass with green leaves	Active dormouse nest observed during July and September checks, with occupancy confirmed during July by a single, active, non-breeding adult female. Weight 19g
31	23/07/2021	Dormouse nest comprising woven grass with clear cavity surrounded by brown leaves	Active dormouse nest observed during July, August and September checks, with occupancy confirmed in July and September.

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
			July: Single, active, lactating adult female. Weight 22g. No young observed. September: Single, active, assumed dormouse observed leaving the nest before biometrics could be recorded
32	01/07/2021	Dormouse nest comprising brown leaves with some woven grass	Active dormouse nest observed during July, August and September checks, with occupancy confirmed during August by a single, active, non-breeding adult male. Weight 19g
33	01/07/2021	Dormouse nest comprising some woven grass with green leaves	Active dormouse nest observed during July, August and September checks, with occupancy confirmed in July by a single, assumed adult, dormouse observed leaving the nest before biometrics could be recorded
36	24/09/2021	Dormouse nest comprising some woven grass with brown leaves	Active but unoccupied dormouse nest observed during September checks only
37	01/07/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during July and September checks
38	01/07/2021	Dormouse nest comprising of varied species of leaves	Active but unoccupied dormouse nest observed during July and September checks
39	01/07/2021	Dormouse nest comprising moss surrounded woven grass with some green leaves	Active but unoccupied dormouse nest observed during July, August and September checks
45	01/07/2021	Dormouse nest comprising grass and brown leaves	Active but unoccupied dormouse nest observed during July checks only

3.2.117 Dormouse evidence was observed throughout survey area 33, with the greatest concentration of evidence found in the hedgerow directly adjacent to the existing A358.

3.2.118 The peak adult count during the surveys was seven dormice (during July) across the surveyed area, which represented approximately 1.15 hectares of suitable habitat within the woodland and adjacent hedgerows. This equates to an estimated population density of 6.1 adults per hectare. While it is recognised that this is likely to be an underestimate, it is largely in line with the Dormouse Conservation Handbook figures for estimated population density for the habitat types present at survey area 33; 1.3 adult dormice per hectare for hedgerow and 4-10 adult dormice per hectare for optimal woodland.

Survey area 34

Habitat description

3.2.119 Survey area 34 is located towards the southern end of the scheme to the north of the existing A358, north of Kenny and Ashill. Habitats present included the riparian corridor of trees and scrub along Venner's Water and native species-rich hedgerow dominated by blackthorn and hawthorn with dense patches of bramble scrub. Figure 3-24 illustrates the type of habitat present at survey area 34.

3.2.120 The survey area covered approximately 3.22 kilometres of suitable dormouse habitats. With an estimated average hedgerow width of 5 metres, the area of suitable habitat surveyed was estimated to be 1.61 hectares.



Figure 3-24 Survey area 34 habitat example

Nest tube and box surveys

3.2.121 Dormice were confirmed to be present within survey area 34, with the first evidence of dormouse being a nest with pink dormice and two adult dormice encountered on 23 June 2021. Across the whole survey season, evidence of dormouse was encountered in 38 of the 136 tubes/boxes; this represents 27.9% of the nest tubes/boxes deployed across the survey area. Individual dormice were encountered on 12 occasions, with a peak count of five for all individuals observed in July and August. One nest with young was encountered in this area. A summary of the dormouse evidence encountered at survey area 34 is provided in Table 3-23.

Table 3-23 Dormouse evidence for survey area 34

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
2	23/06/2021	Dormouse nest comprising tightly woven brown leaves	Active but unoccupied dormouse nest observed during June and July checks
3	23/06/2021	Dormouse nest comprising green and brown leaves	Active but unoccupied dormouse nest observed during June and July checks
5	23/06/2021	Dormouse nest comprising tightly woven grass structure surrounded by brown and green leaves	Active dormouse nest observed during June, July, August and September checks, with occupancy confirmed in June by two pink dormice. Mother was not presented during checks
11 (nest box)	23/07/2021	Dormouse nest comprising brown leaves	Active but unoccupied dormouse nest observed during July and August
11 (nest tube)	23/07/2021	Dormouse nest comprising brown leaves	Active dormouse nest observed during July checks only, with occupancy confirmed by an active, adult female. Weight 18g. A second active, assumed adult, dormouse was also observed leaving the nest before biometrics could be recorded
12	23/06/2021	Dormouse nest comprising tightly woven grass with a clear cavity surrounded by brown leaves	Active dormouse nest observed during June and July checks, with occupancy confirmed in July by a single, active, testes scrotal adult male. Weight 18

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
13	24/09/2021	Dormouse nest comprising woven grass structure with brown and green leaves	Active but unoccupied dormouse nest observed during September checks only
14	23/06/2021	Dormouse nest comprising tightly woven grass with a clear cavity surrounded by brown leaves	Active but unoccupied dormouse nest observed during June and July checks
15	23/06/2021	Dormouse nest comprising of brown leaves	Active dormouse nest observed during June, July and August, with occupancy confirmed in June by a single, active, assumed dormouse observed leaving the nest before biometrics could be recorded
17	23/06/2021	Dormouse nest comprising brown and green leaves	Active but unoccupied dormouse nest observed during June, July and August checks
18	02/09/2021	Dormouse nest comprising woven grass with a clear cavity surrounded by green leaves	Active but unoccupied dormouse nest observed during September checks only
19	23/07/2021	Dormouse nest comprising green leaves	Active but unoccupied dormouse nest observed during July checks only
20	23/06/2021	Dormouse nest comprising woven grass with brown leaves	Active but unoccupied dormouse nest observed during June, July and August checks
25	23/06/2021	Dormouse nest comprising tightly woven grass with green leaves	Active but unoccupied dormouse nest observed during June checks only
28	23/07/2021	Dormouse nest comprising woven grass with brown leaves	Active but unoccupied dormouse nest observed during July checks only
29	20/08/2021	Dormouse nest comprising woven grass structure with brown and green leaves	Active but unoccupied dormouse nest observed during August and September checks
32	23/07/2021	Dormouse nest comprising woven grass with green leaves	Active but unoccupied dormouse nest observed during July checks only
35	23/06/2021	Dormouse nest comprising woven brown leaves with a clear cavity	Active but unoccupied dormouse nest observed during June checks only
37	23/06/2021	Dormouse nest comprising woven grass with brown leaves	Active but unoccupied dormouse nest observed during June and July checks
41	23/06/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during June checks only
42	23/06/2021	Dormouse nest comprising woven brown leaves with a clear cavity	Active but unoccupied dormouse nest observed during June, July and August checks
45	23/06/2021	Dormouse nest comprising brown leaves with some woven grass	Active but unoccupied dormouse nest observed during June, July and August checks
46	23/07/2021	Dormouse nest comprising tightly woven grass	Active dormouse nest observed during July and August, with occupancy confirmed in August by a single, active, non-breeding juvenile female. Weight 14g
50	23/07/2021	Dormouse nest comprising tightly woven grass	Active but unoccupied dormouse nest observed during July and August checks
60	23/07/2021	Dormouse nest comprising green and brown leaves	Active but unoccupied dormouse nest observed during July, August and September checks

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
66	23/07/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during July checks only
67	23/06/2021	Dormouse nest comprising tightly woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during June, July, August and September checks
68	23/06/2021	Dormouse nest comprising tightly woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during June, August and September checks
69	23/06/2021	Dormouse nest comprising tightly woven grass with a clear cavity surrounded by green leaves	Active but unoccupied dormouse nest observed during June, July, and September checks
70	23/06/2021	Dormouse nest comprising tightly woven grass with a clear cavity surrounded by brown leaves	Active but unoccupied dormouse nest observed during June, July and August checks
71	23/06/2021	Dormouse nest comprising woven grass with brown leaves	Active but unoccupied dormouse nest observed during June checks only
72	23/07/2021	Dormouse nest comprising woven brown and green leaves with some stripped bark	Active dormouse nest observed during July, August and September checks, with occupancy confirmed in July by a single, active, testes scrotal adult male. Weight 19g
73	23/07/2021	Dormouse nest comprising woven grass with brown leaves	Active but unoccupied dormouse nest observed during July checks only
76	23/06/2021	Dormouse nest comprising woven grass with green leaves	Active but unoccupied dormouse nest observed during June and July checks
77	23/06/2021	Dormouse nest comprising woven grass with green leaves	Active but unoccupied dormouse nest observed during June, July and August checks
79	23/07/2021	Dormouse nest comprising brown leaves	Active but unoccupied dormouse nest observed during July checks only
80	23/07/2021	Dormouse nest comprising woven brown leaves	Active but unoccupied dormouse nest observed during July, August and September checks
82	23/07/2021	Dormouse nest comprising woven grass with green leaves	Active dormouse nest observed during July, August and September checks, with occupancy confirmed in July and August. July: Single, active, testes scrotal adult male. Weight 17g. August: Active, post-lactating adult female. Weight 19g. Active, non-breeding, juvenile male. Weight 11g. Two additional assumed juveniles were also observed leaving the nest before biometrics could be recorded

3.2.122 Dormouse evidence was observed throughout the entire survey area, with the greatest concentration of evidence found in the hedgerow directly adjacent to the existing A358.

3.2.123 The peak adult count during the surveys was five dormice (during July) across the surveyed area, which represented approximately 1.61 hectare of suitable habitat. This equates to an estimated population density of 3.1 adults per hectare. While it is recognised that this is likely to be an underestimate, it exceeds the figure of 1.3 adult dormice per hectare given for hedgerow habitat in the Dormouse Conservation Handbook.

Survey area 35

Habitat description

- 3.2.124 Survey area 35 is located towards the southern end of the scheme to the north of the existing A358, east of Ashill. Habitats present included a network of native species-rich hedgerows to the south of Ashill Wood ancient woodland, with hedgerow species including abundant blackthorn, hawthorn, oak and spindle. Figure 3-25 illustrates the type of habitat present at survey area 35.
- 3.2.125 The survey area covered approximately 2.31 kilometres of suitable dormouse habitats, with an estimated average hedgerow width of 3 metres, and assuming approximately 10 metre width of woodland surveyed. The area of suitable habitat surveyed was estimated to be 0.63 hectares.



Figure 3-25 Survey area 35 habitat example

Nest tube and box surveys

- 3.2.126 Dormice were confirmed to be present within survey area 35, with the first evidence of dormouse being four adult dormice encountered on 19 May 2021. Across the whole survey season, evidence of dormouse was encountered in 23 of the 127 tubes/boxes; this represents 18.1% of nest tubes/boxes deployed across the survey area. Individual dormice were encountered on 11 occasions, with a peak count of five for all individuals observed during July. One nest with young was encountered in this area. A summary of the dormouse evidence encountered at survey area 35 is provided in Table 3-24.

Table 3-24 Dormouse evidence for survey area 35

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
3	19/05/2021	Dormouse nest comprising tightly woven grass with some brown leaves	Active dormouse nest observed in May, June and July, with occupancy confirmed in May by a single, active, adult female. Weight 17.5g
4	22/07/2021	Dormouse nest comprising woven grass	Active but unoccupied dormouse nest observed during July checks only
5	22/07/2021	Dormouse nest comprising woven grass	Active but unoccupied dormouse nest observed during July, August and September checks
6	24/06/2021	Dormouse nest comprising woven grass and green leaves	Active but unoccupied dormouse nest observed during June checks only

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
13	22/07/2021	Dormouse nest comprising moss and brown leaves	Active but unoccupied dormouse nest observed during July and August checks
14	22/07/2021	Dormouse nest comprising moss	Active but unoccupied dormouse nest observed during July and August checks
15	22/07/2021	Dormouse nest comprising woven grass and green leaves	Active dormouse nest observed during July only, with occupancy confirmed by five pink dormice observed. Mother was absent during checks
16	19/08/2021	Dormouse nest comprising woven grass	Active but unoccupied dormouse nest observed during August checks only
31	22/07/2021	Dormouse nest comprising woven grass surrounded by green leaves	Active but unoccupied dormouse nest observed during July, August and September checks
43	24/06/2021	Dormouse nest comprising tightly woven grass with a clear cavity	Active but unoccupied dormouse nest observed during June, July and August checks
46	19/05/2021	Dormouse nest comprising woven grass surrounded by green leaves	Active dormouse nest observed during May and June checks, with occupancy confirmed in May by a single, active, adult female. Weight 14.5g
48	19/05/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active dormouse nest observed during May and June checks, with occupancy confirmed in May by a single, active, adult male. Weight 17.5g
51	24/06/2021	Dormouse nest comprising woven grass with some moss and brown leaves	Active but unoccupied dormouse nest observed during June checks only
56	24/06/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during June and July checks
57	19/05/2021	Dormouse nest comprising woven grass with some moss and brown leaves	Active dormouse nest observed during May and June checks, with occupancy confirmed in May by a single, active, adult female. Weight 13.5g
62	24/06/2021	Dormouse nest comprising woven brown leaves with a clear cavity	Active dormouse nest observed during June and July checks, with occupancy confirmed in June by a single, active, adult male. Weight 17g
67	23/09/2021	Dormouse nest comprising woven grass with clear cavity surrounded by brown leaves	Active but unoccupied dormouse nest observed during September checks only
72	22/07/2021	Dormouse nest comprising woven grass with green leaves	Active but unoccupied dormouse nest observed during July, August and September checks
79	24/06/2021	Dormouse nest comprising woven grass with clear cavity surrounded by green leaves	Active but unoccupied dormouse nest observed during June, July and August checks
88	22/07/2021	Dormouse nest comprising brown and green leaves	Active but unoccupied dormouse nest observed during July checks only
96	22/07/2021	Dormouse nest comprising woven grass surrounded by green and brown leaves	Active but unoccupied dormouse nest observed during July and August checks
98	24/06/2021	Dormouse nest comprising woven grass with clear cavity surrounded by brown leaves	Active dormouse nest observed during June, July and August checks, with occupancy confirmed in June by a single, active, adult male. Weight 17g

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
101	22/07/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during July checks only

3.2.127 Dormouse evidence was observed throughout the southern and western sides of the survey area, with the greatest concentration of evidence found in the hedgerows adjacent to the existing A358.

3.2.128 The peak adult count during the surveys was four dormice (during May) across the surveyed area, which represented approximately 0.63 hectares of suitable habitat within the woodland and adjacent hedgerows. This equates to an estimated population density of 6.3 adults per hectare. While it is recognised that this is likely to be an underestimate, it is largely in line with the Dormouse Conservation Handbook figures for estimated population density for the habitat types present at survey area 35; 1.3 adult dormice per hectare for hedgerow and 4-10 adult dormice per hectare for optimal woodland.

Survey area 36

Habitat description

3.2.129 Survey area 36 is located towards the southern end of the scheme to the north of the existing A358, north of Horton Cross. Habitats present included a network of native hedgerow and small broadleaved woodlands which pass through Jordans Park LWS. Hedgerow species included abundant blackthorn and hawthorn. The broadleaved woodland parcel included occasional hazel and bramble. Figure 3-26 illustrates the type of habitat present at survey area 36.

3.2.130 The survey area covered approximately 1.59 kilometres of suitable dormouse habitats, with an estimated average hedgerow width of 2 metres, and assuming approximately 10 metre width of woodland surveyed. The area of suitable habitat surveyed was estimated to be 0.51 hectares.



Figure 3-26 Survey area 36 habitat example

Nest tube and box surveys

3.2.131 Dormice were confirmed to be present within survey area 36, with the first evidence of dormouse being two unoccupied dormouse nests encountered on 20 May 2021. Across the whole survey season, evidence of dormouse was

encountered in 19 of the 66 tubes/boxes; this represents 28.8% of the nest tubes/boxes deployed across the survey area. Individual dormice were encountered on 10 occasions, with a peak count of six for all individuals observed during July. No females with young were encountered in this area. A summary of the dormouse evidence encountered at survey area 36 is provided in Table 3-25.

Table 3-25 Dormouse evidence for survey area 36

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
3	21/07/2021	Dormouse nest comprising woven grass with clear cavity surrounded by green leaves	Active but unoccupied dormouse nest observed during July, August and September checks
4	25/06/2021	Dormouse nest comprising woven grass with clear cavity surrounded by brown leaves and moss	Active but unoccupied dormouse nest observed during June, July and August checks
7	25/06/2021	Dormouse nest comprising brown leaves	Active but unoccupied dormouse nest observed during June checks only
12	25/06/2021	Dormouse nest comprising brown leaves	Active but unoccupied dormouse nest observed during June, July and August checks
14	25/06/2021	Dormouse nest comprising brown leaves	Active but unoccupied dormouse nest observed during June checks only
21	20/05/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during May checks only
25	18/08/2021	Dormouse nest comprising woven grass surrounded by green leaves	Active but unoccupied dormouse nest observed during August checks only
26	18/08/2021	Dormouse nest comprising woven brown and green leaves	Active but unoccupied dormouse nest observed during August checks only
32	20/05/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during May and June checks
36	18/08/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during August checks only
37	25/06/2021	Dormouse nest comprising woven grass surrounded by green and brown leaves	Active but unoccupied dormouse nest observed during June, July, August and September checks
44	18/08/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during August and September checks
45	18/08/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active dormouse nest observed during August and September, with occupancy confirmed in both months. August: Single, active, testes scrotal adult male. Weight 17g. September: Three active, non-breeding juveniles. Female weight 10g. Female weight 11g. Male weight 11g
46	18/08/2021	Dormouse nest comprising woven grass surrounded by green leaves	Active but unoccupied dormouse nest observed during August and September checks

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
47	25/06/2021	Dormouse nest comprising woven grass with clear cavity surrounded by green leaves	Active dormouse nest observed in June, July and August, with occupancy confirmed in July by two active, GEO. Weight 7g and 5.5g. Three additional dormice were also observed leaving the nest before biometrics were recorded, however from observation these were believed to be the adult (likely mother) and two additional GEO.
48	21/07/2021	Dormouse nest comprising woven grass surrounded by green leaves	Active dormouse nest observed in June, July and August, with occupancy confirmed in July by a single, active, non-breeding adult male. Weight 19g
50	21/07/2021	Dormouse nest comprising woven grass surrounded by damp brown leaves	Active but unoccupied dormouse nest observed during July, August and September checks
52	21/07/2021	Dormouse nest comprising woven grass surrounded brown and green leaves	Active but unoccupied dormouse nest observed during July checks only
54	18/08/2021	Dormouse nest comprising woven grass with clear cavity surrounded by brown leaves	Active but unoccupied dormouse nest observed during August checks only

3.2.132 Dormouse evidence was observed throughout the survey area, with the greatest concentration of evidence found in the southern end of the area.

3.2.133 The peak adult count during the surveys was two dormice (during July) across the surveyed area, which represented approximately 0.51 hectares of suitable habitats within the woodland and adjacent hedgerows. This equates to an estimated population density of 3.9 adults per hectare. While it is recognised that this is likely to be an underestimate, it is in line with the lower end of the Dormouse Conservation Handbook figures for estimated population density for the habitat types present at survey area 32; 1.3 adult dormice per hectare for hedgerow and 4-10 adult dormice per hectare for optimal woodland.

Survey area 37

Habitat description

3.2.134 Survey area 37 is located towards the southern end of the scheme to the north of the A358 and Horton Cross roundabout. Habitats present included native species-rich hedgerow with abundant hawthorn, blackthorn and bramble, and lowland mixed deciduous woodland dominated by a canopy of oak. Figure 3-27 illustrates the type of habitat present at survey area 37.

3.2.135 The survey area covered approximately 1.71 kilometres of suitable dormouse habitats. As the hedgerow bordered most of the woodland block, an average hedgerow width of 5 metres has been taken, and assuming approximately 10 metres width of woodland surveyed, the total area of suitable habitat surveyed was estimated to be 1.0 hectare.



Figure 3-27 Survey area 37 habitat example

Nest tube and box surveys

3.2.136 Dormice were confirmed to be present within survey area 37, with the first evidence of dormouse being six adult dormice encountered on 24 May 2021. Across the whole survey season, evidence of dormouse was encountered in 14 of the 67 tubes/boxes; this represents 20.9% of the nest tubes/boxes deployed across the survey area. Individual dormice were encountered on 12 occasions, with a peak count of six for all individuals observed during May. No females with young were encountered in this area. A summary of the dormouse evidence encountered at survey area 37 is provided in Table 3-26.

Table 3-26 Dormouse evidence for survey area 37

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
5	22/09/2021	Dormouse nest comprising woven grass and brown leaves	Active but unoccupied dormouse nest observed during September checks only
6 (nest tube)	20/07/2021	Dormouse nest comprising green leaves	Active but unoccupied dormouse nest observed during July and August checks
6 (nest box)	22/09/2021	Dormouse nest comprising woven grass and brown leaves	Active dormouse nest observed during September with occupancy confirmed by a single, active, non-breeding juvenile male. Weight 18g
7	20/07/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during July checks only
8	24/05/2021	Dormouse nest comprising woven grass and brown leaves	Active dormouse nest observed during May checks only, with occupancy confirmed by a single, torpid, adult male. Weight 18g
13	24/06/2021	Dormouse nest comprising green leaves	Dormouse nest observed during June, July, August and September, with occupancy confirmed during June and August. June: Single, active, assumed dormouse observed leaving the nest before biometrics could be recorded August: Single, active, testes scrotal adult male. Weight 16g
15	22/09/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during September checks only

Nest tube / box number	Evidence first found	Nest description	Occupancy and activity description
27	24/05/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active dormouse nest observed during May checks only, with occupancy confirmed by a single, torpid, adult female. Weight 14g
33	24/06/2021	Dormouse nest comprising woven grass surrounded by green and brown leaves	Dormouse nest observed during June, July, August and September, with occupancy confirmed during June by a single, active, adult male. Weight 15g
48	24/06/2021	Dormouse nest comprising woven grass surrounded by brown leaves	Active but unoccupied dormouse nest observed during June, July and August checks
49	24/05/2021	Dormouse nest comprising green leaves with some woven grass	Active dormouse nest observed during May, June and July, with occupancy confirmed in May by a single, active, adult female. Weight 13.5g
50	24/05/2021	Dormouse nest comprising of tightly woven grass surrounded by brown and green leaves of mixed species	Active dormouse nest observed during May, June, July, August and September with occupancy confirmed in May and September. May: Single, active, adult male. Weight 18g. September: Single, active, non-breeding juvenile female. Weight 11g
52	24/05/2021	Dormouse nest comprising green leaves	Active dormouse nest observed during May and June checks, with occupancy confirmed in May by two, active, adult dormice. Male weight 15g. Female weight 15g
53	22/09/2021	Dormouse nest comprising green leaves	Active dormouse nest observed during September checks only, with occupancy confirmed by a single, active, assumed adult dormouse observed leaving the nest before biometrics could be recorded

3.2.137 Dormouse evidence was recorded within the southwest of the survey area, with the greatest concentration of evidence found within the southern hedgerow directly adjacent to the existing A358.

3.2.138 The peak adult count during the surveys was six dormice (during May) across the surveyed area, which represented approximately 1.0 hectare of suitable habitats within the woodland and adjacent hedgerows. This equates to an estimated population density of 6.0 adults per hectare. While it is recognised that this is likely to be an underestimate, it is largely in line with the Dormouse Conservation Handbook figures for estimated population density for the habitat types present at survey area 33; 1.3 adult dormice per hectare for hedgerow and 4-10 adult dormice per hectare for optimal woodland.

Summary of results

3.2.139 Of a total 2165 nest tube and boxes deployed, 427 (19.7% of nest tubes/boxes) were found to contain evidence of dormice, examples of the evidence found are shown in Figures 3-28, 3-29 and 3-30. A total of 136 adult dormice were encountered. The survey areas with the highest peak adult count were areas 16A and 19; each with a peak adult count of eight dormice. A summary of the completed dormouse surveys within each survey area is present in Table 3-27.



Figure 3-28 Dormouse nest in tube from survey area 26, August (left), dormouse nest with pink young from survey area 26, June (right).



Figure 3-29 Dormouse nest in tube from survey area 26, July (left). Torpid female, survey area 21, May (right).



Figure 3-30 Unoccupied dormouse woven nest, survey area 29, July (left) Adult male dormouse, survey area 13A, June (right).

Table 3-27 Summary table of dormouse evidence

Survey area	Dormouse present?	Percentage of tubes / boxes with dormouse evidence	Peak adult count	Estimated population density (per hectare)
6A	Yes	11.4	1	2.0
7A	Yes	13.6	2	6.5
10A	Yes	12.5	4	4.1
11*	No	-	-	-
12*	Yes	19.0	11	2.7
13A	Yes	9.68	3	6.3
13B*	Yes	14.0	3	3.7
16A	Yes	33.3	8	8.4
17	Yes	24.0	7	8.0
18	Yes	29.0	3	1.6
19	Yes	24.5	8	7.8
21	Yes	13.5	3	2.3
23	Yes	41.5	3	2.7
24	Yes	6.02	1	1.6
25	Yes	1.61	-	-
26	Yes	33.6	4	3.4
27	Yes	9.9	3	3.3
28	Yes	33.3	1	2.4
29	Yes	18.1	3	3.3
30	Yes	22.7	3	3.3
31	Yes	29.7	2	3.7
32	Yes	12.8	2	2.3
33	Yes	45.4	7	6.1
34	Yes	27.9	5	3.1
35	Yes	18.1	4	6.3
36	Yes	28.8	2	3.9
37	Yes	20.9	6	6.0

*Surveys incomplete due to land access restrictions earlier in the survey season. Surveys to be completed in 2022.

4 Conclusions

- 4.1.1 In total, 27 survey areas were subject to surveys for hazel dormice. As described in Section 2.3, a series of limitations were encountered during the surveys, most notably, a delay in land access and the removal of nest tubes and boxes during September to allow for hedgerow management. In combination with the previous years of surveys, the survey results presented within this report are considered to form a reliable baseline and the limitations described are not considered to be significant for the purposes of the assessment of the impact of the scheme upon hazel dormice.
- 4.1.2 In summary, a total of 2165 nest tubes and boxes were deployed throughout the scheme study area. Following the completion of nest tube and box surveys, 26 out of 27 surveys areas had confirmed presence of dormouse. The one survey area without confirmed presence had a delayed start to its survey therefore the survey is due to be completed in 2022 and dormouse may yet be recorded.
- 4.1.3 Evidence of dormouse was encountered in 427 of the nest tubes/boxes, which represents 19.7% of the nest tubes/boxes deployed. Dormouse evidence was recorded throughout the scheme, with the greatest concentration of evidence found within the hedgerow and woodland belts directly adjacent to the existing A358. Survey area 33, towards the south of the scheme, encountered the highest percentage of dormouse evidence, with 45% of tubes/boxes supporting evidence.
- 4.1.4 In total, 136 adult dormice were encountered between May and October 2021. The survey areas with the highest peak adult count were areas 16A to the west of Capland and 19 to the east of Ashill; each with a peak adult count of eight dormice. It is however recognised that the number of individuals encountered in nest tubes under-represents the presence of dormice within a surveyed area, therefore the percentage of tubes/boxes where evidence is encountered is a better indication of the prevalence of dormouse across the scheme.
- 4.1.5 The impact assessment upon the populations within these survey areas and any mitigation measures required will be fully detailed within Chapter 8 of the ES, and the results of the 2022 surveys included in an addendum to the ES.

Abbreviations List

Please refer to ES Report Chapter 17 Abbreviations.

Glossary

Please refer to ES Report Chapter 18 Glossary.

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Appendices

Appendix A Hazel dormouse biological records summary table

Date of observation	Site/location	Grid reference	Abundance
24/12/2013	Blackbrook Pavilion/ Blackbrook Leisure Centre, Taunton	ST248237	Signs; Count [1]
06/05/2015	Blackbrook	ST25002400	Present; Count [1]; Evidence of dormouse [nest]
26/08/2015	-	ST251238	Count [1]
01/09/2015	-	ST253238	present; Count [1]
24/09/2015	-	ST253243	Count [5]
28/10/2015	-	ST255246	Count [3]
29/10/2015	A303 Near Horton	ST32521428	Present; Count [1]; Evidence of dormouse [live specimen]
29/05/2016	-	ST313163	Count [1]
26/10/2016	Blackbrook Pavilion/ M5 Road Verge	ST249235	Present; Count [1]; Evidence of dormouse [nest]
22/05/2017	A358	ST331170	Present; Count [1]; Evidence of dormouse [live specimen]
22/05/2017	Taunton To Southfields	ST307185	Present; Count [1]; Evidence of dormouse [live specimen]
25/05/2017	A358	ST295195	Present; Count [1]; Evidence of dormouse [live specimen]
25/05/2017	A358	ST301187	Present; Count [1]; Evidence of dormouse [live specimen]
29/05/2017	Taunton To Southfields	ST293198	Present; Count [1]; Evidence of dormouse [live specimen]
12/06/2017	A358	ST331170	Present; Count [1]; Evidence of dormouse [live specimen]
12/06/2017	A358	ST331170	Present; Count [1]; Evidence of dormouse [live specimen]
12/06/2017	A358	ST301187	Present; Count [1]; Evidence of dormouse [live specimen]
13/06/2017	A358	ST294192	Present; Count [1]; Evidence of dormouse [live specimen]
23/06/2017	A358	ST242228	Present; Count [1]; Evidence of dormouse [live specimen]
24/07/2017	A358	ST246232	Present; Count [1]; Evidence of dormouse [live specimen]
01/09/2017	Broadway	ST3146415383	Count [1]
01/09/2017	Broadway	ST3146415383	Nest; Count [3]
13/09/2017	Taunton To Southfields	ST247233	Present; Count [1]; Evidence of dormouse [live specimen]
25/09/2017	A358	ST294195	Present; Count [1]; Evidence of dormouse [live specimen]

Date of observation	Site/location	Grid reference	Abundance
26/09/2017	A358	ST283219	Present; Count [1]; Evidence of dormouse [live specimen]
27/09/2017	A358	ST264231	Present; Count [1]; Evidence of dormouse [live specimen]
17/10/2017	A358	ST292203	Present; Count [1]; Evidence of dormouse [live specimen]
17/10/2017	A358	ST242228	Present; Count [1]; Evidence of dormouse [live specimen]
08/11/2017	Site	ST245232	Present; Count [1]; Evidence of dormouse [live specimen]
09/11/2017	Site	ST292200	Present; Count [1]; Evidence of dormouse [live specimen]
09/11/2017	Site	ST263231	Present; Count [1]; Evidence of dormouse [live specimen]
10/11/2017	Site	ST272225	Present; Count [1]; Evidence of dormouse [live specimen]
21/12/2017	Barrington Hill National Nature Reserve	ST300171	Present; Count [1]; Evidence of dormouse [nest]

Appendix B Hazel dormouse biological records plan



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- LEGEND**
- ECOLOGY SURVEY ZONE
 - 2KM DATA SEARCH AREA
 - SERC DORMOUSE RECORD**
 - HAZEL DORMOUSE

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RESIDUAL RISKS (REFERENCE SHALL ALSO BE MADE IN THE DESIGN HAZARD LOG)

CONSTRUCTION	NONE
MAINTENANCE / CLEANING	NONE
USE	NONE
DECOMMISSIONING / DEMOLITION	NONE

Rev.	Date	Description	By	Chk'd	App'd	Auth'd
P02	20/05/22	ISSUE FOR INFORMATION	LL	MA	JS	SV

Suitability: S2
Drawing Status: SUITABLE FOR INFORMATION

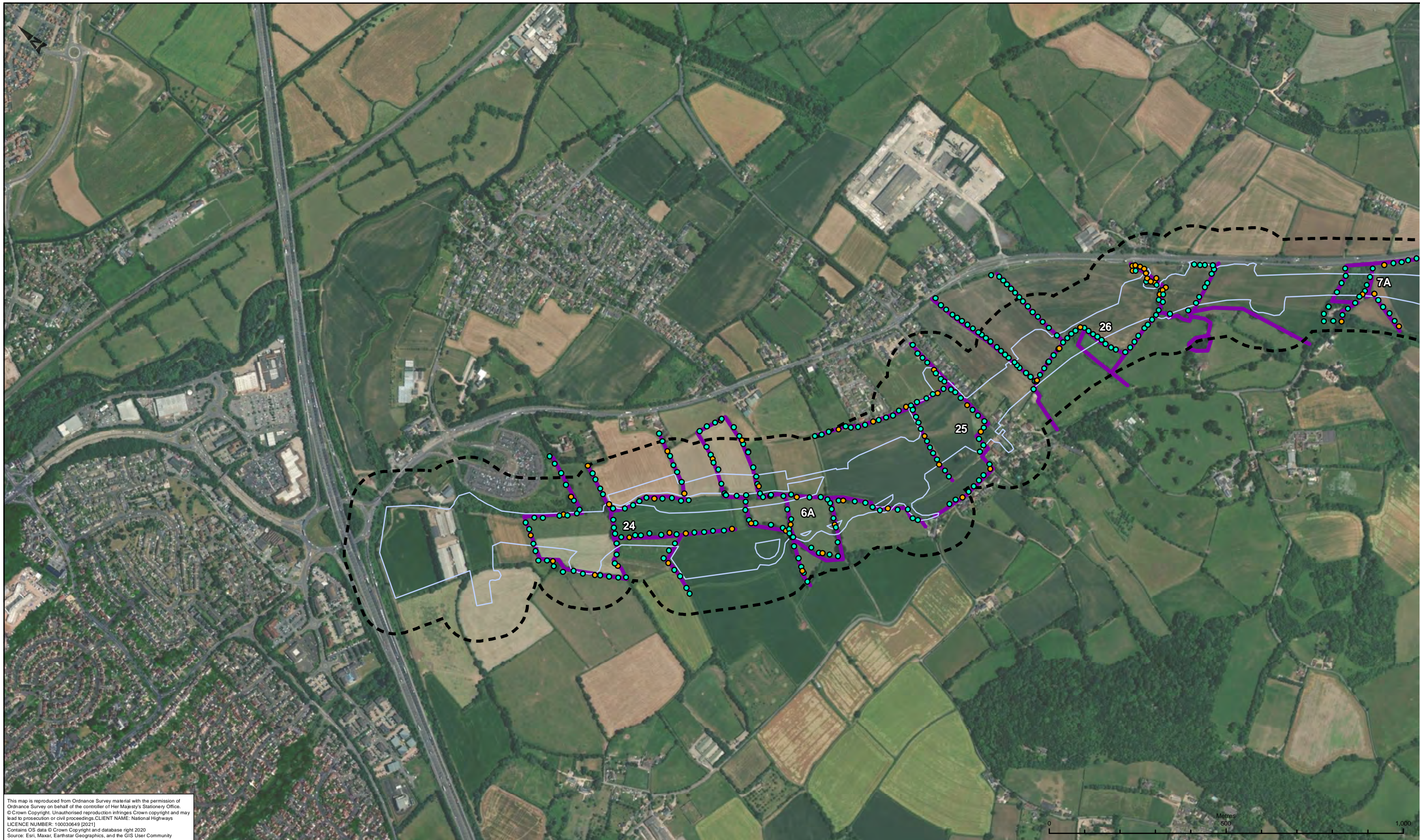
TAYLOR WOODROW
together @ VINCI

ARUP **RAMBOLL**

Client: **national highways**

Project Title: A358 TAUNTON TO SOUTHFIELDS DUALLING SCHEME					
Drawing Title: BIOLOGICAL RECORDS - HAZEL DORMOUSE					
Scale: 1:60,000	By: LL	Checked: MA	Approved: JS	Authorised: SV	
Original Size: A3	Date: 20/05/22	Date: 20/05/22	Date: 20/05/22	Date: 20/05/22	Date: 20/05/22
Drawing Number: HE551508 - ZZ	Originator: ARP	Volume: VES	Revision: P02		
Location: ZZ	Type: -DR	Role: LE	Number: 000206		

Appendix C Hazel dormouse survey area plan

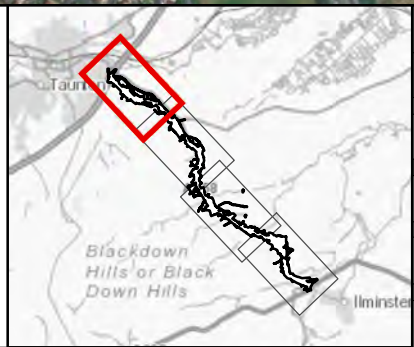


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LEGEND

- NEST BOX
- NEST TUBE
- ECOLOGY SURVEY ZONE
- ECOLOGY SURVEY ZONE 100M BUFFER
- SURVEY AREA
- 1 SURVEY AREA ID NUMBER

Note: in some instances survey areas were extended beyond the 100m survey buffer where of relevance to the impact assessment i.e. in instances where dormouse habitats would potentially be isolated by habitat fragmentation associated with construction of the scheme



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION	
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USE	NONE
DECOMMISSIONING / DEMOLITION	NONE

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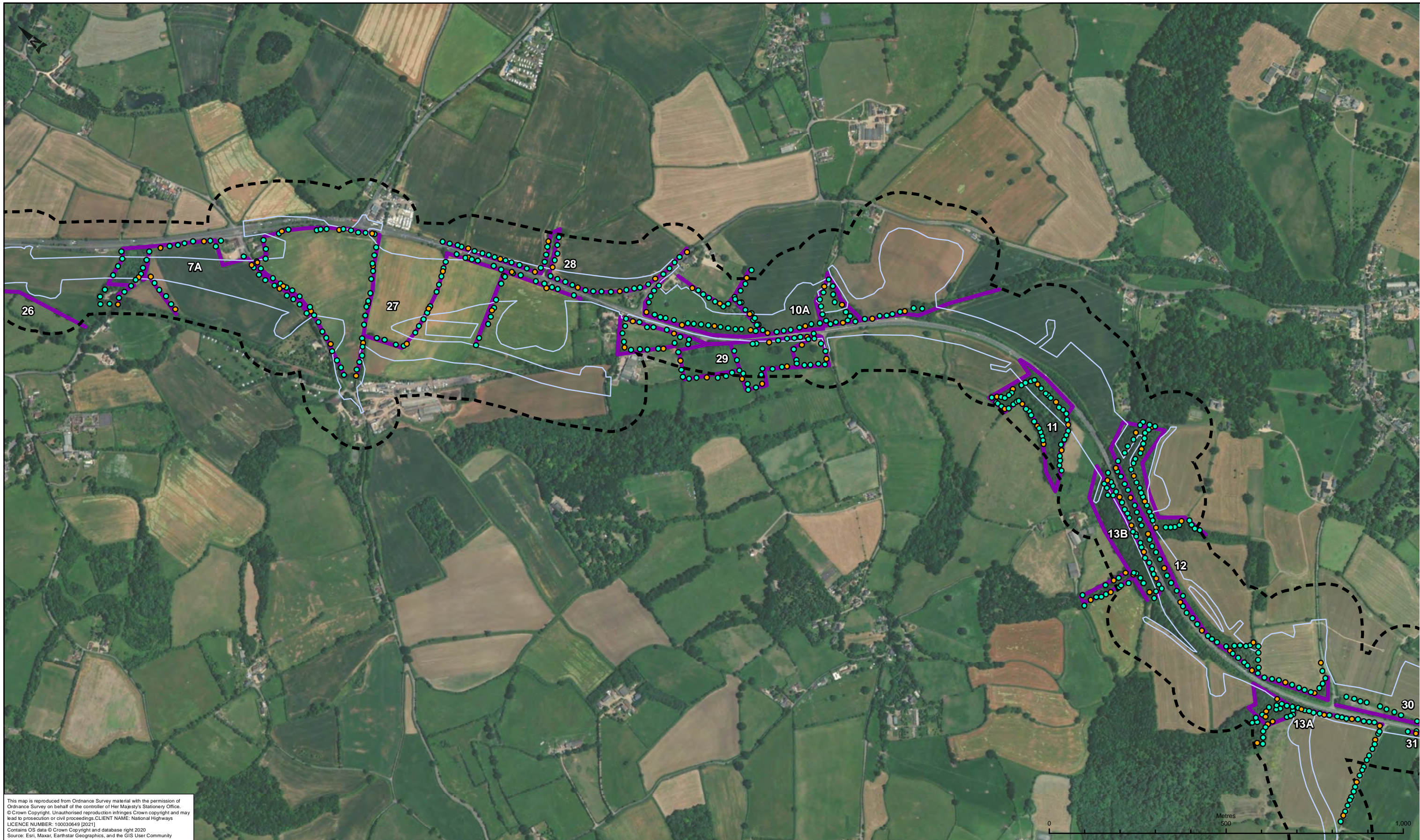
Suitability: S2
Drawing Status: SUITABLE FOR INFORMATION

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national highways

Project Title		A358 TAUNTON TO SOUTHFIELDS DUALLING SCHEME			
Drawing Title		HAZEL DORMOUSE SURVEY AREAS SHEET 1 OF 4			
Scale	By	Checked	Approved	Authorised	
1:10,000	LL	MA	JS	SV	
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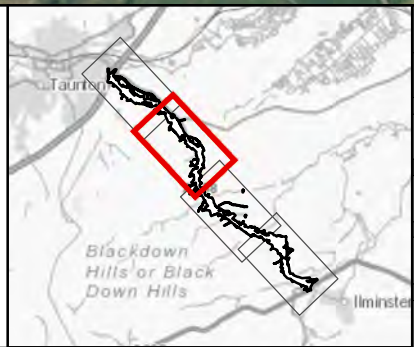


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LEGEND

- NEST BOX
- NEST TUBE
- ECOLOGY SURVEY ZONE
- ECOLOGY SURVEY ZONE 100M BUFFER
- SURVEY AREA
- 1 SURVEY AREA ID NUMBER

Note: in some instances survey areas were extended beyond the 100m survey buffer where of relevance to the impact assessment i.e. in instances where dormouse habitats would potentially be isolated by habitat fragmentation associated with construction of the scheme



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MAINTENANCE / CLEANING	NONE
USE	NONE
DECOMMISSIONING / DEMOLITION	NONE

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Suitability: S2
Drawing Status: SUITABLE FOR INFORMATION

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Drawing Title: HAZEL DORMOUSE SURVEY AREAS SHEET 2 OF 4					
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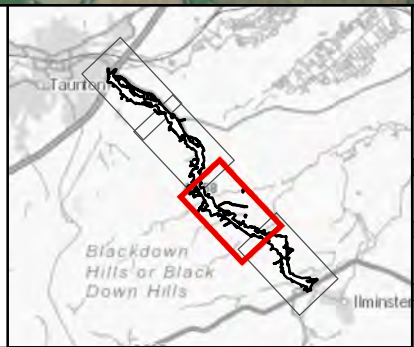


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LEGEND

- NEST BOX
- NEST TUBE
- ECOLOGY SURVEY ZONE
- ECOLOGY SURVEY ZONE 100M BUFFER
- SURVEY AREA
- SURVEY AREA ID NUMBER

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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION	
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CONSTRUCTION	NONE
MAINTENANCE / CLEANING	NONE
USE	NONE
DECOMMISSIONING / DEMOLITION	NONE

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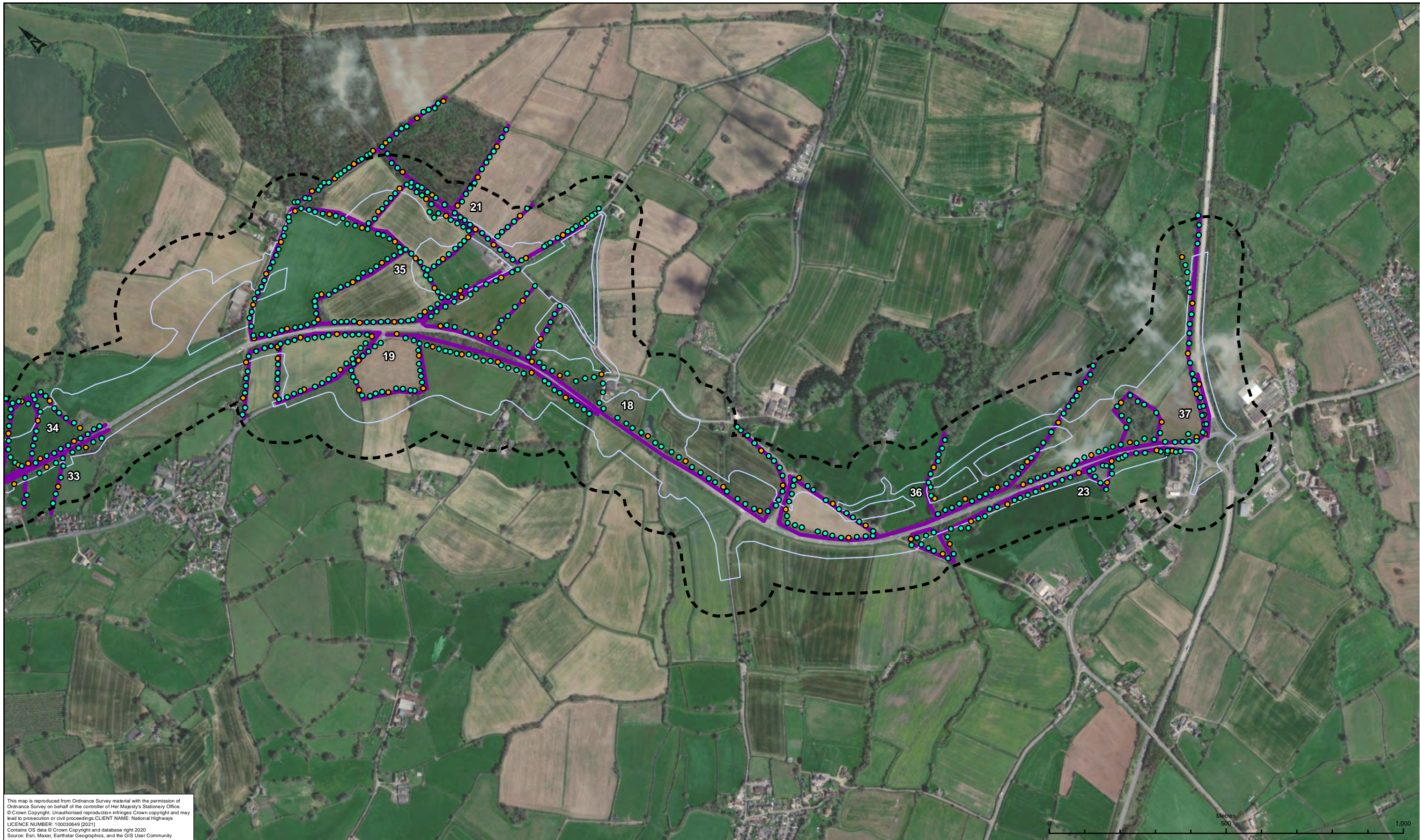
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Scale: 1:10,000	By: LL
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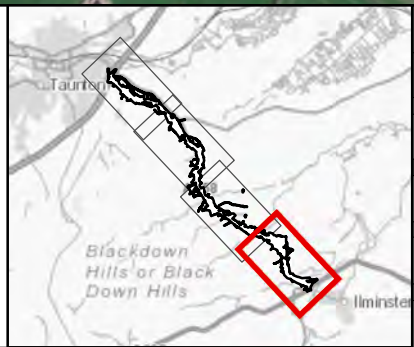


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LEGEND

- NEST BOX
- NEST TUBE
- ECOLOGY SURVEY ZONE
- ECOLOGY SURVEY ZONE 100M BUFFER
- SURVEY AREA
- 1 SURVEY AREA ID NUMBER

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CONSTRUCTION	NONE
MAINTENANCE / CLEANING	NONE
USE	NONE
DECOMMISSIONING / DEMOLITION	NONE

Rev.	Date	Description	By	Chk'd	App'd	Auth'd
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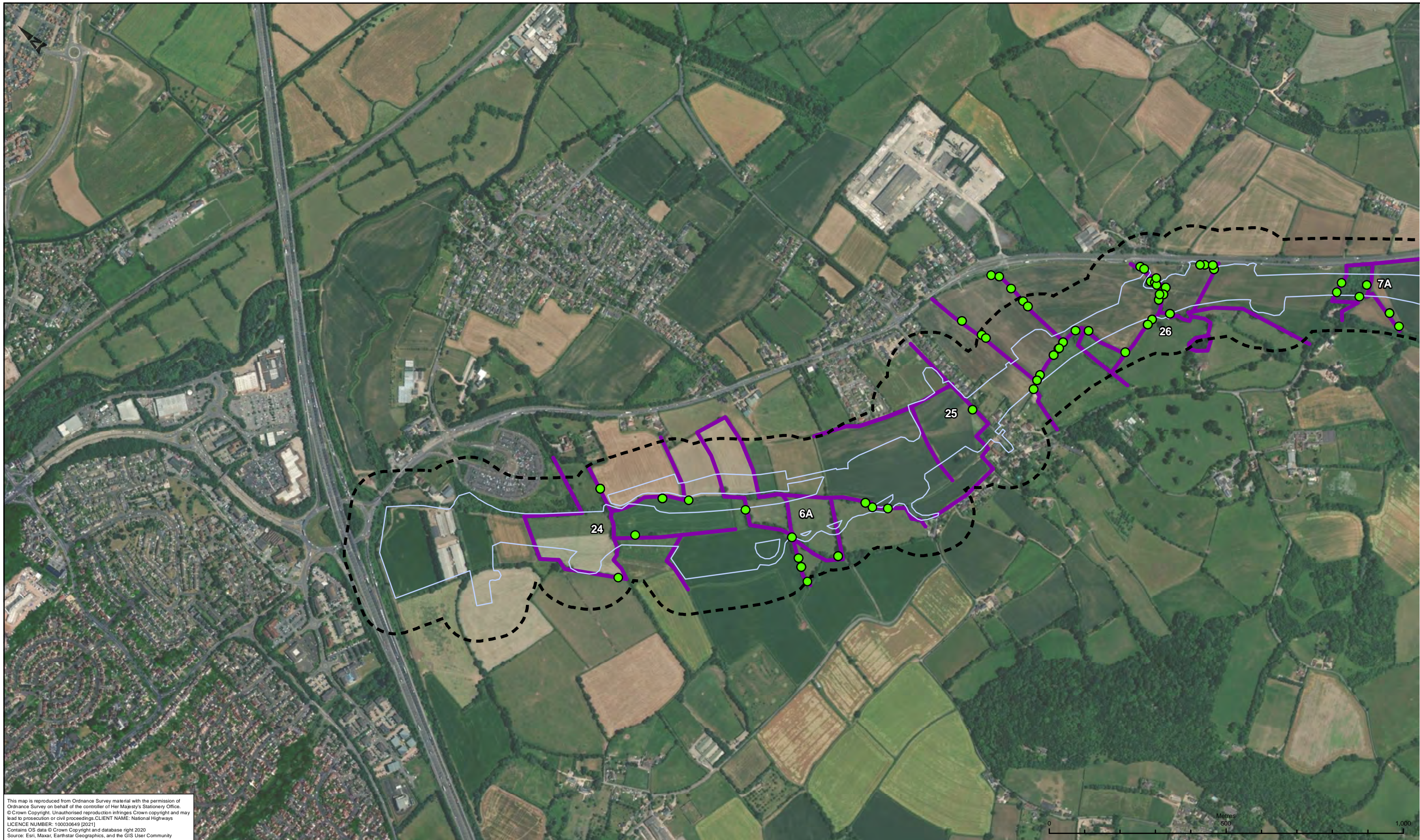
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Drawing Title: HAZEL DORMOUSE SURVEY AREAS SHEET 4 OF 4					
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Appendix D Hazel dormouse survey results plan

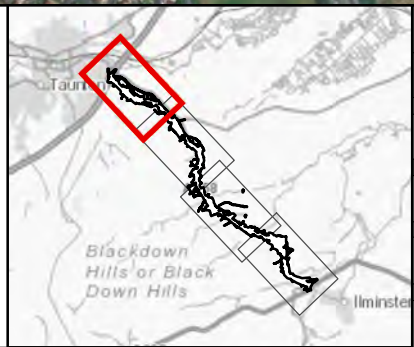


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LEGEND

- CONFIRMED DORMOUSE PRESENCE
- ECOLOGY SURVEY ZONE
- ECOLOGY SURVEY ZONE 100M BUFFER
- SURVEY AREA
- 1 SURVEY AREA ID NUMBER

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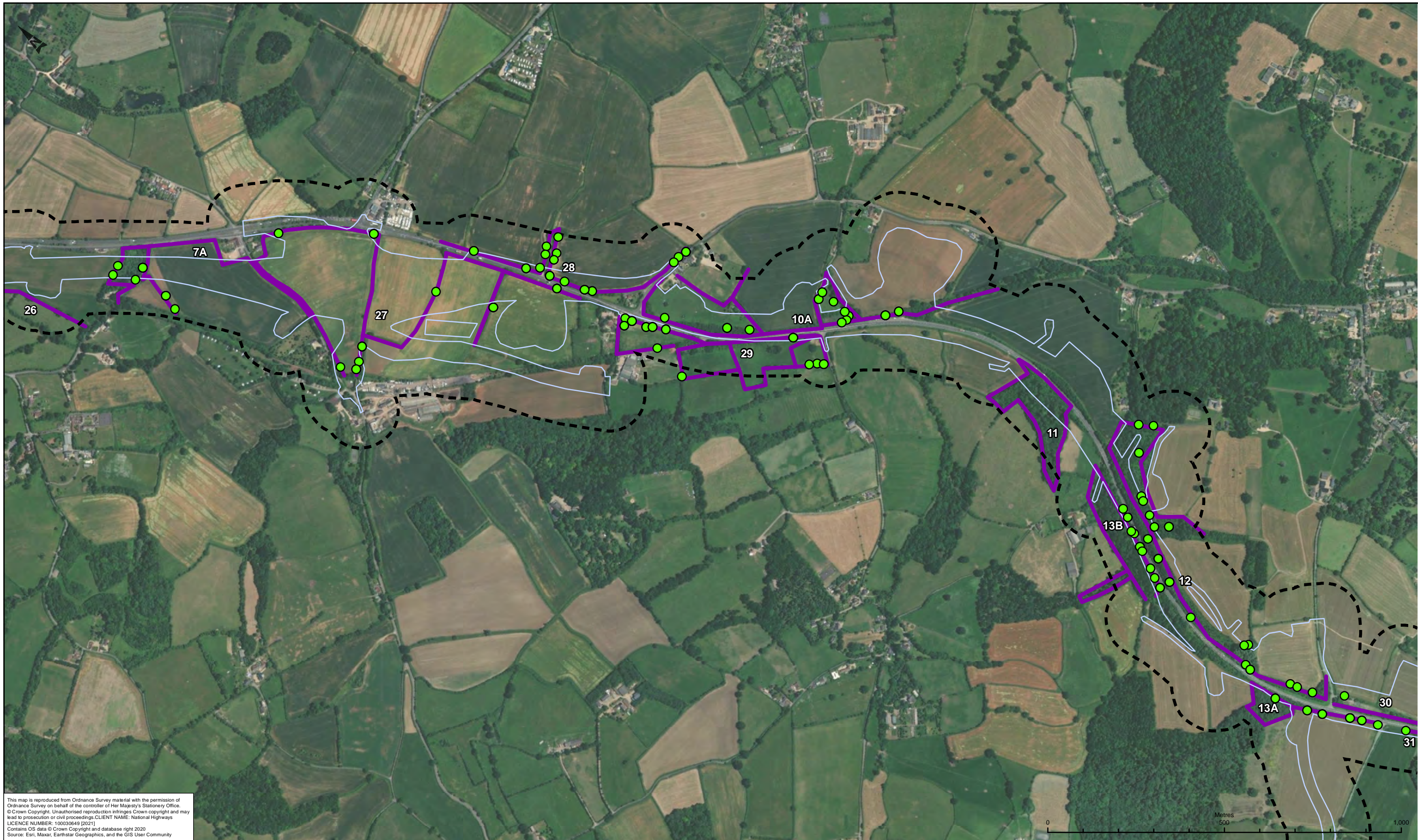
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Drawing Status: SUITABLE FOR INFORMATION

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Drawing Title		HAZEL DORMOUSE SURVEY RESULTS SHEET 1 OF 4			
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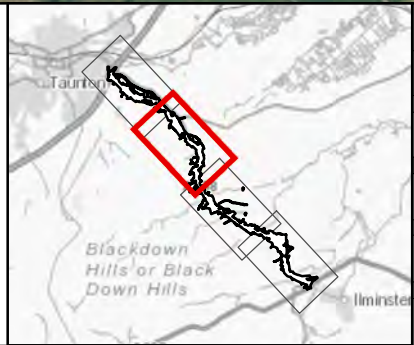


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LEGEND

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- ECOLOGY SURVEY ZONE
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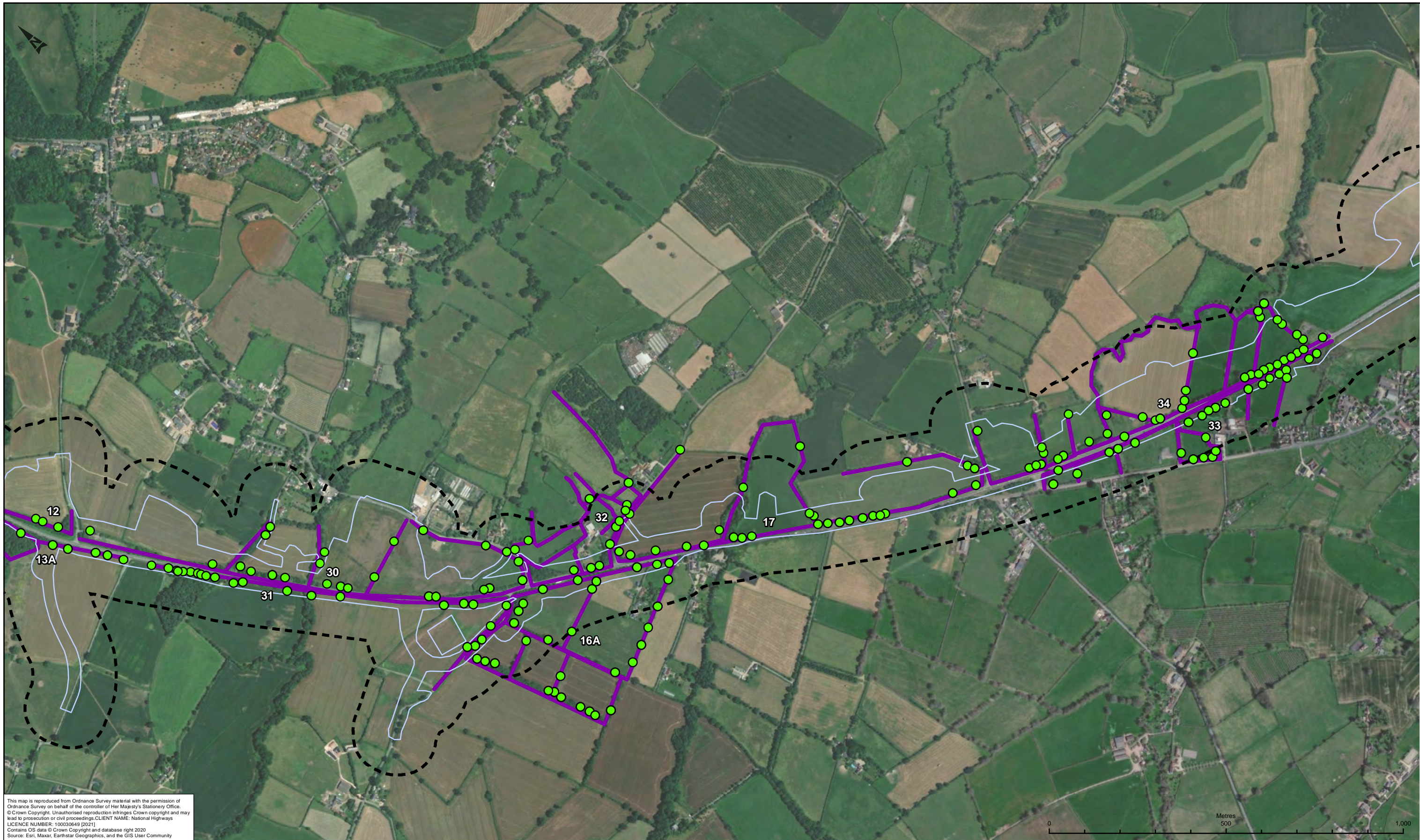
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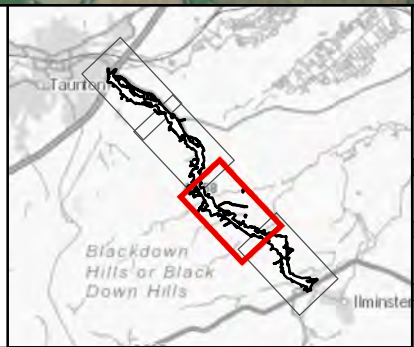


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LEGEND

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MAINTENANCE / CLEANING	NONE
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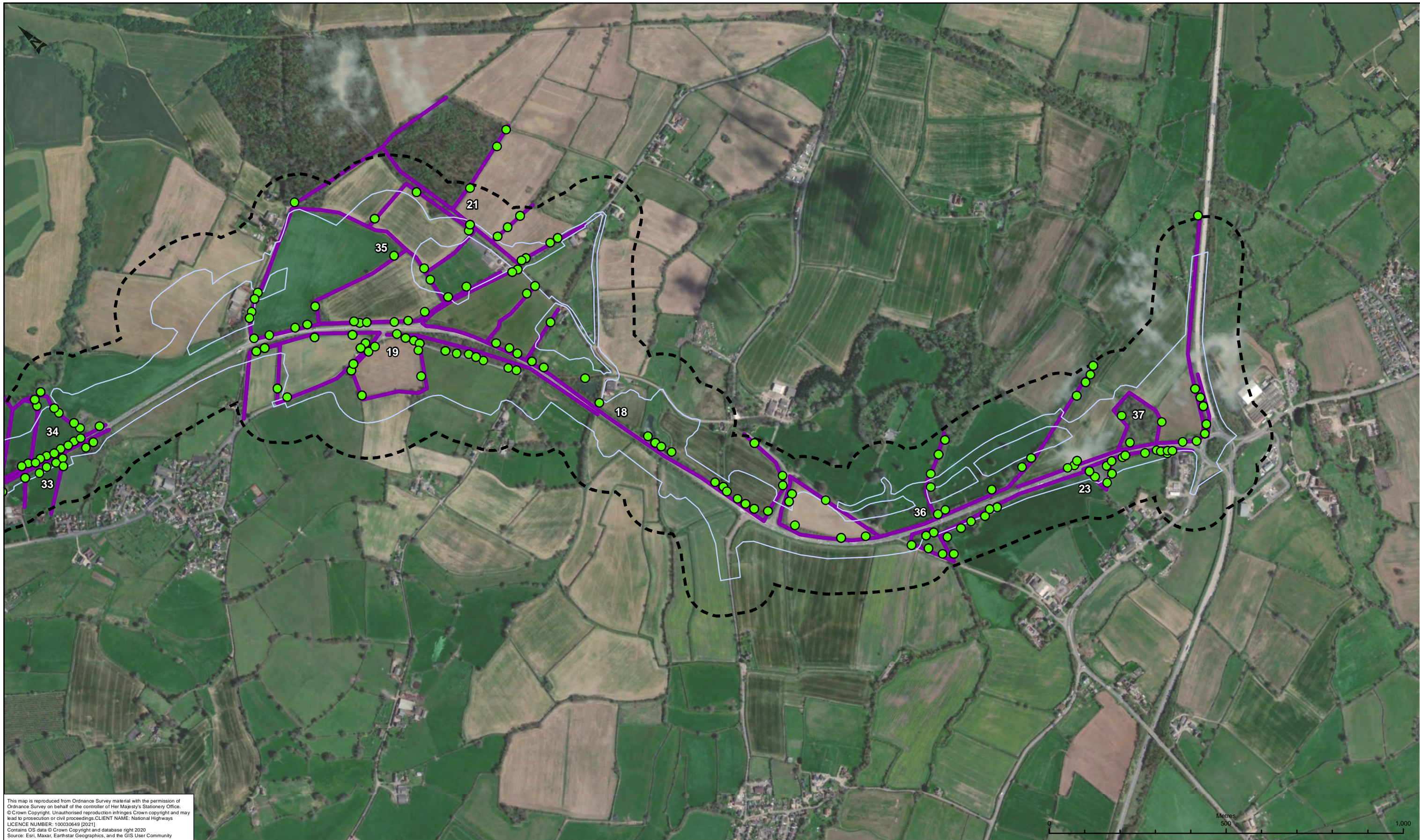
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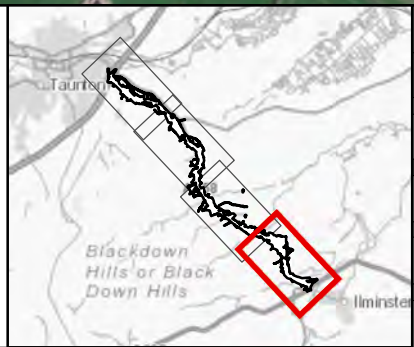


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Drawing Title		HAZEL DORMOUSE SURVEY RESULTS SHEET 4 OF 4			
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Location	Type	Role	Number		

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