



9.4 DORMOUSE SURVEY REPORT



West Sussex County Council

A29 REALIGNMENT

Dormouse Survey Report





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Dormouse Survey Report

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EXECUTIVE SUMMARY

West Sussex County Council (WSCC) commissioned WSP to undertake a survey to establish the presence or likely absence of hazel dormouse *Muscardinus avellanarius* in relation to the realignment of the A29 in Arun District, West Sussex, in two distinct phases. This report considers Phase 1, which would see the construction of a new single carriageway to the south of Eastergate Lane, connecting the A29 Fontwell Avenue to the B2233 Barnham Road via a new junction.

A Preliminary Ecological Appraisal (PEA) was undertaken by WSP in 2018, including a Survey Area of up to 250m surrounding the Scheme's maximum extent of works. The PEA and associated desk study identified suitable foraging and nesting habitat for dormouse.

A dormouse survey, comprising a nest tube survey of suitable habitat within the Survey Area, was completed in accordance with good practice guidance (English Nature, 2006) between May and September 2019. One hundred nest tubes were installed at approximately 20m spacing within suitable habitat within the Survey Area, comprising hedgerow, woodland and woodland edge, attached to branches of a variety of native woody species.

No dormice or evidence of dormice were found within any nest tube within the Survey Area; therefore, dormice can be considered likely absent from the Site. The proposed development is therefore compliant with regards to legislation and planning policy pertaining to dormice. Due to this, no avoidance, mitigation or compensation measures focussed specifically on this species are required.

1. INTRODUCTION

1.1. PROJECT BACKGROUND

- 1.1.1. West Sussex County Council (WSCC) is seeking to undertake the realignment of the A29 in Arun District, West Sussex, in two distinct phases. Phase 1 would see the construction of a new single carriageway to the south of Eastergate Lane, connecting the A29 Fontwell Avenue to the B2233 Barnham Road via a new junction. The new carriageway will also feature a 3m wide cycleway and footpath, a 2.5m central island, four uncontrolled crossings and potential noise barriers. The Phase 1 works described above are hereafter referred to as the 'Proposed Development'. The location of the Proposed Development, hereafter referred to as 'the Site', is shown on Figure 1.
- 1.1.2. It is understood that WSCC is aiming to submit a detailed planning application for the Proposed Development, supported by an Environmental Statement.
- 1.1.3. Phase 2 of the proposed A29 realignment, for land south of Barnham Road, is currently in the early stages of the design process and is likely to be subject to a separate planning application.
- 1.1.4. The Survey Area is set within a semi-rural location amongst a series of small villages and runs through a selection of semi-natural and modified habitats, dominated by orchard in the north and west, with grassland habitats to the east and south. The wider landscape is characterised by a similar patchwork of villages and arable land. The south coast at Bognor Regis lies approximately 5km to the south, where the coastline comprises a sand and gravel intertidal zone bordered by a dense urban area. The Survey Area lies within the jurisdiction of West Sussex County Council and of Arun District Council.

1.2. ECOLOGICAL BACKGROUND

- 1.2.1. A Preliminary Ecological Appraisal (PEA) was undertaken by WSP in 2018 of the Proposed Development, plus a 250m buffer. (WSP, 2018).
- 1.2.2. A large number of hazel dormouse records were returned from within 2km of the Site (112 in total), all of which relate to the same location on repeated occasions since 2008. The location is within woodland to the south of Slindon, approximately 1km north of the Survey Area. Dormouse nest tubes were recorded within woody vegetation in the north of the Phase 2 section, indicating ongoing or previous survey work, however, the results of this survey work were not available for this report.
- 1.2.3. During the Phase 1 habitat survey, suitable habitat including orchard, hedgerows and continuous scrub was identified as having the potential for foraging, nest creation and hibernation.
- 1.2.4. As the PEA identified the presence of nearby records and suitable foraging and nesting habitat for dormice, further surveys were recommended.

1.3. BRIEF AND OBJECTIVES

- 1.3.1. WSCC commissioned WSP to complete a dormouse survey in accordance with good practice guidance (English Nature (now Natural England), 2006) to:
- establish whether dormice are present or likely absent from the Site; and
 - if present, evaluate the Site for dormice and make recommendations as to how proposals should account for dormice with respect to legislation, planning and biodiversity policy.

1.3.2. The results of this survey, and subsequent recommendations, are included within this report.

2. METHODS

2.1. OVERVIEW

2.1.1. To establish the presence or likely absence of dormouse from the Site, dormouse tubes were installed within suitable habitat on the Site in April 2019 and checked bi-monthly from May to September 2019 (inclusive). The survey work was completed in accordance with current good practice guidance (EN, 2006).

2.2. DORMOUSE SURVEY

2.2.1. One hundred dormouse tubes were installed within the Site on the 4 April 2019. Nest tube locations are shown on Figure 2. Nest tubes were installed at approximately 20m spacing within suitable habitat within the Site comprising hedgerow, woodland and woodland edge, attached to branches of a variety of native woody species. Species to which tubes were attached included bramble *Rubus fruticosus* agg., hawthorn *Crataegus monogyna*, dogwood *Cornus sanguinea*, willow *Salix fragilis*, field maple *Acer campestre*, elder *Sambucus nigra*, hornbeam *Carpinus betulus* and oak *Quercus robur*. The survey was designed to ensure effective coverage of the Site as a whole.

2.2.2. All nest tubes on the Site were surveyed bi-monthly (with points accrued for the month before and the month of the survey in line good practice guidance (EN, 2006) under suitable weather conditions between April 2019 and September 2019. This duration of survey ensured sufficient points (>20) were achieved to demonstrate presence or likely absence in accordance with best practice guidance (EN, 2006). During each survey every tube was checked for presence of dormice or evidence of dormice, for example characteristic nests or opened nuts.

2.2.3. Table 1 below sets out the number of points available for each month.

Table 1 - Index of probability

Month	Probability score
April	1
May	4
June	2
July	2
August	5
September	7
October	2
November	2

2.3. DATES OF SURVEY AND PERSONNEL

The dormouse survey was completed by an experienced surveyor, holding a Natural England survey licence (Licence number: 2019-39100-CLS-CLS).

- 2.3.1. The lead surveyor has four years' experience of ecological survey, including extensive dormouse survey experience and has held a dormouse survey licence since 2019.
- 2.3.2. Dates of survey are summarised in Table 2 below.

Table 2 - Dates of survey

Survey	Set Up	Survey 1	Survey 2	Survey 3
Date	04 April 2019	30 May 2019	31 July 2019	30 September 2019

2.4. EVALUATION

- 2.4.1. The importance of the Site for dormice was evaluated using the CIEEM guidance (CIEEM, 2018). This guidance recommends that the evaluation is made with reference to a geographical frame of reference as follows:

- International and European;
- National (England);
- Regional (South-East England);
- Metropolitan, County (West Sussex), vice county or other local authority-wide area;
- Local (Chichester); and
- Application Site (Survey Area).

- 2.4.2. To inform the assessment in this report the results of the presence/likely absence survey were considered in the context of the distribution and abundance of this species locally and nationally, the quality of habitat present, and the abundance of this species on other sites. Sites where dormice are considered likely to be absent, are considered to be of negligible importance for dormice.

2.5. NOTES AND LIMITATIONS

- 2.5.1. During the surveys five dormouse tubes were not checked on one occasion. This was due to the growth in vegetation surrounding the tubes resulting in them being unable to be located. These tubes were previously located and checked in the May survey, and again during the September survey, once the vegetation had receded. Guidance suggests a minimum of 50 tubes per site, as 100 tubes were deployed and the missing tubes subsequently checked, this is not deemed a limitation to the survey results.

3. RESULTS

3.1. RESULTS OF DORMOUSE SURVEY

- 3.1.1. No dormice or evidence of dormice were found within any nest tube on the Site; therefore, dormice can be considered likely absent from the Site. The probability index score accrued during the survey period is summarised in Table 3 below. Raw Data is included in Appendix A.
- 3.1.2. Although no dormouse nests were recorded, the second survey visit reported six active *Apodemus* sp.¹ nests in tubes numbered 2, 11, 13, 16, 20 and 27.

Table 3 - Dormouse presence/likely absence probability index results scores

Month	Index of Probability (based on 50 tubes)	Survey results	Points Awarded
April	1	Not surveyed – inferred absence	1
May	4	Absence	4
June	2	Not surveyed – inferred absence	2
July	2	Absence	2
August	5	Not surveyed – inferred absence	5
September	7	Absence	7
Total Available:	21	Total Awarded:	21

¹ Leaf litter nests were recorded throughout the surveys; however, they could not be identified as either wood mouse *Apodemus sylvaticus* or yellow necked mouse *Apodemus flavicollis* due to the absence of individuals present. Therefore, mouse evidence is referred to as *Apodemus spp.*

4. IMPLICATIONS FOR DEVELOPMENT

4.1. OVERVIEW

- 4.1.1. As dormice are considered likely absent from the Site relevant legislation and planning policy is included below for information only and does not place constraints upon the Proposed Development.

4.2. LEGAL COMPLIANCE

- 4.2.1. Dormice are afforded a high level of protection under the Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitat Regulations'), the legislation means that it is an offence to:
- *'Deliberately capture, injure or kill a wild dormouse;*
 - *Deliberately disturb wild dormice; 'disturbance of animals includes in particular any disturbance which is likely:*
 - (a) to impair their ability —
 - (i) to survive, to breed or reproduce, or to rear or nurture their young; or
 - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
 - (b) to affect significantly the local distribution or abundance of the species to which they belong.'
 - *Damage or destroy a breeding site or resting place used by this species.'*
- 4.2.2. Protection is also afforded under the Wildlife and Countryside Act 1981 (as amended) with respect to disturbance of animals when using places of shelter, and obstruction of access to places of shelter.
- 4.2.3. Due to the high level of protection afforded to dormice and their habitat, mitigation for this species is governed by a strict licensing procedure administered by Natural England (normally, planning permission must be obtained before a licence can be sought).
- 4.2.4. The dormouse is also listed as a Species of Principal Importance (SPI) for the Conservation of Biodiversity in England in accordance with Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Under Section 40 of the NERC Act (2006) public bodies (including local planning authorities) have a duty to have regard for the conservation of SPI when carrying out their functions, including determining planning applications.
- ### 4.3. PLANNING POLICY COMPLIANCE
- 4.3.1. At the national level the National Planning Policy Framework (2019) forms the basis for planning system decisions with respect to conserving and enhancing the natural environment, including dormice; the ODPM circular 06/2005 also provides supplementary guidance, including confirmation that *'the presence of a protected species is a material consideration when a planning authority is considering a development proposal'*.
- 4.3.2. The NPPF sets out, amongst other points, how at an overview level the *'planning system should contribute to and enhance the national and local environment by:*
- *...recognising the wider benefits of ecosystem services; and*

- *minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures...*

4.3.3. A list of principles which local planning authorities should follow when determining planning applications is included in the NPPF, and includes the following:

- *'if significant harm resulting from a development cannot be avoided...adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- *- ...opportunities to incorporate biodiversity in and around developments should be encouraged;*
- *- planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland...unless the need for, and benefits of, the development in that location clearly outweigh the loss...'*

4.3.4. At a local level Policy, '17.4 – Development & Biodiversity' of the Adopted Arun Local Plan (2011 – 2031) (July 2018), states:

- *'All development should enhance the biodiversity of the site and the surrounding area by creating new habitats or improving existing ones. In certain circumstances, a new resource should be provided which is of at least equivalent value, where possible, to a site or feature which is lost as a result of development. This could include the creation of a new habitat on the site or elsewhere if this is more appropriate. However, in general, the loss of habitats should be strongly resisted.*
- *- All redevelopment/refurbishment schemes and the existing historic structures and habitats affected by development, should be screened for use by protected species (such as bats) if these opportunities are known or believed to be so used. There can often be no obvious signs that these species are present, and as a result it may require expert knowledge and experience to be able to determine their presence.*
- *- Properties that contain these protected species will require the applicant to undertake additional work specific to the legal protection that they are offered. This includes the preparation of surveys and appropriate responsive designs. Property owners are also required to take extra care during the development phase of any project and plan for the effective management of the species after construction has finished.*
- *- All developments should have regard to Natural England's standing advice for protected species which clearly outlines what considerations must be taken into account when designing development schemes, in the interests of preserving and enhancing biodiversity.'*

5. RECOMMENDATIONS AND CONCLUSION

5.1. AVOIDANCE AND MITIGATION MEASURES

- 5.1.1. As dormice are considered likely absent from the Site no avoidance, mitigation or compensation measures focussed specifically on this species are required.

5.2. ECOLOGICAL ENHANCEMENT MEASURES

- 5.2.1. As dormice are considered likely absent from the Site no enhancement measures specifically targeted at this species are considered necessary. However, where desk study records show dormouse presence within 1km of the site, there are opportunities for ecological enhancement; which would benefit a range of biodiversity, including dormouse, so these should be considered. For example, native fruiting shrub species could be incorporated within any new planting associated with the Proposed Development (see Appendix B), so should dormice colonise the area in future suitable habitat will be available. This would be in accordance with NPPF (2019) which encourages biodiversity gain where possible within developments.

6. REFERENCES

6.1. PROJECT REFERENCES

- WSP (2018) Preliminary Ecological Appraisal – A29 Realignment.

6.2. TECHNICAL REFERENCES

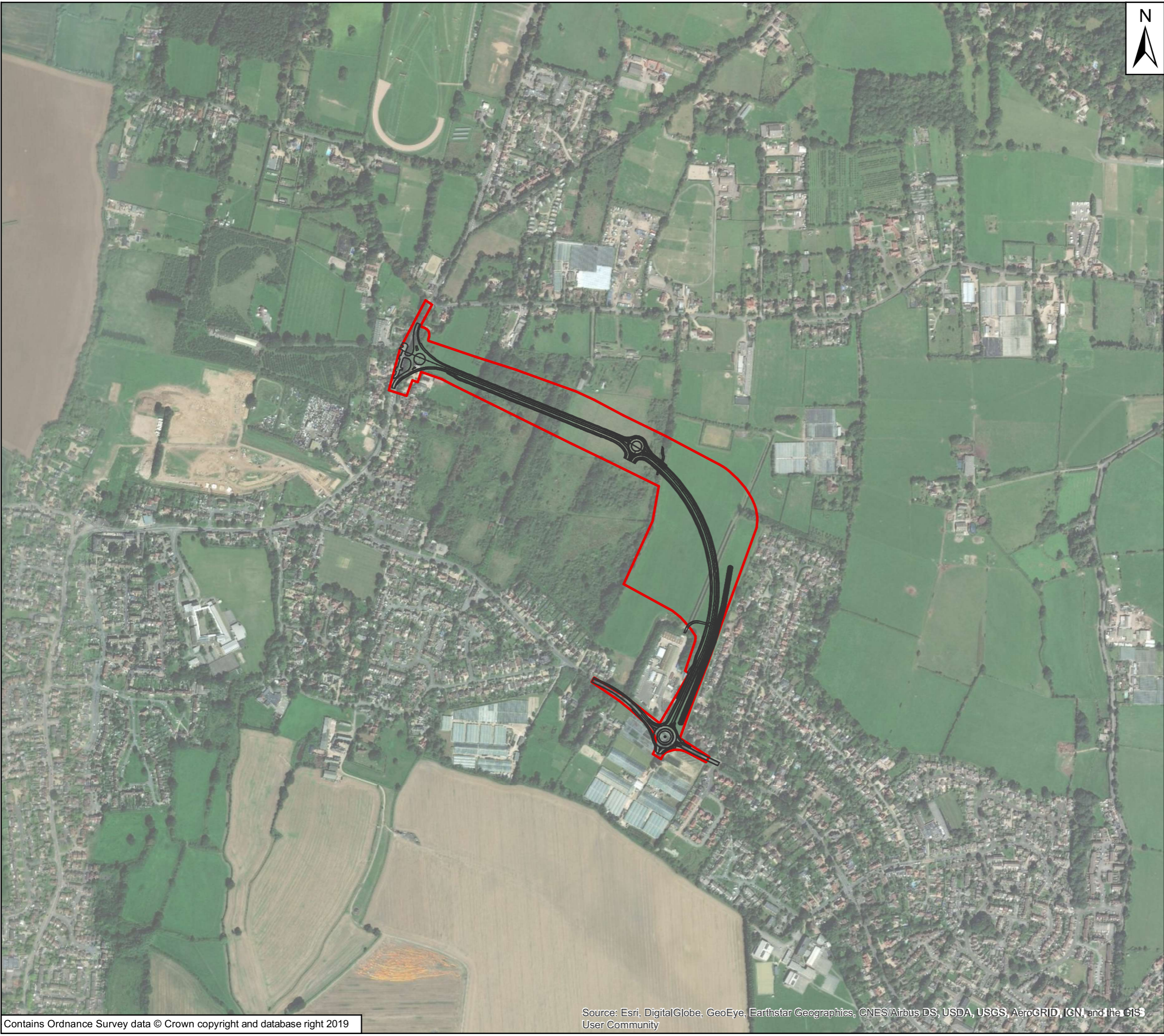
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- Adopted Arun Local Plan (2011 – 2031) (July 2018). Chapter 17: Natural Environment, 17.4 – Development & Biodiversity (17.4.1 -17.4.4).

7. FIGURES

Figure 1 - Site Location Plan

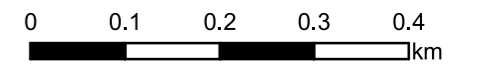
Figure 2 - Dormouse Nest Tube Location Plan

Figure 3 - Dormouse Survey Results



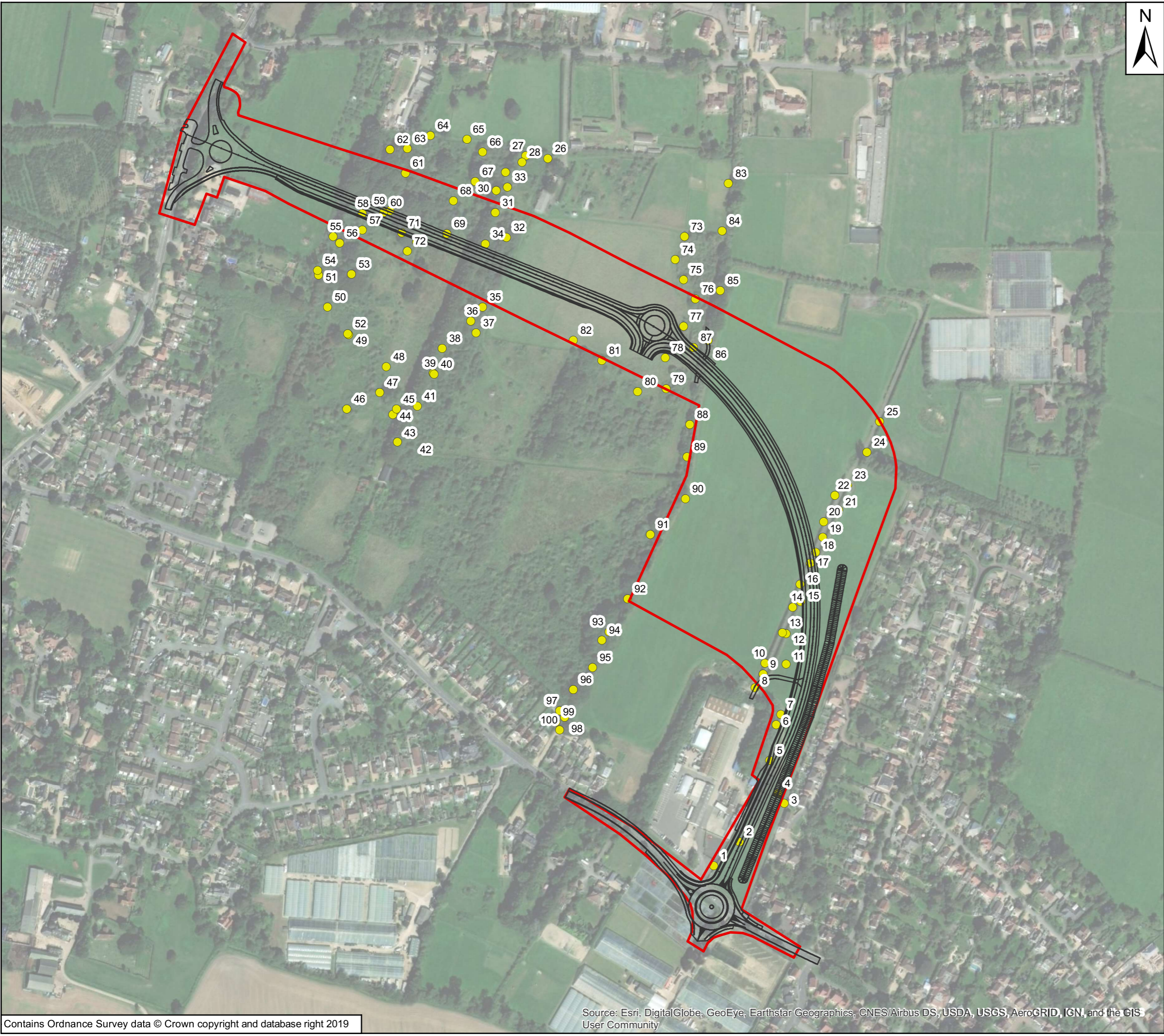
Key

- A29 Alignment
- Site

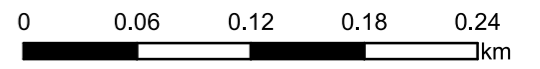


Client:	West Sussex County Council
Project:	A29 Realignment
Title:	Site Location Plan

Drawing No:	Figure 1	Drawn:	VJ
Date:	December 2019	Checked:	VD
Scale:	8,000 @ A3	Approved:	AH



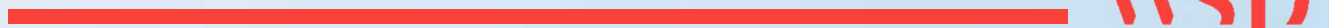
- Key**
- A29 Alignment
 - Site
 - Nest Tube Locations



Client:	West Sussex County Council
Project:	A29 Realignment
Title:	Dormouse Nest Tube Locations

Drawing No:	Figure 2	Drawn:	VJ
Date:	December 2019	Checked:	VD
Scale:	4,000 @ A3	Approved:	AH

Appendix A



RAW DATA

Table 4 - Raw Survey Data

Survey Date		April - Not Surveyed (NS)	30-May-19	June - Not Surveyed (NS)	31-Jul-19	August - Not Surveyed (NS)	30-Sep-19
Weather Description		NA	Cloud and wind. No rain. 14°C.	NA	Mid cloud and very windy. No rain. 15°C.	NA	Dry with slight wind. No rain. 17°C.
Nest Tube Number	Tree / shrub species	Date of Deployment: 04-Apr-2019					
1	Bramble	NS		NS		NS	
2	Bramble	NS		NS		NS	<i>Apodemus</i> sp. nest
3	Bramble	NS		NS		NS	
4	Bramble	NS		NS		NS	
5	Dogwood	NS		NS		NS	
6	Willow	NS		NS		NS	



Survey Date		April - Not Surveyed (NS)	30-May-19	June - Not Surveyed (NS)	31-Jul-19	August - Not Surveyed (NS)	30-Sep-19
7	Bramble	NS		NS		NS	
8	Hawthorn	NS		NS		NS	
9	Hawthorn	NS		NS		NS	
10	Field Maple	NS		NS	Unlocated	NS	
11	Hawthorn	NS		NS	<i>Apodemus sp. nest</i>	NS	
12	Hawthorn	NS		NS		NS	
13	Hawthorn	NS		NS	<i>Apodemus sp. nest</i>	NS	
14	Hawthorn	NS		NS		NS	
15	Hawthorn	NS		NS		NS	
16	Hawthorn	NS	Unlocated	NS	<i>Apodemus sp. nest</i>	NS	

Survey Date		April - Not Surveyed (NS)	30-May-19	June - Not Surveyed (NS)	31-Jul-19	August - Not Surveyed (NS)	30-Sep-19
17	Hawthorn	NS		NS		NS	
18	Hawthorn	NS	Unlocated	NS		NS	
19	Hawthorn	NS		NS		NS	
20	Hawthorn	NS		NS	<i>Apodemus sp.</i> nest	NS	<i>Apodemus sp.</i> nest
21	Field Maple	NS	Unlocated	NS		NS	
22	Hawthorn	NS		NS		NS	
23	Hawthorn	NS		NS		NS	
24	Hawthorn	NS		NS		NS	
25	Hawthorn	NS		NS		NS	
26	Elder	NS		NS		NS	



Survey Date		April - Not Surveyed (NS)	30-May-19	June - Not Surveyed (NS)	31-Jul-19	August - Not Surveyed (NS)	30-Sep-19
27	Elder	NS		NS		NS	<i>Apodemus</i> sp. nest
28	Malus sp.	NS		NS		NS	
29	Ivy/ Malus sp.	NS		NS		NS	
30	Malus sp.	NS		NS		NS	
31	Malus sp.	NS		NS		NS	
32	Malus sp.	NS		NS		NS	
33	Ivy/ dead Tree	NS		NS		NS	
34	Ivy/ Malus sp.	NS		NS		NS	
35	Sycamore	NS		NS		NS	
36	Malus sp.	NS		NS		NS	

Survey Date		April - Not Surveyed (NS)	30-May-19	June - Not Surveyed (NS)	31-Jul-19	August - Not Surveyed (NS)	30-Sep-19
37	Oak	NS		NS		NS	
38	Malus sp.	NS		NS		NS	
39	Elder	NS		NS		NS	
40	Malus sp.	NS		NS		NS	
41	Malus sp.	NS		NS		NS	
42	Malus sp.	NS		NS		NS	
43	Malus sp.	NS		NS		NS	
44	Elder	NS		NS		NS	
45	Elder	NS		NS		NS	
46	Elder	NS		NS		NS	
47	Elder	NS		NS		NS	



Survey Date		April - Not Surveyed (NS)	30-May-19	June - Not Surveyed (NS)	31-Jul-19	August - Not Surveyed (NS)	30-Sep-19
48	Malus sp.	NS		NS		NS	
49	Elder	NS		NS		NS	
50	Elder	NS		NS		NS	
51	Bramble	NS		NS		NS	
52	Hawthorn	NS		NS		NS	
53	Willow	NS		NS	Unlocated	NS	
54	Hawthorn	NS		NS		NS	
55	Elder	NS		NS		NS	
56	Elder	NS		NS		NS	
57	Hawthorn	NS		NS		NS	
58	Apple (fallen)	NS		NS		NS	

Survey Date		April - Not Surveyed (NS)	30-May-19	June - Not Surveyed (NS)	31-Jul-19	August - Not Surveyed (NS)	30-Sep-19
59	Elder	NS		NS		NS	
60	Malus sp.	NS		NS		NS	
61	Elder	NS		NS		NS	
62	Elder	NS		NS		NS	
63	Malus sp.	NS		NS		NS	
64	Elder	NS		NS		NS	
65	Elder	NS		NS		NS	
66	Ivy/ Malus sp.	NS		NS		NS	
67	Elder	NS		NS		NS	
68	Hawthorn	NS		NS		NS	
69	Lichen/ Malus sp.	NS		NS		NS	



Survey Date		April - Not Surveyed (NS)	30-May-19	June - Not Surveyed (NS)	31-Jul-19	August - Not Surveyed (NS)	30-Sep-19
70	Malus sp. (fallen)	NS		NS		NS	
71	Bramble (under Malus sp.)	NS		NS		NS	
72	Malus sp.	NS		NS		NS	
73	Malus sp.	NS		NS		NS	
74	Elder	NS		NS		NS	
75	Elder	NS		NS		NS	
76	Hawthorn	NS		NS		NS	
77	Blackthorn	NS		NS		NS	
78	Hawthorn	NS		NS		NS	
79	Blackthorn	NS		NS		NS	

Survey Date		April - Not Surveyed (NS)	30-May-19	June - Not Surveyed (NS)	31-Jul-19	August - Not Surveyed (NS)	30-Sep-19
80	Elder	NS		NS		NS	
81	Bramble	NS		NS		NS	
82	Malus sp.	NS		NS		NS	
83	Malus sp.	NS		NS		NS	
84	Hawthorn	NS		NS		NS	
85	Hawthorn	NS		NS		NS	
86	Hawthorn	NS		NS		NS	
87	Blackthorn	NS		NS		NS	
88	Malus sp.	NS		NS		NS	
89	Dead tree (Species unknown)	NS		NS		NS	



Survey Date		April - Not Surveyed (NS)	30-May-19	June - Not Surveyed (NS)	31-Jul-19	August - Not Surveyed (NS)	30-Sep-19
90	Elder	NS		NS		NS	
91	Hawthorn	NS		NS		NS	
92	Hawthorn	NS		NS		NS	
93	Elder	NS		NS		NS	
94	Elder	NS		NS		NS	
95	Oak	NS		NS		NS	
96	Elder	NS		NS		NS	
97	Elder	NS		NS		NS	
98	Elder	NS		NS		NS	
99	Elder	NS		NS		NS	
100	Bramble	NS		NS		NS	

Appendix B

**INDICATIVE SPECIES FOR
ENHANCEMENT PLANTING**



APPENDIX B – INDICATIVE SPECIES LIST FOR ENHANCEMENT PLANTING

Table 5 - Indicative Species List of species suitable for dormice

Common name	Latin name
Field maple	<i>Acer campestre</i>
Sycamore	<i>Acer pseudoplatanus</i>
Dogwood	<i>Cornus sanguinea</i>
Hazel	<i>Corylus avellana</i>
Hawthorn	<i>Crataegus monogyna</i>
Spindle	<i>Euonymus europaeus</i>
Holly	<i>Ilex aquifolium</i>
Wild privet	<i>Ligustrum vulgare</i>
Honeysuckle	<i>Lonicera periclymenum</i>
Domestic apple	<i>Malus domestica</i>
Crab apple	<i>Malus sylvestris</i>
Wild cherry	<i>Prunus avium</i>
Bird cherry	<i>Prunus padus</i>
Blackthorn	<i>Prunus spinosa</i>
Pedunculate oak	<i>Quercus robur</i>
Field rose	<i>Rosa arvensis</i>
Dog rose	<i>Rosa canina</i>
Bramble	<i>Rubus fruticosus agg.</i>
Grey willow	<i>Salix cinerea</i>
Way faring tree	<i>Viburnum lantana</i>



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