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Bramford to Twinstead Reinforcement

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1. Introduction

1.1 Overview

1.1.1 National Grid Electricity Transmission plc (here on referred to as National Grid) is making an application for development consent to reinforce the transmission network between Bramford Substation in Suffolk, and Twinstead Tee in Essex. The Bramford to Twinstead Reinforcement ('the project') would be achieved by the construction and operation of a new electricity transmission line over a distance of approximately 29km comprising of overhead lines, underground cables and grid supply point substation. It also includes the removal of 25km of the existing distribution network and various ancillary works.

1.1.2 For a full description of the project reference should be made to Environmental Statement (ES) Chapter 4: Project Description (**application document 6.2.4**).

1.1.3 This Dormouse Survey Report has been produced to support the draft European Protected Species (EPS) licence application for hazel dormouse (*Muscardinus avellanarius*), which can be found in Annex A (**application document 6.3.7.8.1**), and will be submitted to support the application for development consent and the accompanying ES under the Planning Act 2008.

1.2 Structure of this Report

1.2.1 The report comprises the results of a desk study and field surveys. Chapter 2 describes the methodology and criteria used to undertake the desk study and field survey. Survey limitations are also detailed. Chapter 3 sets out the results of the desk study and field survey.

1.3 Legislation and Policy

1.3.1 The hazel dormouse is afforded protection in the UK under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and as an EPS under the Conservation of Habitats and Species Regulations 2017 (as amended). Taken together, these pieces of legislation make it an offence to:

- Deliberately capture, injure or kill a dormouse;
- Deliberately disturb dormice in such a way as to be likely to significantly affect:
  - The ability of any significant group of dormice to survive, breed, or rear or nurture their young; or
  - The local distribution of dormice.
- Damage or destroy a breeding site or resting place of a dormouse;
- Keep, transport, sell or exchange or offer for sale or exchange any live or dead dormice or any part of, or anything derived from such an animal;
- Disturb a dormouse while it is occupying a structure or place which it uses for shelter or protection; or
- Obstruct access by a dormouse to any structure or place used for shelter or protection.

1.3.2 These actions (killing / injury excluded) can be made lawful through the granting of an EPS licence by the appropriate Statutory Nature Conservation Organisations, Natural England in this case. EPS licences may be granted under Regulation 53, Part 2 (e) of the Conservation of Habitats and Species Regulations 2017 (as amended) only after evidence is provided that there is a need for the proposals, that there are no satisfactory alternatives to the development, and that the development will have no detrimental effect on the wild population of the species concerned.

1.3.3 In addition, the dormouse is also listed under the requirements of Section 41 of the National Environment and Rural Communities Act 2006 as a Species of Principal Importance in England. This list is used to guide decision-makers in public bodies in implementing their biodiversity duty. The species listed are priorities for nature conservation action and therefore for consideration in impact assessment.

2. Methodology

2.1 Desk Study

2.1.1 A request for protected and notable species records within a 1km study area of the project Scoping Consultation Boundary was first made in 2021 and updated in June 2022 in relation to the Order Limits. Records of dormice were returned from the following sources:

- Essex Wildlife Trust (EWT) (2022);
- Essex Field Club (EFC) (2022); and
- Suffolk Biodiversity Information Service (SBIS) (2022).

2.1.2 The National Biodiversity Network (NBN) Atlas was also consulted as the database holds records collected for the National Dormouse Monitoring Programme.

2.1.3 Designated site citations/descriptions within 1km of the Order Limits were also reviewed for mention of dormouse presence.

2.1.4 Dormouse surveys were undertaken at 20 sites across the project in 2012 by the Suffolk Wildlife Trust to determine presence or likely absence of dormice. The 2012 field survey locations focussed on areas that had woodland with scrub understory or hedgerow habitats potentially linking to locations with existing dormouse records and on areas that contained suitable habitat but where no records had been previously noted. The results of these surveys are included in the desk study due to the age of the data and the nature of the records.

2.1.5 Any incidental and anecdotal evidence of dormice collected across the suite of desk or field surveys undertaken in 2021 and 2022, within the Order Limits are also included.

2.2 Dormouse Field Survey

Approach to the Field Survey

2.2.1 National Grid's ecological advisors originally proposed to use desk study data (2012 and 2022) and UK Habitat Classification (UKHab) Survey (2021 and 2022) for the assessment of significant effects on dormouse presented within the ES. This was because the desk study confirmed the presence of dormouse within the study area and as the UKHab Survey identified suitable habitat for dormouse within the Order Limits the assumption would be that dormouse were present within the Order Limits in all suitable habitat. This was deemed sufficient for the purposes of the Environmental Impact Assessment in order to draw a conclusion on likely significant effects to this species. Pre-construction surveys were proposed to support the EPS licence prior to construction (it was not originally proposed to submit draft EPS licences with the application for development consent at this time).

2.2.2 Natural England advised in November 2021, that it would require a draft EPS mitigation licence supported by up-to-date survey information (from the current or previous survey season) to be submitted with the application for development consent to support the current understanding of the species within the area. Therefore, a programme of targeted field surveys were subsequently programmed for the 2022 season.

2.2.3 A targeted approach was taken with regards to the dormouse surveys with ten survey areas selected across the Order Limits. These are shown on ES Figure 7.8.2 (**application**

document 6.4). All proposed underground cable sections, where they crossed suitable dormouse habitat, were included in the survey as these were considered to result in the greatest impact on suitable dormouse habitat as it could involve the removal of between 60m – 80m wide sections of hedgerow and woodland.

2.2.4 A sampling approach was used elsewhere where the potential for impacts on vegetation would be comparatively less, for example temporary access tracks and construction compounds. In a region of known dormouse presence, the assumption is that where one of two connected habitats is surveyed, if dormouse presence is established in one habitat, dormice will also be present in the un-surveyed linked habitat. Key areas were targeted, such as those where dormice have been recorded previously or where the 2012 survey results were inconclusive (see Section 3.1 for 2012 survey results).

2.2.5 The targeted approach to field survey provided an adequate survey sample of suitable habitat for dormouse across the Order Limits.

Field Survey Methodology

2.2.6 The field survey followed the methodology set out in Bright *et al*. (2006). Dormouse tubes were installed within and up to 100m either side of the Order Limits (subject to land access) within the ten survey areas. A minimum of 50 nest tubes were installed in each of the ten survey areas, with a transect approach being used when surveying woodland blocks. The number of nest tubes provided adequate survey effort, as described by best practice guidelines (Bright *et al*., 2006).

2.2.7 Nest tubes were installed in February/March 2022 and were checked every other month between May and October 2022 unless access restrictions applied (see Section 2.4). Undertaking a check of the tubes every other month is considered appropriate as per guidance set out by Natural England (2011a) Interim Natural England Advice Note – Dormouse Surveys for Mitigation Licensing – Best Practice and Common Misconceptions. The guidelines state that to ensure a satisfactory survey effort, a minimum probability index score of 20 is recommended and this has been achieved by completing the survey effort described above. Nest tubes were collected on the final checks in September and October.

2.2.8 A nut search was undertaken in September and October 2022 for any of the ten survey areas where evidence of dormice was not recorded during the nest tube surveys.

2.3 Habitat Suitability Assessment

2.3.1 A Habitat Suitability Assessment was undertaken in order to identify the type and location of all habitats that are suitable to support dormice within the Order Limits. This information has been used to support the draft EPS licence for dormouse.

2.3.2 The Dormouse Conservation Handbook (Bright *et al*., 2006) details habitats suitable for dormice which can be summarised as:

- Diverse deciduous woodland with abundant scrub and understorey;
- Oak (*Quercus* species) dominated woodland with hazel (*Corylus avellana*);
- Scrub;
- Conifer woodland; and
- Hedgerows.

2.3.3 Optimal habitat is described as extensive woodland, where shrub species have developed and where coppicing of hazel is undertaken in a long rotation. Species rich areas of scrub, young plantation and hedgerows can also offer optimal conditions for dormice. Sub-optimal areas of dormouse habitat which are linked to areas of optimal habitat in the wider area, may also be suitable for dormice due to these connections.

2.3.4 Dormice are also found in other habitats such as gorse scrub, heathland, sycamore dominated woodland and gardens with honeysuckle or other food sources.

2.3.5 The UKHab Survey of the Order Limits was undertaken in 2021 to 2022 and is reported in ES Appendix 7.1: Habitats Baseline Report (**application document 6.3.7.1**). This identified habitats suitable for dormice within the Order Limits. The locations of these habitats are shown on ES Figure 7.8.1 (**application document 6.4**).

2.3.6 Dormouse territories are estimated at around 1ha with individuals being radio tracked travelling on an average of 360m from their birthplace, even up to 1.2km in rare cases (Juškaitis, 1997). Therefore, it can be reasonably assumed that there is likely to be a dormouse presence in all suitable habitats within the Order Limits where there is a well-established connectivity to the wider landscape.

2.4 Survey Constraints

2.4.1 It was not possible to check any tubes in April due to staff illness immediately prior to the visit. As a result, surveys of nest tubes in areas 1-6e were checked in May rather than April. This meant that the tubes in these survey areas were checked on two consecutive months rather than every other month. This is not considered to affect the overall survey effort as the probability index score applies from when the nest tubes are deployed and not just the months when the tubes are checked.

2.4.2 Area 6f was not accessed in May as crops had grown adjacent to the hedgerow where the tubes were installed, and access would have caused crop damage. Area 6f was successfully checked in June. It was also not possible to check 21 tubes in Area 8 and 70 tubes in Area 10d in May due to access constraints. However, these tubes were subsequently checked in July.

2.4.3 In June, some tubes in Area 4c could not be accessed due to overgrown vegetation. A hot weather warning in June also meant areas 6c and 6d were not accessed. One hedgerow in Area 3, was not accessed in June, August and October due to the installation of an electric fence surrounding a field with horses.

2.4.4 In July, six tubes in Area 10a could not be accessed due to an electric fence placed around a horse field.

2.4.5 In August it was not possible to check six tubes in Area 4a due to access constraints.

2.4.6 In September it was not possible to check and collect in 79 tubes in Area 8 as land access was denied.

2.4.7 In all ten survey areas, at least 50 tubes were checked at each survey. This gives confidence in the results of the survey as the tubes are left in place and dormice could continue to use the tubes and leave evidence of use, where present.

3. Results

3.1 Desk Study

3.1.1 Records supplied from EWT, EFC and SBIS confirmed the presence of dormice within 1km of the Order Limits. Table 3.1 gives a summary of the most recent records with full records shown on ES Figure 7.8.1 (**application document 6.4**).

Table 3.1 – Summary of the Dormouse Data within the Last 15 years

Number of Records	Most Recent Record Within 1km	Grid Reference	Location in Relation to the Dormouse Survey Areas
EWT – 17 records	2012	TL875360, Ansell's Grove Wood, north of Henry Back Road	200m west of area 10c
	2012	TL881368, Valley Farm	870m NE of area 10c
	2011	TL879357, Woodland north of Moat Lane	Within area 10c
EFC – 3 records	2011	TL881350, Parkhill Wood	744m south of area 10c
	2010	TL870354, Woodland to the west of Henry Back Road	Immediately west of area 10d
SBIS – 163 records	2020	TL99364044, In a line of trees to the south of Potash farm alongside Potash Lane	600m north of area 6d
	2019	TL994403, In Howe Wood, east of Potash Lane	400m north of area 6d
	2019	TM009404, In Layham Grove (CWS)	300m north-west of area 4b

3.1.2 The NBN Atlas was consulted, as this holds records collected for the National Dormouse Monitoring Programme. Although those records cannot be directly replicated, the records show dormouse presence (within the last 15 years) for the areas around:

- Upper Layham, to the south of Layham Quarry;
- Woodland areas around Assington Thicks (including records from 2020); and
- Stour Valley near Ansell's Grove.

3.1.3 Designated sites within the study area (1km around the Order Limits) were reviewed in 2022 for mention of dormouse presence. The following sites mention dormice in their citation/descriptions and are shown on Figure 7.8.1 (**application document 6.4**):

- Tiger Hill Local Nature Reserve (LNR);
- Arger Fen LNR and the overlapping Arger Fen and Spouse's Vale Suffolk Wildlife Trust (SWT) Nature Reserve;
- Raydon Great Wood County Wildlife Site (CWS);
- Assington Thicks CWS;
- Hadleigh Railway Walk CWS;

- High Oak Forest CWS;
- The Dollops CWS;
- Valley Farm Wood CWS;
- Layham Grove CWS; and
- Potash Lane Hedge CWS.

3.1.4 The Nature Recovery Plan for the Dedham Vale Area of Outstanding Natural Beauty (AONB) and Stour Valley (established within the AONB management plan 2021-26) (Dedham Vale AONB and Stour Valley Project, 2021) also lists the hazel dormouse as its flagship species.

3.1.5 The desk study results show the largest number of records in Section D: Polstead, along with the most recent records of dormice found close to dormouse survey areas 6d (north of Sprott's Farm) and 4b (Layham Quarry). Other recent desk study records are present close to dormouse survey area 10c in Section G: Stour Valley.

3.1.6 The results of the 2012 dormouse field surveys comprised of dormouse nut evidence, nests and sightings of dormice within survey tubes. Of the 20 sites surveyed, seven returned positive results for dormice and three with inconclusive results but had likely dormouse presence (unconfirmed dormouse nests were found in survey tubes). In summary, the 2012 surveys concluded that:

- It was highly likely that dormice were present throughout the Hadleigh Railway Walk, Loshes Meadows and Sparrows Farm areas in low numbers and that hedgerows provide important corridors in these locations;
- Evidence of dormouse (nests and individual animals) were found within the area to the east of Ansell's Grove. Dormice were considered highly likely to be present throughout the valley, where there is scrub and woodland habitat; and
- Layham Grove, Layham Quarry and Valley Farm Woodland areas provided a good mosaic of interconnected habitat with strong evidence of dormouse presence throughout.

3.1.7 A summary of the 2012 dormouse field survey results, with habitat descriptions, grid references and field signs found is provided in Table 3.2 and the results are also shown on ES Figure 7.8.1 (**application document 6.4**).

Table 3.2 – Summary of 2012 Dormouse Survey Results

Site ID	Habitat Description	Desk Data at time of Survey (2012)	Field Survey Results
DM1 Elms Grove	Elms Grove is a small area of semi-natural broad-leaved woodland close to native species-rich hedges located to the north of Burstall.	No records	Nest tubes were installed in June 2012 and final checks carried out in November 2012 but no evidence of dormice was found.
DM2 Ramsey/ Hintlesham	Ramsey Wood and Hintlesham Great Wood both form an area of semi-natural broad-leaved woodland which together are known as Hintlesham Woods SSSI. Ramsey Wood is an intact ancient wood, linked to Hintlesham Wood by secondary woodland established between the 16th and 19th centuries.	Nearest dormouse records were at Wolves Wood, 650m to the north-west and dated 2011.	Nest tubes were installed in April 2012 and final checks carried out in November 2012 but no evidence of dormice was found.
DM3 Keeble's Grove	Keeble's Grove is also part of Hintlesham Woods SSSI. It comprises another area of woodland and is adjacent to Wolves Wood.	Adjacent to Wolves Wood where records exist from 2011.	Nest tubes were installed in May 2012 and final checks carried out in November 2012 no evidence of dormouse found.
DM4 Tom's Wood	Tom's Wood is a CWS located approximately 2km south-east of Hadleigh and comprises plantation mixed woodland. It is mainly conifers, but with some broadleaf margins. Native species-rich intact hedges adjoin the wood to the north.	Nearest dormouse records were from 2002 at Raydon Great Wood, approximately 700m south-west.	Nest tubes were installed in May 2012 and final checks carried out in November 2012 no evidence of dormouse found.
DM5 Hadleigh Railway Walk	Hadleigh Railway Walk is a CWS and LNR located to the immediate south of Hadleigh. This area comprises semi-natural broad-leaved woodland and numerous native species-rich hedges are evident in the vicinity.	Nearest dormouse records were from 2002 at Raydon Great Wood, approximately 700m south-east.	Nest tubes were installed in June 2012 and final checks carried out in November 2012. A possible dormouse nest was found but this could not be confirmed.
DM6	Benton End Wood is an area of plantation broad-leaved woodland to the south of Hadleigh at Benton End Farm.	Nearest dormouse records were from 2002 at Raydon	Nest tubes were installed in June 2012 and final checks carried out in November 2012 but no evidence of dormice was found.

Site ID	Habitat Description	Desk Data at time of Survey (2012)	Field Survey Results
Benton End Wood	This is not thought to be ancient woodland but is close to the railway walk.	Great Wood, approximately 2km south-east.	
DM7 Valley Farm Wood	Valley Farm Wood is a CWS and comprises semi-natural broad-leaved woodland with adjacent native species-rich hedges.	Nearest dormouse records were from a hedge at Overbury Hall in 2010, approximately 300m north-east.	Nest tubes were installed in May 2012 and final checks carried out in December 2012. Five dormouse nests were recorded (TM015 403, TM014 403, TM014 403, TM015 404, TM015 404
DM8 Layham Grove	Comprises semi-natural broad-leaved woodland adjacent to native species-rich hedges.	Nearest dormouse records were from a hedge at Overbury Hall in 2010, approximately 900m east.	Nest tubes were installed in May 2012 and final checks carried out in December 2012. Five dormouse nests and one juvenile dormouse were recorded (TM009 405, TM 010 403, TM009 403, TM009 403, TM008 404).
DM9 Layham Quarry	CWS comprising a sand and gravel pit with areas of semi-natural broad-leaved woodland, plantation broadleaved woodland, dense/continuous scrub, bare ground and marshy grassland. Native species-rich hedges are noted surrounding the quarry area.	Nearest dormouse records were from a hedge at Overbury Hall in 2010, approximately 750m north-east.	Nest tubes were installed in May 2012 and final checks carried out in December 2012. Three dormice (1 adult, 1 juvenile and 1 torpid in December), 11 dormouse nests (TM014 403, TM014 403, TM014 401, TM014 399, TM014 399, TM014 399, TM014 399, TM014 399, TM012 401, TM015 402, TM015 402) and one dormouse opened nut were recorded (TM014 400). This is thought to be a permanent dormouse population.
DM10 Millfield Wood (south)	Semi-natural broad-leaved woodland adjoining native species-rich hedges.	Dormice were recorded in Millfield Woods North in 2010 approximately 200m north of this location.	Nest tubes were installed in May 2012 and final checks carried out in November 2012. Five dormouse nests were recorded. This is thought to be part of a widely scattered population in the area.

Site ID	Habitat Description	Desk Data at time of Survey (2012)	Field Survey Results
DM11 The Dollops	Semi-natural broad-leaved woodland adjoining native species-rich hedges.	Dormice were recorded in Millfield Woods North in 2010 approximately 780m north-east.	Nest tubes were installed in June 2012 and final checks carried out in November 2012 but no evidence of dormice was found.
DM12 Wood north of Mill Farm	Area of semi-natural broad-leaved woodland adjoining species-poor hedges and an area of plantation broad-leaved woodland to the east.	Nearest dormouse records were at Mill Farm in 2011. A negative nest tube survey was recorded in 2008.	Nest tubes were installed in May 2012 and final checks carried out in December 2012. One dormouse nest was recorded and one dormouse opened nut (TL936 371). This location is connected to habitat where dormice are regularly recorded. Likely to be a low population.
DM13 Appletree Wood	Semi-natural broad-leaved woodland adjacent to a reservoir with native species-rich hedges apparent.	Nearest dormouse record at Assington Thicks in 2011 (1.3km north-east). Appletree Wood was surveyed in 2008 but was negative.	Nest tubes were installed in June 2012 and final checks carried out in December 2012 but no evidence of dormice was found.
DM14 Wood east of Dunstead Farm	Semi-natural broad-leaved woodland with native species-rich hedges adjoining the woodland to the north.	There were old dormouse records dating from the 1990s at Dunstead (500m southwest).	Nest tubes were installed in May 2012 and final checks carried out in December 2012 but no evidence of dormice was found.
DM15 Wood southeast of Valley Farm	Plantation broad-leaved woodland with native species-rich hedges adjoining this to the south.	None	Nest tubes were installed in July 2012 and final checks carried out in December 2012. Two dormouse nests and one juvenile dormouse were recorded (TL881 368, TL881 368). The core population is unknown but is likely to be in the valley.

Site ID	Habitat Description	Desk Data at time of Survey (2012)	Field Survey Results
DM16 Woodand south of Culverdown	Plantation broad-leaved woodland with native species-rich hedges.	Nearest dormouse records were at Henny Back Road in 2010	Nest tubes were installed in June 2012 and final checks carried out in December 2012. Seven dormouse nests and three dormice were recorded (TL877 359, TL877 359, TL877 359, TL877 359, TL876 359, TL875 360, TL877 360). There is a good population in the area and a permanent population within the hedges nearby.
DM17 Loshes Meadows	Semi-natural broad-leaved woodland.	Nearest dormouse records were at Henny Back Road in 2010.	Nest tubes were installed in June 2012 and final checks carried out in December 2012. A possible nest was found but this could not be confirmed. This was recorded to the east of Loshes.
DM18 Sparrows Farm	The habitat around Sparrows Farm comprises numerous native species-rich hedges providing good connectivity to surrounding areas of woodland.	None	Nest tubes were installed in June 2012 and final checks carried out in December 2012. Habitat along stream is highly suitable for dormice and the species has been recorded along the stream to the east
DM19 Waldegrave Wood	Semi-natural broad-leaved woodland and the surrounding area has a network of native species-rich hedges.	None	Nest tubes were installed in June 2012 and final checks carried out in December 2012 but no evidence of dormouse found.
DM20 Butler's Wood	Semi-natural broad-leaved woodland and the surrounding area has a network of native species-rich hedges.	None	Nest tubes were installed in June 2012 and final checks carried out in December 2012 but no evidence of dormouse found.

3.2 Habitat Suitability Assessment

3.2.1 A UKHab survey was undertaken in 2021 to 2022. This data was used to identify suitable dormouse habitats within the Order Limits (Table 3.3).

Table 3.3 – Habitats Within the Order Limits Suitable to Support Dormice

Optimal Habitat	Other Suitable Habitat
Lowland mixed deciduous woodland	Mixed Scrub
Native species rich hedgerow	Other Coniferous Woodland
Native species rich hedgerow with trees	Other Woodland; broadleaved
	Other Woodland; mixed
	Native hedgerow
	Native hedgerow with trees

3.2.2 The locations of the habitats found within the Order Limits that are considered to be suitable for dormice, are shown on ES Figure 7.8.1 (**application document 6.4**).

3.3 Dormouse Field Survey

3.3.1 The results of the 2022 dormouse field survey are summarised in Table 3.4 and shown in Figure 7.8.2 (**application document 6.4**).

3.3.2 Evidence of dormouse was recorded in the following survey areas:

- Area 1 (woodland north of Mill Farm) in Section AB: Bramford Substation/Hintlesham;
- Areas 4a, 4b, and 4c (Layham Quarry and woodland) in Section D: Polstead;
- Area 6c (hedgerow on Holt Road) in Section E: Dedham Vale AONB, and 6d (hedgerow north of Sprott's Farm) in Section D: Polstead;
- Area 9 (wood east of Dunstead Farm) and in Section G: Stour Valley; and
- Areas 10c (woodland south of Culverdown) and 10d (woodland north-west of Alphamstone) in Section G: Stour Valley.

3.3.3 Whilst undertaking the field survey in Area 10c, surveyors observed that dormouse footprint tunnels had been set up across the land parcel. By kind permission of the landowner, survey results were shared which returned positive results for dormice.

Table 3.4 – Results of 2022 Dormouse Field Surveys

Area	Location	Survey Date	Result	Habitat Description
1	North of Mill Farm	10/05/2022 20&23/06/2022 15/08/2022 06/10/2022	No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found **One empty dormouse nest found**	Broad-leaved woodland with species present such as, white poplar, ash, English oak, elder, alder, blackthorn, field maple, hawthorn, willow and rose. With a dense ground flora.
2	Hintlesham Great Woods	10/05/2022 21/06/2022 16/08/2022 04/10/2022	No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found	An area of ancient woodland. Abundant oak and ash trees, frequent field maple and occasional downy birch are present. Understory predominantly hazel, spindle and holly.
3	Hadleigh Railway Walk	12/05/2022 23/06/2022 16/08/2022 05/10/2022	No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found	Area three comprises of an area of oak dominated broadleaved woodland with blackthorn, elm and hawthorn understorey. Scrub ground flora with 25% bare earth. Along with a species rich hedgerow with trees. Species present in the hedgerow included, hazel, hawthorn, blackthorn, elder and oak with ground flora species including moschatel, dog's mercury, garlic mustard, cleavers, red dead nettle, common nettle, lesser celandine, lords and ladies, cow parsley and ivy.
4a	Layham Quarry and Woodland	11/05/2022 22/06/2022 18/08/2022 11/10/2022	No evidence of dormouse found **Two juvenile dormice present in tube, one male, one female** No evidence of dormouse found **Three dormouse nests and one dormouse seen leaving a tube**	A species rich hedgerow with trees adjacent to grassland. Species present in the hedgerow included willow, hazel, elder, blackthorn, hawthorn, birch and bramble.
4b	Layham Quarry and Woodland	11/05/2022 18/08/2022	No evidence of dormouse found No evidence of dormouse found	Open mosaic habitat on previously developed land. Scattered scrub present with potential to support dormice. Species include Salix sp., silver birch and bramble.

Area	Location	Survey Date	Result	Habitat Description
		11/10/2022	**One empty dormouse nest**	
4c	Layham Quarry and Woodland	11/05/2022 22/06/2022 18/08/2022 11/10/2022	No evidence of dormouse found No evidence of dormouse found One empty dormouse nest found **Four empty dormouse nests**	An area of broadleaved woodland dominated by silver birch, with a sparse understory. Ground flora included, ground ivy, sparse brambles, cleavers, wood forget me not, selfheal, male fern, red campion, veronica sp., creeping soft grass. At the eastern extent a mound was present with a line of hawthorn on top, separating wider habitats to the east.
5	Milfield Wood CWS South	11/05/2022 22/06/2022 17/08/2022 11/10/2022	No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found	An area of lowland mixed deciduous woodland. With canopy species including English oak, wild cherry, silver birch and Salix sp. Hazel, elder and hawthorn made up the understory. Ground flora species included common nettle, wood speedwell, bluebells, wood avens, cleavers, common sorrel, dog's mercury, common ivy, ground ivy, Rumex sp., (including wood dock).
6a	Hedgerow south of Calais Street	10/05/2022 21/06/2022 17/08/2022 12/10/2022	No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found	Native hedgerow with species including hawthorn, ash, blackthorn, holly and oak with ground flora species including cleavers, nettles, hedgerow cranesbill, cow parsley, false oat grass, cocksfoot, barren brome and black bryony.
6b	Hedgerow to the west of Holt Road	10/05/2022 21/06/2022 17/08/2022 12/10/2022	No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found	Species rich hedgerow with one tree, in between arable fields. Species present included field maple, hawthorn, hazel, wych elm, elder, and oak sp.
6c	Hedgerow on Holt Road	10/05/2022 17/08/2022 12/10/2022	No evidence of dormouse found No evidence of dormouse found **One empty dormouse nest**	Native, species rich hedgerow with trees along west side of road and grassland. Some trees recently planted. Species included oak, field maple, hawthorn, blackthorn, crab apple, bramble, rose, hazel, apple, ash, old man's beard. Hedgerow to the south of area 6c heavily/recently flailed. Bordering two arable fields.

Area	Location	Survey Date	Result	Habitat Description
6d	Hedgerow to the North of Sprott's Farm	12/05/2022 17/08/2022 12/10/2022	No evidence of dormouse found **One empty dormouse nest found** **Five dormouse nests with one dormouse seen leaving a tube and one dormouse present**	Large, unmanaged native species rich hedgerow with tress bordering arable fields and grassland habitat possibly expanding into woodland habitat. Large number of fallen trees. Bordered by arable fields and grassland habitat.
6e	Hedgerow to the south-west of Milfield Wood	12/05/2022 22/06/2022 17/08/2022 12/10/2022	No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found	A native species rich hedgerow alongside a ditch, bordering an arable field. Tree and shrub species included oak, hornbeam, elder, field maple, holly, cherry hawthorn and blackthorn. Ground flora included nettle, bramble and dog's mercury.
6f	Hedgerow to the south-west of Milfield Wood	12/05/2022 22/06/2022 17/08/2022 12/10/2022	No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found	A native hedgerow with trees, bordering arable land containing species such as field maple, blackthorn, wych elm, large leaved lime, rose, honeysuckle, holly, blackthorn. One oak tree present by pylon. Ground flora included cleavers, dandelion, bramble, garlic mustard, wood avens.
7a	Hedgerow along the River Box	19/05/2022 21/07/2022 12/09/2022	No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found	Line of trees bordering watercourse, dominated by willow.
7b	Hedgerow to the east of Alder Carr	19/05/2022 21/07/2022 12/09/2022	No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found	Historic hedgerow boundary feature dominated by blackthorn.
7c	Hedgerow to the south of Alder Carr	19/05/2022 21/07/2022 12/09/2022	No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found	Two sections of hedgerow present, bordering grassland. The northern section is a species rich hedge with trees including hazel, blackthorn, hawthorn, ash, oak, willow and field maple, with ground flora species such as common nettle, bracken, cow parsley, rose, cocksfoot, ivy, common dock, ground ivy, garlic mustard. The hedgerow runs along dry ditch.

Area	Location	Survey Date	Result	Habitat Description
				The southern section is a species rich hedgerow with tree species including blackthorn, hawthorn, field maple, pedunculate oak, plum tree, field maple, ash, elm and hazel. With ground species including bracken, elm, ivy, common nettle, cow parsley, common hogweed, plum tree, and red dead nettle.
8	Wood north of Mill Farm	17/05/2022 26/07/2022 22/09/2022	No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found	An area of broadleaved woodland plantation of uniform age. On a bank that rises up to the south by 1m every 3m. Log piles were also present. Tree species included sweet chestnut, silver birch, ash, hawthorn, blackthorn, English oak and English holly. Some limited ground flora included common nettle, cock's foot, common bent, bramble, false brome, wood avens and ground ivy.
9	Wood east of Dunstead Farm	19/05/2022 21/07/2022 21/09/2022	No evidence of dormouse found No evidence of dormouse found **One empty dormouse nest and dormouse chewed nuts found**	An area of lowland mixed deciduous woodland, heavily used for game bird rearing. Native tree species include field maple, hornbeam and oak. Significant disturbance of herb layer with large tracts of bare ground in upper drier areas. Invasive bracken in lower areas with abundant Salix sp. Other tree species included dogwood, cherry, hawthorn, blackthorn, elder, dog rose and ash. Ground flora was mainly bare.
10a	Hedgerow on trackway south of Twinstead Road	18/05/2022 21/07/2022 13/09/2022	No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found	Hedgerow present along an old barbed wire fence, along an earth track. English elm was dominant along the line of hedgerow for 250m to 300m, some elder and English holly was present along with English oak, spindle, blackthorn and hazel.
10b	Hedgerow present along Moat Lane	18/05/2022 21/07/2022 13/09/2022	No evidence of dormouse found No evidence of dormouse found No evidence of dormouse found	Line of mature elm trees adjacent to road.

Area	Location	Survey Date	Result	Habitat Description
10c	Woodland south of Culverdown	18/05/2022 26/07/2022 14/09/2022	No evidence of dormouse found No evidence of dormouse found **Dormouse chewed nuts found**	A mosaic of willow plantation, native alder and drier oak dominated, open woodland with willow to 25m high, planted in lines and non-native. An area of alder alongside a shallow stream approximately 50 years old with some larger fallen trees. A tall sward, 1.75m, variously dominated by giant horsetail and nettle. Occasional patches of lesser pond sedge. Some small isolated drier areas showing signs of ancient woodland.
10d	Woodland north-west of Alphamstone	18/05/2022 26/07/2022 15/09/2022	No evidence of dormouse found No evidence of dormouse found **Five dormouse nests and one adult dormouse seen**	An overgrown shrubby hedgerow with trees on a deep ditch bank system. Some semi-mature oak with abundant hazel and elm. Significant bracken along upper side of bank. Other species included blackthorn, field maple, ash, dogwood and elder.

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