

# Appendix 9.5

## Dormice



Hallam Land Management Ltd

**Great Wilsey Park, Haverhill**

**HAZEL DORMOUSE REPORT**

**Appendix 9.5**

October 2015

**FPCR Environment and Design Ltd**

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## 1.0 INTRODUCTION

- 1.1 The following report has been prepared by FPCR Environment and Design Ltd on behalf of Hallam Land Management Ltd. It provides details of a hazel dormouse *Muscardinus avellanarius* survey undertaken on land at Great Wilsey Farm, Haverhill, Suffolk (Central OS grid Ref: TL 689461), hereafter referred to as 'the site'.
- 1.2 The site is dominated by arable and pasture fields with species-rich field margins and hedgerows. Mixed and broad-leaved plantation woodland blocks are present as well as areas of new and established tree planting. Small copses and tree lines are present at field boundaries. There was a good network of thirty-one hedgerows which run through the site; these were commonly associated with a number of ditches. The majority of hedgerows were considered to be of nature conservation importance. The most prevalent species included oak *Quercus robur*, bramble *Rubus fruticosus*, ash *Fraxinus excelsior*, hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*. Woodland compartments varied in their understorey, but generally these lacked any woody species, due to the overshadowing by the closed dense tree canopies.
- 1.3 No records of dormice were returned by Suffolk Biological Records Centre. There were unconfirmed reports that a dead dormouse was found with bramble near the disused railway to the south, however this could not be confirmed as there were no photographs or formal identification.
- 1.4 A total 381 dormice nesting tubes were installed in suitable habitats within the development area, this included hedgerows and woodland compartments; these were installed in March 2015. Nesting tubes were checked between May to September 2015, during the final check in September one dormice nest was identified and confirmed in tube 293 located south of woodland W4.

## 2.0 HAZEL DORMOUSE ECOLOGY

- 2.1 The hazel dormouse is a largely nocturnal mammal, found in deciduous woodland and hedgerows. It is mostly arboreal, spending much of its time climbing among tree branches in search of food and rarely coming to ground. Dormice need a variety of trees and shrubs within their habitat to provide a sustainable food sources throughout the year. Food sources include flowers, pollen, fruits, insects and nuts.
- 2.2 Dormice are able to lower their body temperature and become torpid, they use this strategy during the spring and summer to wait out periods where food supply is short or bad weather prevents foraging. Dormice hibernate during the winter months within nests on the ground under leaf litter or within hedgerow bases, although there are short periods of activity during these periods. In the spring, dormice become active again around April and May.
- 2.3 During the day dormice sleep in a nest. This can be in a hollow tree branch, a deserted bird nest or nest boxes and in specific dormouse nest boxes or tubes.
- 2.4 Dormice live at low population densities, and have home ranges that stretch between 1.5ha to 1.7ha dependant on sex. If habitats are suitable and fall within known areas of dormice occupation, then regardless of habitat size surveys for dormice should be undertaken, unless there are limited historical linkages. Dormice can live up to five years in the wild, much longer than other comparable small mammals. During the breeding season up to five young are born usually between June to September, with July and August being the norm.

## 3.0 LEGISLATION

- 3.1 The hazel dormouse is listed under Annex IVa of the EC Habitats Directive and as a result is covered by Section 41 of the Conservation of Habitats and Species Regulations 2010. It is also protected under the Wildlife and Countryside Act 1981 (as amended). Taken together, these make it an offence to:
- deliberately capture or intentionally take a dormouse;
  - deliberately or intentionally kill or injure a dormouse;
  - to be in possession or control of any live or dead dormouse or any part of, or anything derived from a dormouse;
  - damage or destroy a breeding site or resting place of a dormouse;
  - Intentionally or recklessly obstruct access to any place that a dormouse uses for shelter or protection;
  - intentionally or recklessly disturb a dormouse while it is occupying a structure or place that it uses for shelter or protection;
  - deliberately disturb any dormouse in particular any disturbance which is likely to
    - impair their ability to survive, breed, reproduce or to rear or nurture their young; or in the case of hibernating or migratory species, to hibernate or migrate; or
    - affect significantly the local distribution or abundance of the species to which they belong.

- 3.2 Although the law provides strict protection to dormice, it also allows derogation from this protection under Section 53 of the Conservation of Habitats and Species Regulations 2010 through the issuing of EPS licences for development works. These licences in England are currently determined by Natural England (NE).
- 3.3 Where a lawful operation is required to be carried out, which is likely to result in one of the above offences, an EPS licence may be obtained from NE to allow the operation to proceed.
- 3.4 As part of the licence application process a number of 'Tests' have to be met by the application.
- 3.5 Natural England Guidance Note: European Protected Species and the Planning Process – Natural England's Application of the 'Three Tests' to Licence Applications (March 2011) states:
- "In determining whether or not to grant a licence Natural England must apply the requirements of Regulation 535 of the Regulations and, in particular, the three tests set out in sub-paragraphs (2)(e), (9)(a) and (9)(b)6. (1) Regulation 53(2)(e) states: a licence can be granted for the purposes of "preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment".*
- (2) Regulation 53(9)(a) states: the appropriate authority shall not grant a licence unless they are satisfied "that there is no satisfactory alternative".*
- (3) Regulation 53(9)(b) states: the appropriate authority shall not grant a licence unless they are satisfied "that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range."*
- 3.6 Conservation status is defined as "the sum of the influences acting on the species concerned that may affect the long term distribution and abundance of its population within its territory". It is assessed as favourable when:
- population dynamics data on the species concerned indicate that it is maintaining itself on a long term basis as a viable component of its natural habitats, and
  - The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
  - There is, or will probably continue to be, a sufficiently large habitat to maintain its populations on a long term basis.
- 3.7 These tests must not only reach agreement with Natural England when assessing a Licence application they must also be assessed by the planning authority when determining a planning application.
- 3.8 The dormouse is listed as a "species of principle importance for the conservation of biological diversity" in the Natural Environmental & Rural Communities Act (2006) and as a result Public bodies must have regard to it when carrying out their duties.
- 3.9 The dormouse is also listed within the Suffolk Biodiversity Action Plan.

## 4.0 METHODOLOGY

### Desk Study

- 4.1 Consultations for existing ecological data regarding hazel dormouse were sought from Suffolk Biological Records Centre and conversations were also held with the Suffolk Wildlife Trust.

### Field Surveys

#### Nesting Tubes

- 4.2 Dormouse presence surveys were undertaken in accordance with current good practice guidelines within *The Dormouse Conservation Handbook 2<sup>nd</sup> Edition*<sup>1</sup>. Surveys involved placing standard dormouse nest tubes every 20m in suitable habitat, approximately 1.5m above ground. A total of 381 tubes were installed throughout the site on 16th March 2015. Checks of these tubes took place between May and September, whereby all checks were done by an experienced ecologist and/or a licenced individual (John Condron WML-CL10a).
- 4.3 The survey results are used in conjunction with an index of probability, which indicates the likelihood of finding dormice during this period (see Table 1).

**Table 1. Index of Probability for Recording Dormice in Nesting Tubes**

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

- 4.4 The survey has been scored for effort according to the method developed from the South West Dormouse Project<sup>2</sup>. The scoring system provides an overall index of effort by multiplying the sum of the months the tubes were checked by the number of tubes used. A score of 20 (or above) is deemed a thorough survey.
- 4.5 A total of 381 tubes were installed onsite which will skew the Index of Probability and the appropriate score would be achieved very quickly due to the number of tubes installed. Therefore, the surveys have been carried out throughout the season (May to September) to ensure the tubes have been left out for several months.

<sup>1</sup> Bright, Morris & Mitchell-Jones (2006) *The Dormouse Conservation Handbook*. English Nature, Peterborough.

<sup>2</sup> Chanin & Woods (2003) *English Nature Report No. 524 on nest tube surveying*. English Nature, Peterborough.



## 5.0 RESULTS

### Desk Study

- 5.1 No records of dormice were returned Suffolk Biological Records Centre from within a 1km radius of the site boundary.
- 5.2 Dr Simone Bullion, The Senior Conservation Adviser at Suffolk Wildlife Trust, had commented that dormice records had been found in the surrounding area. Informal records include a dormouse nest which was found within some bramble near to Haverhill Disused Railway County Wildlife Site (CWS) and a potential dormouse handed into a veterinary clinic within Haverhill in November 2014.

### Field Survey (Figure 1)

#### Nesting Tubes

- 5.3 Dormice tubes were spread along suitable hedgerows and woodland compartments throughout the site (See Figure 1). The more suitable habitats were those that had a dense canopy coverage, which provide a continuous corridor of movement without individuals needing to access the ground and a range of foraging opportunities.
- 5.4 A network of thirty-one hedgerows was recorded across the site, varying in structural and botanical quality with the more valuable hedgerows generally within the centre of the site. The large majority of hedgerows comprised 10-30% gaps, they were therefore of suboptimal potential for dormice. Hawthorn, blackthorn and field maple were the most prevalent canopy species but many hedgerows commonly contained other species including ash, English oak and dog rose. Great Field Plantation (W5 & W7) provided foraging potential with hazel and hawthorn occurring, however, there was little understorey coverage and the areas were open to public access.
- 5.5 The hedgerows within the site boundary were assessed for their value to wildlife and two of the thirty-one hedgerows were assessed as being 'important' under the Hedgerow Regulations 1997; these were hedgerows H1 and H19. These hedgerows contained a high diversity of woody species and their characteristics such as height, width and form make them important feeding resources, shelter and wildlife corridors.
- 5.6 Hedgerows whereby dormice tubes were installed include H1, H3, H4, H7-H14, H17, H19, H20-H29, the characteristics of these hedgerows can be seen in The Ecological Appraisal in Appendix 9.7. Dormice tubes were also installed within/around woodland W1, W4, W5, W6, and W7.

**Table 2. Haverhill Dormice Tube Checking Dates**

Survey	Date	Dormouse Evidence Recorded
	16 <sup>th</sup> March 2015	Instalment date
1	11 <sup>th</sup> May 2015	None
2	23 <sup>rd</sup> June 2015	None
3	24 <sup>th</sup> July 2015	None
4	12 <sup>th</sup> August 2015	None
5	29 <sup>th</sup> September 2015	Dormice nest found in nesting tube 293
6 (Nesting Tube Collection)	7 <sup>th</sup> October 2015	Dormice nest found in nesting tube 293

- 5.7 The 381 tubes throughout the site were checked till September, giving an index score of 160 ((4 x 8) + (2 x 8) + (2 x 8) + (5 x 8) + (7x8)), which is much higher than the recommended effort score of 20 (refer to paragraph 4.4). However, absence cannot be assumed based on the survey effort, but through surveys during a season<sup>2</sup>. The sixth check in October has not been included in the survey effort calculation, as only those tubes not collected in September were removed/checked.



Photo 1 & 2. A partial dormice nest within nesting tube 293 recorded in September 2015

- 5.8 The check on the dormice nesting tubes in September found that there was one nest within tube 293, this consisted of a number green leaves with the start of a woven structure. The tube was located within the lower canopy of a woodland margin which runs adjacent to the stream which ran through the site (Figure 1). The leaves would need to have been collected from surrounding branches, and dormice are the only species with the agility to do this. Wood mice do collect leaves but these are usually from the opening of the tube and consist of brown leaves. During the check of the nest no individuals were recorded within it.

- 5.9 To confirm that this was dormice nest, the pictures were shown to Ian White the dormouse and training officer at People's Trust for Endangered Species; who confirmed that the nest was likely to have been dormice.

#### **Survey Limitations**

- 5.10 In August all of the field margins, inclusive of the hedgerows, were subjected to regular cutting regimes. This was particularly an issue along the western boundary where hedgerows would be cut back exposing the nesting tubes and breaking tubes in that area, which were then replaced.
- 5.11 Some of the linear tree groups, in particularly in the south and north-east of the site, had a largely exposed understorey which was not suitable for dormice. The tree canopies consisted of a number of semi-mature and mature tree species, these had canopies which were well developed, although widely spaced. The branches between them may create arboreal linkages, however these were high up in the canopy and could not be easily accessed without climbing equipment. There were a few lower branches, however these were very exposed and due to the site being used by members of the public, traps were not installed as densely as other areas.

## 6.0 CONCLUSION

- 6.1 During the check of the 381 nest tubes installed throughout the site, the only evidence of dormice was the presence of a partial nest within one tube located along a woodland belt adjacent to stream that runs south easterly through the site. This nest was found during the September check, whereby a loose woven structure was found with green leaves, it looks like the start of a nest but at the time of examination no individuals were found.
- 6.2 Throughout the previous surveys period there was no evidence that this species was present, and there was also an absence of other small mammals which typically use nest tubes. There was also a lack of hazel within the site, and those that were present had limited fruiting bodies, whereby a nut search could not be successfully undertaken.
- 6.3 There were no records held by Suffolk Biological Records Centre, however there was reports of a dead dormouse being handed into a local vet and a nest found within some bramble near the Haverhill Disused Railway CWS, located approximately 492m south of the site, however the precise location is not known and this could be further. There does not appear to be any direct linkages between this location and the site as it is separated by the residential area of Chalkstone, which includes a number of dwellings and roads.
- 6.4 A rough estimate of the population can be assumed by the number of dormice found in boxes in May divided by the area (in ha) covered during the nest box exercise. However during the surveys conducted in 2015, dormice evidence was only found during the September survey, therefore this calculation cannot be worked out. It is anticipated that there is a small population of dormice within the site, as it would be expected that more evidence would have been found at the peak periods of activity in May & August (Table 1). Suffolk has been identified as having widespread populations based on The Dormouse Conservation Handbook, despite there being no records within the immediate surroundings. The population of dormice within the site is of **local value**.
- 6.5 The habitat losses around the areas where the nest was found will be limited as the access roads proposed through the linear woodland will use existing gaps, thus limiting habitat losses, however there is potential for commuting corridors to be interrupted. There will be approximately 15m of hedgerow H24 removed, which runs north ward from the dormice record; the remaining hedgerow and woodland losses occur away from the record but within habitats that have been surveyed in 2015. There will be approximately 183m of hedgerow loss (H4, H9, H11 to H14, H19, H21, H23/H24), which is less than the 300m requisite stated on the government website ([www.gov.uk](http://www.gov.uk)) and below the 1 – 1.5 ha of woodland (1.4ha lost); beyond which translocation is recommended.
- 6.6 The dormice population seem to be confined to a small area of the site, and such habitat losses are not expected to have detrimental effect as the species is likely to be absent. Habitat losses around the dormice will be minimal, and where vegetation removal is required it will be licensable using persuasion methods, either or:
- Winter removal: removal of vegetation down to 600mm during the period when dormice are hibernating at ground level (November to March) by hand. Removal of remaining vegetation when dormice are active again, preferably May, September and October when adults do not have dependant young. This method is preferable to ensure removal does not occur during the bird nesting season.

- Summer clearance: removal of vegetation by hand during the period when dormice are active May – October. Remove vegetation slowly in one direction to allow unhindered dispersal of any individuals in hedgerow. Removal should preferably be during May, September and October when adults do not have dependant young.

6.1 It is also recommended that the following is included within a method statement during construction:

- A designated ecological clerk of works should be notified of any activities likely to result in disturbance or removal of hedgerows / woody vegetation and works should not commence unless permission is granted.
- All hedgerows to be fully fenced off with a minimum buffer and protected from disturbance including the storage of materials or machinery. On site construction workers should be briefed regarding the importance of the hedgerows.
- Standard Pollution Prevention and Control protocol should be followed to ensure hedgerows and dormice are not damaged / killed by pollution from spillage or dust etc.
- The opportunity to allow Installation of wooden nest boxes into offsite connecting habitat should be investigated as this would provide additional nesting habitat and protection for dormice away from the residential development.
- If a dormouse is disturbed during works the ecological clerk of works should be contacted. Guidance for such an eventuality is given in the Dormouse Conservation Handbook and this procedure should be followed.

6.2 The proposals will require a Natural England Dormouse mitigation licence to legitimise the works, and at both the construction and operational phases the removal and management of potential dormouse habitat will require a Natural England approved method statement. Providing suitable mitigation is in place, it is considered that the potential effects of the proposal will be **negligible** and a potential for a **minor beneficial** effect through improved connectivity.

## 7.0 MITIGATION MEASURES

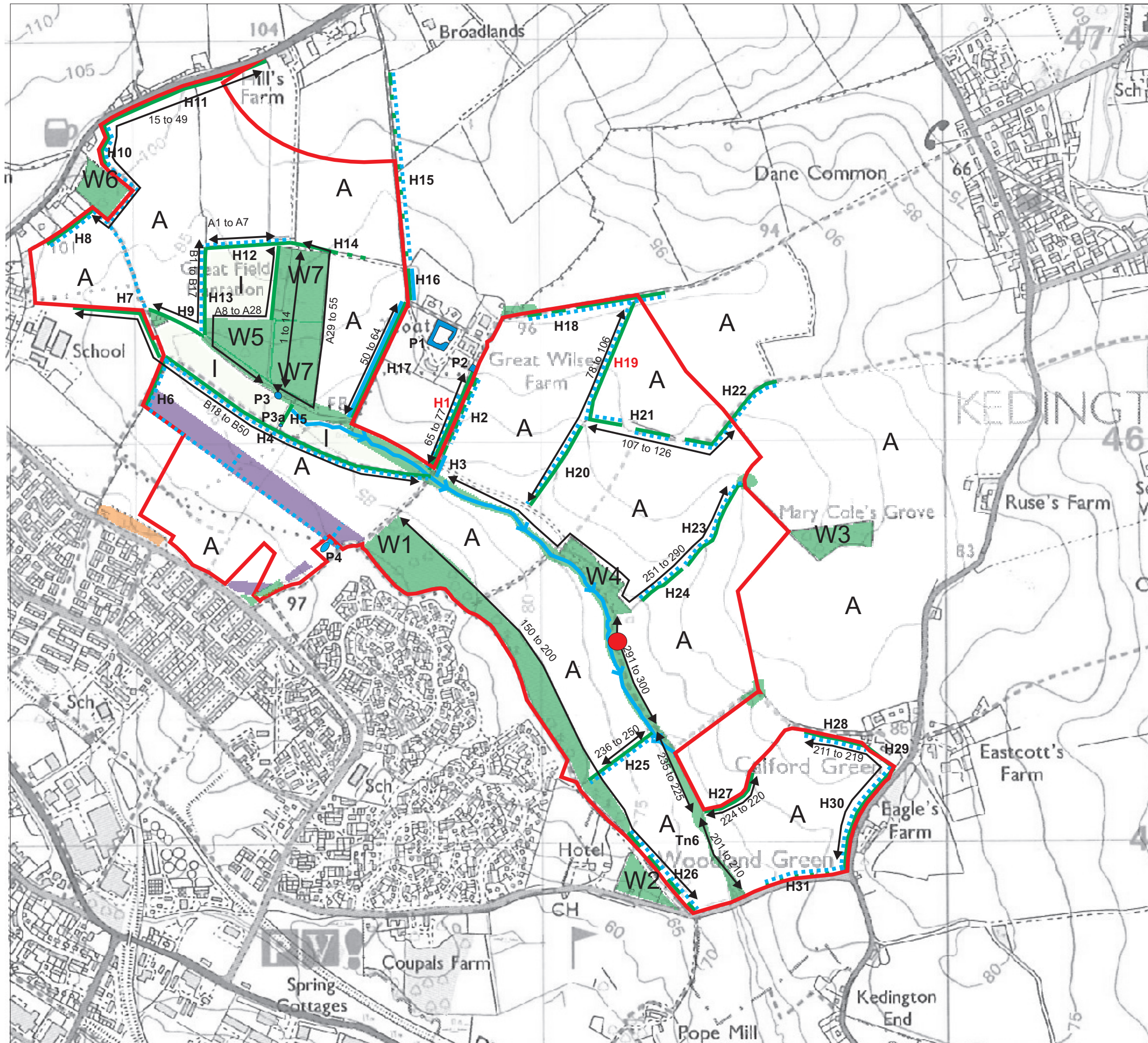
7.1 The current framework plan will incorporate the linear habitats within which the dormice nest was found, whereby the green infrastructure (GI) will follow the existing stream which will link to more extensive areas of GI in the south east of the site, where new woodland compartments and linear hedgerows will be incorporated.

7.2 Additional planting will be undertaken throughout the site whereby existing gaps in linear features and under canopy habitats will be planted with native species. The species planted will be of benefit to wildlife, with a particular focus on those that provide structural cover and a foraging resource for dormice.

7.3 The woodland compartments will have their canopies thinned to allow more light to penetrate through, these areas will then be planted with species that will benefit dormice with hazel being the most important species, but also oak, honeysuckle, hawthorn and wayfaring trees; it is also important that bramble is allowed to establish as this will provide a autumnal foraging resource. Where thinning of the woodland is undertaken it is still important that canopy linkages exist, even if these are higher in the canopy, if such linkages are removed then the

understorey material should be laid on the ground in linear lines; this would potentially allow dormice to move through the wood. All new planting within the woodland will need to be fenced off to ensure that they are not grazed upon by deer.

- 7.4 A continuous management strategy would need to be set up and detailed within an Ecological Management Plan, this will include such practices as coppicing, which will help to create and sustain habitats for dormice, this renews understorey supporting insects and increase vigorous growth. Coppicing is particularly important for hazel, if not managed it decreases in fruiting bodies and over shades areas, reduce linkages.
- 7.5 The current record of dormice is restricted to a small section of linear woodland, the current parameters plan will buffer this area with GI, and will have enhancements are previously mentioned. There will be access roads created within the site that will cross linear features, one of which occurs a few meters to the south of the recorded nest. Dormice do not travel far from their nests, approximately 70m, therefore it is likely that the dormice recorded would utilise habitats within this radius which would include woodland compartment W4. Between the nest and woodland W4 there will be no bisections of linear features, in fact these will continue unimpeded until the crossing for Mary Cole's View is instated. To the south an access road will constructed but again this is located away from the nest. As mentioned previously existing habitats will be enhanced with additional planting and new habitats created within GI that will favour dormice, thus continuing a favourable population growth within the site.
- 7.6 Where there are breaks in linear features, for access roads, these gaps will be bridged by planting taller shrub and tree species either side, whereby the upper canopy will continue links. Such mitigation measures are similar to the 'hop overs' suggested for bats, however for dormice the vegetation would need to be touching. It will take a number of years for such linkages to be formed, although where possible mature trees/shrubs will be planted to speed up the process; therefore it is important that the habitats within which the dormice are located are adequately planted with a range of species and maturity that will provide refuge and foraging.
- 7.7 Habitats to the south of the stream will also be enhanced with additional planting, and linkages across the stream will be possible with existing canopies and also new species planting, this will therefore increase the home range further.



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- Site Boundary
- A Arable Fields
- Semi-Natural Broadleaf Woodland
- I Improved Grassland
- New Plantation Woodland
- Amenity Grassland
- TN1 Target Note
- Hedgerow with Reference
- Hedgerow of importance under REGS
- P2 Pond
- Watercourse
- Dry Ditch
- Wet Ditch
- Dormouse Tube Locations
- Dormouse Nest Location

Hallam Land Management Ltd

Great Wilsey Park,  
Haverhill, Suffolk

**DORMOUSE TUBE LOCATIONS AND  
HABITAT PLAN**

Not to scale      KAW / DAH      15.10.2015

**Figure 1**      **5055-E-01**