The Great Grid Upgrade

Sea Link

# Sea Link

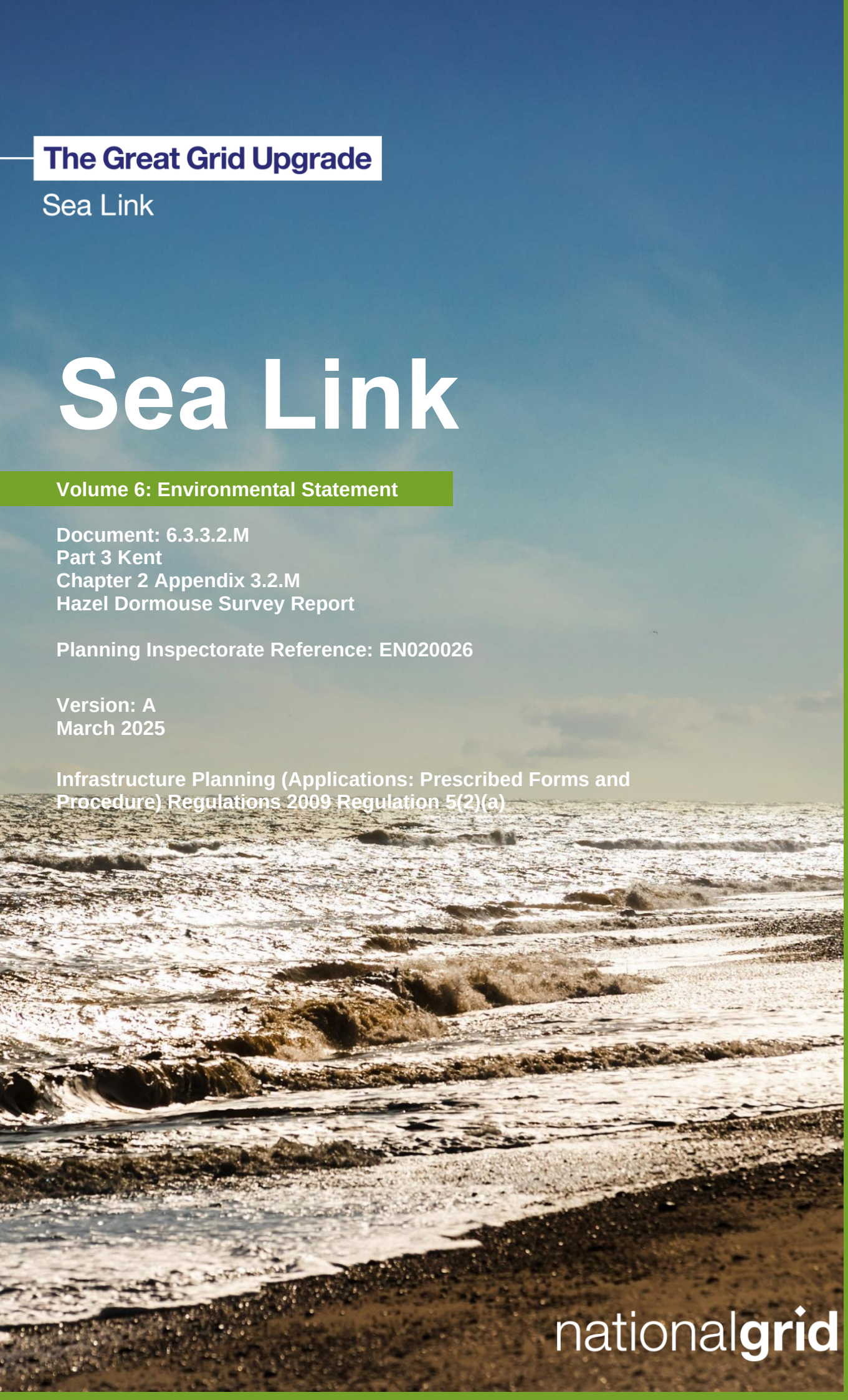
**Volume 6: Environmental Statement**

**Document: 6.3.3.2.M**
**Part 3 Kent**
**Chapter 2 Appendix 3.2.M**
**Hazel Dormouse Survey Report**

**Planning Inspectorate Reference: EN020026**

**Version: A**
**March 2025**

**Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 Regulation 5(2)(a)**



nationalgrid

Page intentionally blank

# Contents



## Table of Tables

# 1. Hazel Dormouse Survey Report

## 1.1 Introduction

### Background

1.1.1 The Sea Link Project (hereafter referred to as the 'Proposed Project') is a proposal by National Grid Electricity Transmission plc (hereafter referred to as National Grid) to reinforce the transmission network in the southeast and East Anglia. The Proposed Project is required to accommodate additional power flows generated from renewable and low carbon generation, as well as accommodating additional new interconnection with mainland Europe. This would be achieved by reinforcing the network with a High Voltage Direct Current (HVDC) Link between the proposed Friston substation in the Sizewell area of Suffolk and the existing Richborough to Canterbury 400 kV overhead line close to Richborough in Kent.

1.1.2 The purpose of this document is to detail the results of presence/likely absence surveys for hazel dormouse (Muscardinus avellanarius) conducted in relation to the Kent Onshore Scheme Order Limits.

1.1.3 The baseline findings of this report provide information on any potential ecological constraints associated with hazel dormouse, for incorporation into the **Application Document 6.2.3.2 Part 3 Kent Chapter 2 Ecology and Biodiversity**.

1.1.4 This appendix should be read in conjunction with the following figures:

- **Application Document 6.4.3.2.M Kent Dormouse Survey Report**.

### Scope

1.1.5 Survey areas were identified based on mapping data, aerial imagery and observations made during the extended Phase 1 habitat survey. The survey areas are shown in **Application Document 6.4.3.2.M.1 Kent Dormouse Survey Results**.

1.1.6 This report aims to confirm the presence or likely absence of hazel dormice within the Kent Onshore Scheme Order Limits through nest tube surveys. The findings of the hazel dormouse survey have informed the ecological impact assessment and identification of mitigation measures (where required) which are reported in **Application Document 6.2.3.2 Part 3 Kent Chapter 2 Ecology and Biodiversity**.

## 1.2 Relevant Wildlife Legislation

1.2.1 The hazel dormouse is a European Protected Species (EPS), afforded full protection under the Wildlife and Countryside Act 1981 (as amended) (HM Government, 1981) and the Conservation of Habitats and Species Regulations 2017 (as amended) (HM Government, 2017). Together this legislation makes it an offence to:

- deliberately capture or kill, injure or disturb a hazel dormouse;
- damage or destroy a breeding site or resting place of a hazel dormouse;

- keep, transport, sell or exchange, or offer for sale or exchange a live or dead hazel dormouse or any part of a hazel dormouse; and
- cause disturbance which is likely to impair a hazel dormouse's ability to survive, breed, hibernate and/or migrate and to intentionally or recklessly disturb a hazel dormouse while it is occupying a structure or place which it uses for that purpose.

1.2.2 Note that, under the Conservation of Habitats and Species Regulations 2017 (as amended), damaging or destroying a breeding site or resting place is an offence regardless of whether the act was deliberate or not.

1.2.3 Hazel dormouse is listed as a species of principal importance within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (HM Government, 2006).

## 1.3 Methodology

### Desk Study

1.3.1 A desk study was undertaken in June 2022 and updated in October. The desk study requested records of the protected and notable species hazel dormouse (HM Government, 2006, (Kent Nature Partnership, 2020)), within the preceding ten years and within a 2 km radius of the Kent Onshore Scheme Order Limits from the Kent and Medway Biological Records Centre.

### Nest Tube Survey

1.3.2 A total of 286 hazel dormouse nest tubes and five hazel dormouse nest boxes were set out within suitable habitats for hazel dormouse within and adjacent to the Kent Onshore Scheme Order Limits. This was undertaken by suitably experienced ecologists during 2023 and 2024. Dormouse nest tubes were installed at 20 m intervals in suitable habitats in accordance with best practice guidance specified in the Dormouse Conservation Handbook (Bright, Morris, & Mitchell-Jones T, 2006). Nest tubes (wooden/plastic nest tubes 250 mm long and 65 mm square with a wooden tray that extends beyond the end of the tube by 55 mm) were secured just below branches in the suitable habitat to encourage hazel dormice to nest within them. Nest boxes were also secured to the trunks of suitable trees in dense woodland with the entrance hole facing towards the trunk, to provide supplementary information (see **Application Document 6.4.3.2.M.1 Kent Dormouse Survey Results** for tube and box locations).

1.3.3 Owing to the size of the Kent Onshore Scheme Order Limits and presence of features such as roads presenting barriers to hazel dormouse movement, the hazel dormouse nest tubes were grouped into survey Zones A to D as follows:

- Zone A – consisted of a single species poor hedgerow bordering an arable field to the south and the A256 to the north. Zone A was in a single segment A1.
- Zone B. Due to the size of Zone B this was subdivided for survey and access purposes into segments B1 to B8.
    - B1 habitats consisted of hedgerow to the west of the A259, including a section adjacent to semi-natural broad-leaved woodland.
    - B2 Habitats consisted of scattered scrub adjacent to two arable fields and close to the fishing lakes.

- B3 habitats consisted of dense scrub adjacent to arable fields.
- B4 contained no suitable habitats and refugia were not placed.
- B5 habitats consisted of species poor hedgerow alongside arable land.
- B6 habitats consisted of rushes with no suitable habitats where refugia were not placed.
- B7 contained no suitable habitats and refugia were not placed.
- B8 habitats consisted of semi-natural broad-leaved woodland.

- Zone C. Due to the size of Zone C this was subdivided for survey and access purposes into segments C1 to C3.
  - C1 habitats consisted of a species poor hedge with arable land to the southwest and a railway line to the northeast.
  - C2 habitats consisted of an enclosed field of semi-improved neutral grassland surrounded by species poor hedgerow and lines of semi-natural broadleaved woodland with a scrub understorey.
  - C3 habitats consisted of a species poor hedge with semi-improved neutral grassland to the southwest and a ditech to the northeast.
- Zone D. Due to the size of Zone D this was subdivided for survey and access purposes into segments D1 to D2.
  - D1 habitats a hedge with trees bordered by marginal and inundation vegetation and the River Stour to the north and arable land to the south.
  - D2 habitats a hedge with trees bordered by marginal and inundation vegetation and the River Stour to the north and arable land to the south.

1.3.4 Although Zones A to D were subdivided for survey and access purposes, as habitats are connected within each Zone the scoring indices have been calculated by Zone.

1.3.5 Table 1.1 provides a summary of the survey locations, the number of tubes set out at these locations and when these were set out. Due to access restrictions not all of the tubes/boxes were set out at the same time. This is taken into consideration in the scoring index calculations.

## Table 1.1 Summary of survey locations

| Zone | Segment | No. tubes and boxes | Date of refugia set-up |
|---|---|---|---|
| Zone A Total tubes: 54 | A1 | 54 tubes | 18 to 19 July 2023 |
| Zone B | B1 | 42 tubes, 5 boxes | 18 to 19 July 2023 |

| Zone | Segment | No. tubes and boxes | Date of refugia set-up |
|---|---|---|---|
| Total tubes: 104 | B2 | 17 tubes | 18 to 19 July 2023 |
| | B3 | 5 tubes | 18 to 19 July 2023 |
| Total boxes: 5 | B4 | 0 – no suitable habitat in segment | 18 to 19 July 2023 |
| | B5 | 10 tubes | 18 to 19 July 2023 |
| | B6 | 0 – no suitable habitat in segment | 18 to 19 July 2023 |
| | B7 | 0 – no suitable habitat in segment | 18 to 19 July 2023 |
| | B8 | 30 tubes | 18 to 19 July 2023 |
| Zone C | C1 | 27 tubes | 18 to 19 July 2023 |
| Total tubes: 76 | C2 | 41 tubes | 18 to 19 July 2023 |
| | C3 | 8 tubes | 18 to 19 July 2023 |
| Zone D | D1 | 25 tubes | 10 to11 October 2023 |
| Total tubes: 52 | D2 | 27 tubes | 10 to11 October 2023 |

## Scoring Index

1.3.6 There is an established scoring system to ensure any nest-tube survey is sufficiently robust (Table 1.2). All of the monthly scores for the period over which the tubes are in place are added together (provided that the tubes are inspected on a monthly or bi-monthly basis during the recognised survey season of May to November). Assumed absence should not be based on a search effort score of less than 20 (Channin & Woods, 2003). This is the index of probability of finding evidence of dormice in nest-tubes in any one month. These monthly scores are based on a minimum of 50 tubes having been deployed in a given survey area. The scores should be adjusted to account for situations in which greater or fewer than 50 tubes are deployed. Therefore the monthly scores can be doubled for 100 tubes but should be halved for 25. However, where more than 100 tubes are used, the search effort scores are increased up to a maximum multiplier of 2.

1.3.7 The total index score for the survey period is a sum of the check month score and the previous month score provided no more than bi-monthly checks occur, as a fraction of the 50 tubes score below for the number of tubes found and checked in that month. A hypothetical scoring situation is provided below as an example of the calculations:

- If 65 tubes were set up in March and checks occurred in May and July finding all 65 tubes each time, the total index score would include April, May, June and July. The score for April would be calculated as 1 / 50 = 0.02 x 65 = 1.3. May at 5.2, June at 2.6 and July at 2.6. The total index score for this example would, therefore, be 11.7.

### Table 1.2 Scoring index based on 50 nest tubes

| Month | Survey effort score (based on 50 nest tubes) |
|---|---|
| January | 0 |
| February | 0 |
| March | 0 |
| April | 1 |
| May | 4 |
| June | 2 |
| July | 2 |
| August | 5 |
| September | 7 |
| October | 2 |
| November | 2 |
| December | 0 |

## Nest Tube Check Dates and Environmental Conditions

1.3.8 Nest tube checks were undertaken on four occasions between September 2023 and October 2024 within each Zone/ segment by two ecologists, one of whom is registered to use the WML-CL10a Natural England hazel dormouse class licence (Class 1 survey licence). The timings of each check varied according to when access was granted for set up and subsequent checks, as detailed within Table 1.3 Weather conditions for each survey are detailed in Table 1.4.

### Table 1.3 Dates of nest tube checks by zone

| Zone | Tubes | Set Out Date | 20 to 22 September 2023 | 14 to 16 November 2023 | 13 to 15 May 2024 | 23 to 25 July 2024 | 26 September 2024 |
|---|---|---|---|---|---|---|---|
| A1 | 54 | 18 to 19 July 2023 | Check 1 | Check 2 | Check 3 | Check 4 | - |
| B1 | 42 | 18 to 19 July 2023 | Check 1 | Check 2 | Check 3 | Check 4 | - |

| Zone | Tubes | Set Out Date | 20 to 22 September 2023 | 14 to 16 November 2023 | 13 to 15 May 2024 | 23 to 25 July 2024 | 26 September 2024 |
|---|---|---|---|---|---|---|---|
| B2 | 17 | 18 to 19 July 2023 | Check 1 | Check 2 | Check 3 | Check 4 | - |
| B3 | 5 | 18 to 19 July 2023 | Check 1 | Check 2 | Check 3 | Check 4 | - |
| B5 | 10 | 18 to 19 July 2023 | Check 1 | Check 2 | Check 3 | Check 4 | - |
| B8 | 30 | 18 to 19 July 2023 | Check 1 | Check 2 | Check 3 | Check 4 | - |
| C1 | 27 | 18 to 19 July 2023 | Check 1 | Check 2 | Check 3 | Check 4 | - |
| C2 | 41 | 18 to 19 July 2023 | Check 1 | Check 2 | Check 3 | Check 4 | - |
| C3 | 8 | 18 to 19 July 2023 | Check 1 | Check 2 | Check 3 | Check 4 | - |
| D1 | 25 | 10 to11 October 2023 | - | Check 1 | Check 2 | Check 3 | Check 4 |
| D2 | 27 | 10 to11 October 2023 | - | Check 1 | Check 2 | Check 3 | Check 4 |

## Table 1.4 Weather Conditions for Nest Tube Surveys

| Date of Survey | Weather Conditions |
|---|---|
| 20/09/2023 | 19-21ºC, 100% cloud cover, fresh gale (Beaufort 8), dry |
| 21/09/2023 | 15-16ºC, 100% cloud cover, moderate breeze (Beaufort 4), dry |
| 22/09/2023 | 14-17ºC, 100% cloud cover, moderate breeze (Beaufort 4), dry |
| 14/11/2023 | 9-12ºC, 100% cloud cover, strong breeze (Beaufort 6), light rain |
| 15/11/2023 | 9-12ºC, 40 - 50% cloud cover, strong breeze (Beaufort 6), dry |
| 16/11/2023 | 8-10ºC, 100% cloud cover, fresh breeze (Beaufort 5), light rain |
| 13/05/2024 | 16-18ºC, 100% cloud cover, strong breeze (Beaufort 6), dry |
| 14/05/2024 | 13-15ºC, 100% cloud cover, strong breeze (Beaufort 6), light rain |
| 15/05/2024 | 15-17ºC, 0% cloud cover, strong breeze (Beaufort 6), dry |
| 23/07/2024 | 20-23ºC, 100% cloud cover, fresh breeze (Beaufort 5), dry |

| Date of Survey | Weather Conditions |
|---|---|
| 24/07/2024 | 18-22°C, 10-30% to 40-50% cloud cover, light breeze (Beaufort 2) to gentle breeze (Beaufort 3), dry |
| 25/07/2024 | 17-19°C, 100% cloud cover, near gale (Beaufort 7), dry |
| 10/09/2024 | 18°C, 100% cloud cover, light breeze (Beaufort 2), recent rain |
| 26/09/2024 | 17°C, 60-90% cloud cover, light air (Beaufort 1), recent rain |

## Limitations

### Desk study

1.3.9 The aim of a desk study is to help characterise the baseline context of the Kent Onshore Scheme Order Limits with regards to dormouse and provide valuable background information that would not be captured by a single on-site survey alone. Information obtained during a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records does not necessarily mean that the species does not occur in the Study Area. Likewise, the presence of records for particular species does not automatically mean that these still occur within the area of interest or are relevant in the context of the Kent Onshore Scheme Order Limits.

### Field survey

1.3.10 It should be noted that an ecological survey represents a ‘snapshot’ of habitats and species at a specific point in time. Ecosystems are dynamic and constantly changing, and therefore species may move, or new species may be recorded in subsequent years. For this reason, and in accordance with current CIEEM guidance, (The Chartered Institute of Ecology and Environmental Management, 2019) the field survey data detailed in this report are likely to be valid for 12-18 months unless species specific guidance dictates otherwise. Further to this, within their standing advice Natural England consider that survey data up to three years old is acceptable for hazel dormouse if the habitats have not significantly changed since the survey was conducted (HM Government, 2022). Therefore, it is recommended an appropriately qualified ecologist assesses whether there have been any significant changes to the habitats within the Kent Onshore Scheme Order Limits at 18 months, where no significant changes to habitats, updated surveys are likely to be required where survey data reaches three years old from the start of the surveys in September 2023. Advice should be sought from an appropriately qualified ecologist to determine survey scope and methods.

1.3.11 A check could not be undertaken of the hazel dormouse nest tubes within Zones D1 and D2 during May 2024 due to the presence of cattle presenting a health and safety constraint. However, surveys in Zone D were undertaken in November 2023 and July and September 2024 therefore this is not considered to be a significant constraint to the survey results.

1.3.12 Zones B4, B6 and B7 were originally within the survey scope, however were removed due to the absence of suitable habitat to support hazel dormouse. As such the absence of survey data for these zones does not pose a constraint to the survey results.

1.3.13 Due to a combination of access restrictions, nest tubes that could not be relocated and general degradation of nest tubes and inserts due to the weather, over the survey period a lower number of tubes were checked than were set out. However, given the total number of nest tubes checked across the Site this is not considered to be a significant constraint to the survey results.

## 1.4 Results

### Desk Study

1.4.1 The desk study did not return any records of hazel dormouse within 2km of the Kent Onshore Scheme in the past ten years.

### Nest Tube Presence/ Absence Survey

#### Zone A

1.4.2 The findings of the hazel dormouse refugia presence/absence surveys carried out are set out in Table 1.5 to Table 1.8 below.

1.4.3 No evidence of hazel dormouse was found during surveys undertaken in September and November 2023 and May and July 2024.

1.4.4 Evidence of use by wood mouse (*Apodemus sylvaticus*) was recorded in September 2023.

**Table 1.5 Dormouse nest tube survey results 20 to 22 September 2023**

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| 20/09/2023 | Zone A.1-14 | Tube | Wood mouse nest |
| 20/09/2023 | Zone A.1-25 | Tube | Wood mouse nest |
| 20/09/2023 | Zone A.1-29 | Tube | 1 wood mouse in nest |
| 20/09/2023 | Zone A.1-39 | Tube | Hazelnut in tube - no bite marks. |
| 20/09/2023 | Zone A.1-40 | Tube | Gnawed hazel nuts – not dormouse |
| 20/09/2023 | Zone A.1-46 | Tube | 3 unchewed hazel nuts and 1 green leaf |
| 20/09/2023 | Zone A.1-48 | Tube | 3 wood mice |
| 20/09/2023 | Zone A.1-49 | Tube | 2 wood mice |

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| 20/09/2023 | Zone A.1-50 | Tube | 3 uneaten hazelnuts |
| 20/09/2023 | Zone A.1-51 | Tube | 1 wood mouse |
| 20/09/2023 | Zone A.1-54 | Tube | Wood mouse in nest with green leaves |

### Table 1.6 Dormouse nest tube survey results 14 to 16 November 2023

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| No evidence found | No evidence found | No evidence found | No evidence found |

### Table 1.7 Dormouse nest tube survey results 13 to 15 May 2024

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| No evidence found | No evidence found | No evidence found | No evidence found |

### Table 1.8 Dormouse nest tube survey results 23 to 25 July 2024

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| No evidence found | No evidence found | No evidence found | No evidence found |

1.4.5 Based on the methodology in the Dormouse Conservation, the following survey effort score is achieved. (Note that a score of 20 or more is required to assume a likely absence of hazel dormouse):

- 24.58 for habitats in Zone A

1.4.6 A full breakdown of the calculation can be found in **Annex 2.M.1**.

## Zone B

#### Nest tube presence/absence survey

1.4.7 The findings of the hazel dormouse refugia presence/absence surveys carried out are set out in Table 1.9 to Table 1.12.

1.4.8 In September 2023, a structure that was possibly the beginning of a hazel dormouse nest was found in refugia Zone B.3-3, this was recorded as a wood mouse nest in the next visit. During May 2024 a structure that was a potential hazel dormouse nest was

identified in refugia Zone B.1b-12. During July 2024, four structures which could potentially be hazel dormouse nests were identified.

## Table 1.9 Dormouse nest tube/box survey results 20 to 22 September 2023

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| 21/09/2023 | Zone B.1a-35 | Tube | Wood mouse nest |
| 21/09/2023 | Zone B.1a-37 | Tube | Wood mouse nest |
| 21/09/2023 | Zone B.1b-11 | Tube | Wood mouse nest |
| 21/09/2023 | Zone B.1b-14 | Tube | Wood mouse nest |
| 21/09/2023 | Zone B.1b-19 | Tube | Wood mouse nest |
| 21/09/2023 | Zone B.1b-24 | Tube | Wood mouse nest |
| 21/09/2023 | Zone B.1b-25 | Tube | Wood mouse nest |
| 21/09/2023 | Zone B.1b-28 | Tube | Wood mouse nest |
| 20/09/2023 | zone B.1c-4 | Box | Wood mouse nest |
| 20/09/2023 | Zone B.1c-1 | Box | Wood mouse in nest |
| 20/09/2023 | Zone B.1c-2 | Box | 2 wood mice in nest |
| 20/09/2023 | Zone B.2-12 | Tube | Wood mouse nest |
| 20/09/2023 | Zone B.3-5 | Tube | Wood mouse nest |
| 20/09/2023 | Zone B.3-3 | Tube | Potential hazel dormouse nest. Beginning of woven structure and use of stripped bark |
| 20/09/2023 | Zone B.8-6 | Tube | 2 wood mice in nest |
| 20/09/2023 | Zone B.8-8 | Tube | Wood mouse in nest |
| 20/09/2023 | Zone B.8-14 | Tube | 2 wood mice in nest |
| 20/09/2023 | Zone B.8-17 | Tube | Wood mouse nest |
| 20/09/2023 | Zone B.8-18 | Tube | Wood mouse nest |

## Table 1.10 Dormouse nest tube survey results 14 to 16 November 2023

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| 14/11/2023 | Zone B.1b-16 | Tube | 2 wood mice |
| 14/11/2023 | Zone B.1b-12 | Tube | Wood mouse nest |
| 14/11/2023 | Zone B.2-3 | Tube | Wood mouse nest |
| 14/11/2023 | Zone B.3-2 | Tube | Wood mouse nest |
| 20/09/2023 | Zone B.3-3 | Tube | 2 wood mice in nest |
| 14/11/2023 | Zone B.5-2 | Tube | Wood mouse in nest |
| 14/11/2023 | Zone B.5-3 | Tube | 5 wood mice in nest |
| 14/11/2023 | Zone B.5-6 | Tube | Wood mouse nest |
| 14/11/2023 | Zone B.5-7 | Tube | 4 wood mice in nest |
| 14/11/2023 | Zone B.5-9 | Tube | Wood mice in nest |
| 14/11/2023 | Zone B.5-10 | Tube | Wood mouse in nest |
| 14/11/2023 | Zone B.8-2 | Tube | Food cache |
| 14/11/2023 | Zone B.8-5 | Tube | Wood mouse nest |
| 14/11/2023 | Zone B.8-9 | Tube | Wood mouse nest |
| 14/11/2023 | Zone B.8-19 | Tube | Wood mouse nest |
| 14/11/2023 | Zone B.8-27 | Tube | Wood mice in nest |

## Table 1.11 Dormouse nest tube/box survey results 13 to 15 May 2024

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| 13/05/2024 | Zone B.1b-12 | Tube | Possible hazel dormouse nest |
| 13/05/2024 | Zone B.1c-1 | Tube | 1 wood mouse in nest |
| 13/05/2024 | Zone B.1c-2 | Tube | Wood mouse nest |
| 13/05/2024 | Zone B.1c-4 | Tube | Wood mouse nest |
| 13/05/2024 | Zone B.1c-5 | Tube | 3 wood mice in nest |
| 13/05/2024 | Zone B.2-13 | Tube | Wood mouse nest |

## Table 1.12 Dormouse nest tube survey results 23 to 25 July 2024

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| 23/7/2024 | Zone B.1b-2 | Tube | Field/ bank vole in nest |
| 24/7/2024 | Zone B.2-13 | Tube | Potential hazel dormouse nest |
| 23/7/2024 | Zone B.3-1 | Tube | Potential hazel dormouse nest, but likely field mouse |
| 23/7/2024 | Zone B.3-4 | Tube | Potential hazel dormouse nest |
| 14/11/2023 | Zone B.5-7 | Tube | Potential hazel dormouse nest |

1.4.9 Based on the methodology in the Dormouse Conservation Handbook, the following survey effort score is achieved. (Note that a score of 20 or more is required to assume a likely absence of hazel dormouse):

- 49.28 for habitats in Zone B

1.4.10 A full breakdown of the calculation can be found in **Annex 2.M.1**.

# Zone C

### Nest tube presence/absence survey

1.4.11 The findings of the hazel dormouse refugia presence/absence surveys carried out are set out in Table 1.13 and Table 1.16.

1.4.12 In November 2023 a potential hazel dormouse nest with a part woven structure was found in refugia Zone C.1-5. In refugia Zone C.1-27 a probable (incomplete) hazel dormouse nest was recorded in July 2024. In refugia Zone C.1-9, Zone C.1-11 and Zone C.2-9 possible hazel dormouse nests were identified in July 2024, although these lacked the woven structure which might be expected.

1.4.13 Evidence of use by wood mouse was recorded in September and November 2023.

## Table 1.13 Dormouse nest tube/box survey results 20 to 22 September 2023

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| 21/09/2023 | Zone C.2-3 | Tube | Wood mouse nest |
| 21/09/2023 | Zone C.2-8 | Tube | 3 wood mice in nest |
| 21/09/2023 | Zone C.1-12 | Tube | Wood mouse in nest |
| 21/09/2023 | Zone C.2-12 | Tube | Wood mouse nest |
| 21/09/2023 | Zone C.2-18 | Tube | Food cache and green leaves |
| 21/09/2023 | Zone C.2-32 | Tube | Wood mouse nest |
| 21/09/2023 | Zone C.3-1 | Tube | Wood mouse nest |
| 21/09/2023 | Zone C.3-4 | Tube | Wood mouse nest |

## Table 1.14 Dormouse nest tube survey results 14 to 16 November 2023

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| 15/11/2023 | Zone C.1-1 | Tube | Wood mouse nest |
| 15/11/2023 | Zone C.1-5 | Tube | Possible hazel dormouse nest, some woven structure |
| 15/11/2023 | Zone C.1-6 | Tube | 2 wood mice in nest |
| 15/11/2023 | Zone C.1-9 | Tube | Some woven but short material and likely wood mouse nest |
| 15/11/2023 | Zone C.1-11 | Tube | Wood mouse nest |
| 15/11/2023 | Zone C.1-18 | Tube | Wood mouse nest |

## Table 1.15 Dormouse nest tube/box survey results 13 to 15 May 2024

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| 14/05/2024 | Zone C.1-27 | Tube | Probable hazel dormouse nest (incomplete) |

## Table 1.16 Dormouse nest tube survey results 23 to 25 July 2024

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| 24/07/2024 | Zone C.1-9 | Tube | Potential hazel dormouse nest |
| 24/07/2024 | Zone C.1-11 | Tube | Potential hazel dormouse nest |
| 14/05/2024 | Zone C.1-27 | Tube | Potential hazel dormouse nest |
| 24/07/2024 | Zone C.2-9 | Tube | Potential dormouse nest. Long strands, not woven |

1.4.14 Based on the methodology in the Dormouse Conservation Handbook, the following survey effort scores are achieved. (Note that a score of 20 or more is required to assume a likely absence of hazel dormouse):

- 36.8 for habitats in Zone C.

1.4.15 A full breakdown of the calculation can be found in **Annex 2.M.1**.

# Zone D

### Nest tube presence/absence survey

1.4.16 The findings of the hazel dormouse refugia presence/absence surveys carried out are set out in Table 1.17 to Table 1.20.

1.4.17 No evidence of hazel dormouse was found during surveys undertaken between November 2023 and July 2024.

1.4.18 Evidence of use by wood mouse was recorded in November 2023, May 2024 and July 2024.

1.4.19 Health and safety issues due to the presence of cattle prevented the completion of surveys in Zone D May 2024.

## Table 1.17. Dormouse nest tube survey results 14 to 16 November 2023

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| 15/11/2023 | Zone D.1-14 | Tube | Wood mouse in nest |
| 15/11/2023 | Zone D.1-23 | Tube | Wood mouse nest, some structure |

## Table 1.18. Dormouse nest tube/box survey results 13 to 15 May 2024

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A |

1.4.20 Health and safety issues prevented the completion of surveys in Zone D on these dates and no results were recorded.

## Table 1.19. Dormouse nest tube survey results 23 to 25 July 2024

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| 24/07/2024 | Zone D.2-16 | Tube | Wood mouse nest |

## Table 1.20. Dormouse nest tube/box survey results 26 September 2024

| Date | Refugia Number | Refugia type | Observation |
|---|---|---|---|
| 26/09/2024 | Zone D.1.13 | Tube | 2 wood mice in nest |
| 26/09/2024 | Zone D.2-1 | Tube | Bird nest |
| 26/09/2024 | Zone D.2-3 | Tube | Wood mouse in old bird’s nest |
| 26/09/2024 | Zone D.2-7 | Tube | Wood mouse nest |
| 26/09/2024 | Zone D.2-9 | Tube | Wood mouse nest |
| 26/09/2024 | Zone D.2.10 | Tube | 3 wood mice in nest |
| 26/09/2024 | Zone D.2.11 | Tube | Wood mouse nest |
| 26/09/2024 | Zone D.2.14 | Tube | Wood mouse nest |
| 26/09/2024 | Zone D.2.18 | Tube | Likely wood mouse nest. Green leaved nest, no structure |
| 26/09/2024 | Zone D.2.20 | Tube | Wood mouse nest |

1.4.21 Based on the methodology in the Dormouse Conservation Handbook the following survey effort scores are achieved. (Note that a score of 20 or more is required to assume likely absence of hazel dormouse):

- 14.96 for habitats in Zone D

1.4.22 A full breakdown of the calculation can be found in **Annex 2.M.1**.

## 1.5 Discussion

1.5.1 Hazel dormice are fully protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended). Under this legislation it is an offence to deliberately capture, disturb, injure or kill a hazel dormouse, or to damage or destroy a breeding site or resting place. Hazel dormouse is also listed as a priority species in Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

1.5.2 The desk study did not return any records of hazel dormouse within 2 km of the Kent Onshore Scheme in the past ten years

1.5.3 A total of 286 hazel dormouse nest tubes and five nest boxes were deployed in four zones (A to D) throughout the Kent Onshore Scheme Boundary. In line with best practice guidelines the nest tubes were checked by two suitably qualified ecologists, one of whom is registered to use the Natural England WML-CL10a hazel dormouse class licence (Class 1 survey licence), for evidence of hazel dormice. Where access permitted four survey visits were completed every other month during the April to November survey period following deployment, between September 2023 and September 2024.

1.5.4 Based on the methodology in the Dormouse Conservation Handbook the nest tube checks undertaken within each Zone between September 2023 and September 2024 (irrespective of whether the tubes are actually inspected in that month) gives the following search effort scores, taking account of the total number of nest tubes checked each month and not exceeding a doubling of search effort score where the number of nest tubes checked exceeds 100:

- Zone A: 24.58.
- Zone B: 49.28.
- Zone C: 36.8.
- Zone D: 14.96.

1.5.5 Potential hazel dormouse nests were recorded in Zones B and C. No evidence of hazel dormouse was recorded in Zones A and D. Each zone is separated by a barrier to hazel dormouse movement, such as a major road or canal.

1.5.6 Hazel dormice live at low densities and as a result are difficult to detect. It is considered that hazel dormice are likely absent from Zone A. Given the inconclusive result of the potential presence of a hazel dormouse nest within Zones B and C, and score for the survey effort within Zone D being below the threshold of 20 to record likely absence, it is recommended that updated surveys are completed within Zones B, C and D prior to vegetation clearance being conducted.

1.5.7 Should hazel dormouse or signs of hazel dormouse be discovered, clearance should stop immediately, and a Natural England licence should be obtained before works continue.

# References


Channin, P., & Woods, M. (2003). *English Nature Research Report No 524. Surveying dormice using nesting tubes. Results and experiences from the South West Dormouse Project.* Peterborough: English Nature. Retrieved November 27, 2024, from https://publications.naturalengland.org.uk/file/132012

HM Government. (1981). *Wildlife and Countryside Act 1981*. Retrieved July 11, 2024, from Legislation.gov.uk: https://www.legislation.gov.uk/ukpga/1981/69/contents

HM Government. (2006). *Natural Environment and Rural Communities Act 2006*. Retrieved July 11, 2024, from Legislation.gov.uk: https://www.legislation.gov.uk/ukpga/2006/16/contents

HM Government. (2017). *The Conservation of Habitats and Species Regulations 2017*. Retrieved July 11, 2024, from Legislation.gov.uk: https://www.legislation.gov.uk/uksi/2017/1012/contents/made

HM Government. (2022, January 14). *Hazel dormice: advice for making planning decisions*. Retrieved July 11, 2024, from gov.uk: https://www.gov.uk/guidance/hazel-dormice-advice-for-making-planning-decisions

Kent Nature Partnership. (2020, Feb). *Kent Biodiversity Strategy.* Retrieved from Kent Nature Partnership 2020 to 2045: https://kentnature.org.uk/wp-content/uploads/2022/01/Kent-Biodiversity-Strategy-2020.pdf

The Chartered Institute of Ecology and Environmental Management. (2019). *Advice Note on the Lifespan of Ecological Reports and Surveys.* CIEEM. Retrieved October 08, 2024, from https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf

Kent and Medway Biological Records Centre (2024) Richborough Area Sealink 08/10/2024

National Grid (2023) Preliminary Environmental Information Report Volume 1: Part 1 Kent Onshore Scheme Chapter 3 Ecology and Biodiversity

# Annex 2.M.1 Hazel Dormouse Nest Tube Score Calculations

A.1.1 Calculations for each zone are provided in the tables below.

## Table A.1 Scoring Index calculations for Zone A

| Zone | Tubes | Set Out Date | 20 to 22 September 2023 | | 14 to 16 November 2023 | | 13 to 15 May 2024 | | 23 to 25 July 2024 | |
|---|---|---|---|---|---|---|---|---|---|---|
| A1 | 54 | 18 to 19 July 2023 | 53 | | 53 | | 49 | | | 34 |
| Total tubes in Zone A | | | 53 | | 53 | | 49 | | | 34 |
| Index Score for Month (based on maximum of 100 tubes) | | | August = 5.3 | September = 7.42 | October = 2.12 | November = 2.12 | April = 0.98 | May = 3.92 | June = 1.36 | July = 1.36 |
| Total Score for Zone A | | | 24.58 | | | | | | | |

## Table A.2 Scoring index calculations for Zone B

| Zone | Tubes | Set Out Date | 20 to 22 September 2023 | | 14 to 16 November 2023 | | 13 to 15 May 2024 | | 23 to 25 July 2024 | |
|---|---|---|---|---|---|---|---|---|---|---|
| B1 | 42 | 18 to 19 July 2023 | 42 | | 42 | | 36 | | | 36 |
| B2 | 17 | 18 to 19 July 2023 | 17 | | 17 | | 16 | | | 16 |
| B3 | 5 | 18 to 19 July 2023 | 5 | | 5 | | 5 | | | 5 |
| B5 | 10 | 18 to 19 July 2023 | 10 | | 10 | | 9 | | | 9 |
| B8 | 30 | 18 to 19 July 2023 | 30 | | 30 | | 30 | | | 30 |
| Total tubes in Zone B | | | 104 | | 104 | | 96 | | | 96 |
| Index Score for Month (based on maximum of 100 tubes) | | | August = 10 | September = 14 | October = 4 | November = 4 | April = 1.92 | May = 7.68 | June = 3.84 | July = 3.84 |
| Total Score for Zone B | | | 49.28 | | | | | | | |

## Table A.3 Scoring index calculations for Zone C

| Zone | Tubes | Set Out Date | 20 to 22 September 2023 | | 14 to 16 November 2023 | | 13 to 15 May 2024 | | 23 to 25 July 2024 | |
|---|---|---|---|---|---|---|---|---|---|---|
| C1 | 27 | 18 to 19 July 2023 | 27 | | 27 | | 26 | | | 24 |
| C2 | 41 | 18 to 19 July 2023 | 41 | | 41 | | 41 | | | 37 |
| C3 | 8 | 18 to 19 July 2023 | 8 | | 8 | | 5 | | | 5 |
| Total tubes in Zone C | | | 76 | | 76 | | 75 | | | 66 |
| Index Score for Month (based on maximum of 100 tubes) | | | August = 7.6 | September = 10.64 | October = 3.04 | November = 3.04 | April = 1.44 | May = 5.76 | June =2.64 | July = 2.64 |
| Total Score for Zone C | | | | | | 36.8 | | | | |

## Table A.4 Scoring index calculations for Zone D

| Zone | Tubes | Set Out Date | 14 to 16 November 2023 | 13 to 15 May 2024 | | 23 to 25 July 2024 | | 23 September 2024 | |
|---|---|---|---|---|---|---|---|---|---|
| D1 | 25 | 11 October 2023 | 25 | No access | | 25 | | | 14 |
| D2 | 27 | 11 October 2023 | 27 | No access | | 25 | | | 23 |
| Total tubes in Zone D | | | 52 | 0 | | 50 | | | 37 |
| Index Score for Month (based on maximum of 100 tubes) | | | October/ November = 2.08 | April = 0 | May = 0 | June =2 | July = 2 | August = 3.7 | September = 5.18 |
| | | | | | 14.96 | | | | |

Page intentionally blank

National Grid plc

National Grid House,

Warwick Technology Park,

Gallows Hill, Warwick.

CV34 6DA United Kingdom

Registered in England and Wales

No. 4031152

nationalgrid.com