



NORTH FALLS

Offshore Wind Farm

ENVIRONMENTAL STATEMENT

Appendix 23.5 Hazel Dormouse Survey Report

Document Reference:	3.3.34
Volume:	3.3
APFP Regulation:	5(2)(a)
Date:	July 2024
Revision:	0

Project Reference: EN010119



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Project	North Falls Offshore Wind Farm
Document Title	Environmental Statement Appendix 23.5 Hazel Dormouse Survey Report
Document Reference	3.3.34
APFP Regulation	5(2)(a)
Supplier	Royal HaskoningDHV
Supplier Document ID	n/a

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Revision	Date	Status/Reason for Issue	Originator	Checked	Approved
0	July 2024	Submission	RHDHV	NFOW	NFOW



ECOLOGY
RESOURCES

**Hazel
Dormouse
Survey Report**

**North Falls
Offshore Wind
Farm Ltd**

October 2022



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Rev 3	Gavin Mullan BA (Hons) MCIEEM	11/01/2023

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EXECUTIVE SUMMARY

Ecology Resources Limited was commissioned by Royal HaskoningDHV on behalf of North Falls Offshore Wind Farm Limited to undertake hazel dormouse *Muscardinus avellanarius* presence / likely absence surveys at suitable habitat identified within the proposed onshore project area plus a 50m buffer.

Eighteen survey sites within the proposed onshore project area (plus a 50m buffer) were identified as areas with suitable habitat to support hazel dormice. The full suite of dormouse surveys, achieving a minimum of 20 survey points as recommended by Bright, Morris and Mitchell-Jones (2006), were completed on 17 of these sites. One site (H136) had five survey visits, achieving a survey score of 18 points, due to access restrictions between May and August 2022.

Hazel dormice were found to be present on 12 of the 18 survey sites.

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1. INTRODUCTION

Ecology Resources Limited was commissioned by Royal HaskoningDHV on behalf of North Falls Offshore Wind Farm Limited (NFOW), to undertake hazel dormouse *Muscardinus avellanarius* presence / likely absence surveys of suitable habitats within the onshore project area plus a 50m buffer.

1.1. Project Background

North Falls Offshore Wind Farm (herein North Falls or ‘the project’) is a proposed extension to the operational Greater Gabbard Offshore Wind Farm (GGOW), which is located off the east coast of England in the Southern North Sea and was opened in 2013. North Falls is located to the west of the existing GGOW and at its closest point is approximately 22km offshore. The wind farm is being developed by North Falls Offshore Wind Farm Limited, a joint venture between SSE Renewables and RWE.

North Falls is currently awaiting a formal grid connection offer from National Grid. Whilst this process is ongoing, in order to ensure that adequate baseline data is collected to inform the Environmental Impact Assessment (EIA), North Falls has progressed with site selection of the project’s onshore infrastructure (landfall location, onshore cable route and onshore substation location) at risk. The outputs of North Falls site selection process have then been used to generate a study area for the purposes of undertaking a suite of ecological surveys during 2021 and 2022 so that baseline data for the project can be gathered. This is referred to herein as the ‘onshore project area’.

An Extended Phase 1 Habitat Survey of the onshore project area was undertaken between April 2021 and March 2022, the findings of which were used to inform the scope of further ‘Phase 2’ ecology surveys required in 2022 to inform the project’s Ecological Impact Assessment (EclA) in support of its Development Consent Order (DCO) application.

This report details the scope, methodology and findings of hazel dormouse surveys, which forms part of this suite of Phase 2 surveys.

1.2. Legislation

Hazel dormouse is a fully protected species under both United Kingdom and European law. This is a brief summary of the legislation and is not to be regarded as a definitive legal opinion. When dealing with individual cases, the client is advised to consult the full texts of the relevant legislation and obtain further legal advice.

The hazel dormouse was given partial protection under the Wildlife and Countryside Act (WCA) 1981 (as amended). Schedule 5 of this Act was amended in 1988 making it a fully protected species. Protection is also afforded by the Conservation of Habitats and Species Regulations 2017 (as amended) making the hazel dormouse a European Protected Species. These two pieces of legislation operate in parallel, although there are some small differences in scope and wording.

Under Regulation 43 of the Conservation of Habitats and Species Regulations it is illegal to:

- deliberately capture, injure, or kill a hazel dormouse;
- possess or control any live or dead specimen or anything derived from a hazel dormouse;
- deliberately disturb a hazel dormouse (in particular, disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, to hibernate or

migrate or to affect significantly the local distribution or abundance of the species to which they belong);

- damage or destroy a breeding site or resting place of a hazel dormouse;
- possess, transport, advertise, sell or exchange a hazel dormouse (dead or alive) or any part of a dormouse.

1.3. Priority Species

Hazel dormice are a 'Species of Principal Importance for the conservation of biodiversity' listed under Section 41 of the NERC Act 2006. This Act places a responsibility on local authorities and government departments to consider the purposes of conserving biodiversity in a manner consistent with their normal duties, such as policy and decision-making, and ties together wildlife legislation and planning policies.

2. METHODOLOGY

2.1 Survey Design

Suitable habitat for hazel dormice was identified during the Extended Phase 1 Habitat Survey (Royal HaskoningDHV, 2022). These included woody habitats, including hedgerows and areas of species rich scrub and grassland, that are connected to woodland areas which contain a high degree of species diversity within the tree and shrub species. A total of 30 areas of suitable habitat for dormice were recorded, primarily consisting of hazel-rich hedgerows connected to nearby woodland. Following ongoing site selection and route refinement, a refined list of 19 areas of suitable habitat for dormice remain within the onshore project area plus a 50m buffer at the time of survey. Dormouse surveys were then undertaken on the 18 of these 19 identified areas of suitable habitat. The location of these features is shown on Figure 1.1 Appendix A.

The remaining area of suitable habitat within the onshore project area plus a 50m buffer was removed from the survey scope as the feature was found during an initial site visit to no longer provide suitable habitat for supporting dormice. This is due to the sparse nature of the vegetation which created many large gaps. When visited in Spring 2022, the habitat presented more like a mown field margin along a ditch than a species rich hedgerow suitable for dormice.

A dormouse nest-tube monitoring survey of suitable hedgerows was undertaken in accordance with the current good practice guidelines set out in the Dormouse Conservation Handbook (Bright, Morris and Mitchell-Jones, 2006). This involved installing dormouse nest-tubes approximately 15-20m apart within each suitable habitat area. For any identified suitable woodlands, dormouse nest box surveys were undertaken. The nest boxes followed the design set out in the Dormouse Conservation Handbook. Dormouse boxes were placed in a grid 20 metres apart (Bright, Morris and Mitchell-Jones, 2006). The number of tubes and/or boxes deployed in each survey site is detailed in Table 3.2.

The nest-tubes and boxes were checked once a month and remained in situ for a sufficient period of the dormouse active season to provide a robust assessment of presence / likely absence assessment, following the 'Index of probability of finding dormice present in nest tubes' (Chanin and Woods, 2003) (Table 1). 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. Likely absence should not be assumed on a score less than 20.

Where possible the nest tubes and boxes were left in situ from April - November (inclusive). Where constraints on specific sites did not allow this, boxes and tubes were left in situ for the maximum survey effort required to provide evidence of absence within that feature.

Table 1. Index of probability of finding dormice present in nest tubes in a single month (Chanin and Woods, 2003)

Month	Index of probability (based on 50 nest tubes)
April	1
May	4
June	2
July	2
August	5
September	7
October	2
November	2

Table 2. Dormouse survey site set up details.

Site ID	No. tubes / boxes	Date of deployment
TN041	6	27.04.22
TN410	35	03.05.22
TN503	25	25.05.22
TN509	50	13.05.22
TN525	50	19.04.22
TN552	50	20.05.22
TN576	25	15.06.22
H075	26	27.04.22
H079	12	27.04.22
H085	12	27.04.22
H089	28	27.04.22
H127	25	13.05.22
H136	15	28.04.22
H149	15	10.05.22
H154	20	28.04.22
H155	18	15.06.22
H156	10	15.06.22
H221	18	28.04.22

2.2 Field Survey

Nest tubes were numbered and attached to the underside of branches using cable ties or wire. The opening of the tube pointed downwards, and at an angle no greater than 45 degrees. Where possible, the entrance of the tube faced the trunk of the tree. Nest boxes were numbered and attached securely to suitable trees with wire. Nest boxes were attached where possible to hazel, or other similar shrubs, which were not isolated but linked to other trees within the canopy at a height of approximately 1.5 to 2 metres above the ground (Bright, Morris and Mitchell-Jones, 2006).

For every nest tube and nest box deployed a GPS point was recorded using Fulcrum. Notes and photographs were recorded to assist future surveyors to find the tubes.

The surveys were carried out during the recommended survey season for dormice (Bright, Morris and Mitchell-Jones, 2006). There were undertaken between April and November (inclusive) in 2022.

Each nest tube and box were carefully inspected, on inspection if evidence of activity of any small mammal (e.g., movement, nests, droppings) was found, the tube or box was taken down and opened within a large plastic bag (Bright *et al*, 2006). This method allowed the surveyor to closely examine the contents of the box or tube and prevented any animals from escaping and the safe return of any animals to the tube or box before replacing.

Any dormice encountered were weighed and sexed with the age, class and breeding condition of each animal recorded. Any other small mammals such as wood mice *Apodemus sylvaticus*, shrew *Sorex sp.*, or field vole *Microtus agrestis* nests or individuals encountered were removed from the tubes, unless a litter was present. Bird nests were not disturbed until chicks had fledged, at which point the nest was removed.

2.3 Survey Personnel

All dormouse surveys were led by Kate Mann (Natural England Level 1 dormouse licence number 2020-49128-CLS-CLS), an ecologist with over eight years' experience conducting dormouse surveys. In addition, assistant surveyors were all suitably experienced ecologists enrolled on to dormouse training courses and with a professional interest in dormice. All surveyors were either members of CIEEM or followed the Code of Professional Conduct (CIEEM, 2022).

2.4 Survey Limitations

All sites were surveyed and accessed without limitations apart from one site where access was the main limitation. The site in question (H136) had five survey visits, achieving a survey score of 18 points, due to access restrictions between May and August 2022. As dormice were confirmed on this site, the restrictions to access and subsequent 18 survey points are not considered to impact the result from this site.

Dormouse nest boxes at survey site TN576 could not be removed during November due to access restrictions surrounding a game shoot. As no evidence of dormice was recorded during the surveys, this is not considered to impact upon the survey results. Nest boxes are robust and designed to last many years for population monitoring surveys and therefore can be collected at any time or left on site to provide nest opportunities for wildlife (including for birds and other small mammals).

An absence of dormice, or their field signs, during a survey does not confirm with absolute certainty the absence of dormice and therefore surveys can only be used to determine likely absence of dormice from any given area. This is due to their elusive nature and natural population fluctuations, allowing

colonisations of areas following the completion of surveys. For example, in suitable habitat where dormouse nests are not found within survey boxes or tubes, dormice may still be present using natural nests, which are well camouflaged within shrubs and bramble and very difficult to find within the environment.

3. RESULTS

The results are provided in Table 3. The results indicate that 12 of the 18 sites had dormice present.

All the survey metadata (including weather conditions) can be found in Appendix B and the photos to support the surveys can be found in Appendix C.

Table 3. Dormouse survey results.

TN041				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	27.04.22	N	N/A	N/A
1	11.05.22	N	N/A	N/A
2	17.06.22	N	N/A	N/A
3	25.07.22	N	N/A	N/A
4	15.08.22	N	N/A	N/A
5	26.09.22	N	N/A	N/A
6	28.10.22	N	N/A	N/A
7 + collection	30.11.22	N	N/A	Wood mouse nest.
TN410				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	03.05.22	N	N/A	N/A
1	27.05.22	N	N/A	N/A
2	17.06.22	N	N/A	N/A
3	28.07.22	N	N/A	N/A
4	31.08.22	N	N/A	N/A
5	26.09.22	Y	1x adult, 4x juveniles, 5x nests.	Box 2: 1x male juvenile dormouse with grey fur, not weighed. In nest. Box 7: 1x adult dormouse escaped nest on approach. Box 10: Dormouse nest, no animal present. Box 12: Dormouse nest with no entrance – likely maternity nest so left alone to avoid disturbance. Box 14: 3x juveniles in nest, not weighed. Grey fur present.
6	28.10.22	Y	1x adult, 9x male adult, 4x female adult, 6x juveniles, 12x nests.	Box 2: 1x adult escaped on approach. 2x male adults inside nest, 28g and 24g. Box 5: 1x male adult 22.5g, 1x juvenile (not weighed) in nest. Box 7: 1x male adult 23.5g, 1x adult female (this year's mature young) 26g with tick on face. In nest. Box 10: Dormouse nest, no animal present. Box 12: 1x female adult, 21.5g, 3x juveniles average weight 10g, in nest.

				<p>Box 13: 3x male adult, 25.5g, 20g with white tip and 18g.</p> <p>Box 14: Dormouse nest with wood mouse in.</p> <p>Box 16: 1x female juvenile 20g, 1x male juvenile 14g.</p> <p>Box 19: Dormouse nest, no animal present.</p> <p>Box 21: 1x female adult in nest, 19g.</p> <p>Box 23: 1x female adult in nest, 22.5g.</p> <p>Box 34: 2x male adult in nest, 20g.</p>
7 + collection	30.11.22	Y	17x nests.	<p>Box 2: Dormouse nest, no animal present.</p> <p>Box 4: Dormouse nest, no animal present.</p> <p>Box 5: Dormouse nest, no animal present.</p> <p>Box 8: Dormouse nest, no animal present.</p> <p>Box 10: Dormouse nest, no animal present.</p> <p>Box 11: Dormouse nest, no animal present.</p> <p>Box 12: Dormouse nest, no animal present.</p> <p>Box 13: Dormouse nest, no animal present.</p> <p>Box 14: Dormouse nest, no animal present.</p> <p>Box 16: Dormouse nest, no animal present.</p> <p>Box 17: Dormouse nest, no animal present.</p> <p>Box 18: Dormouse nest, no animal present.</p> <p>Box 19: Dormouse nest, no animal present.</p> <p>Box 21: Dormouse nest, no animal present.</p> <p>Box 22: Dormouse nest, no animal present.</p> <p>Box 23: Dormouse nest, no animal present.</p> <p>Box 34: Dormouse nest, no animal present.</p>
TN503				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	25.05.22	N	N/A	N/A
1	30.05.22	N	N/A	N/A
2	16.06.22	N	N/A	N/A
3	29.07.22	N	N/A	N/A
4	18.08.22	N	N/A	N/A
5	28.09.22	Y	1x juvenile.	Box 16: 1x juvenile in nest, not weighed.
6 + collection	28.11.22	Y	2x nests.	<p>Box 16: Old dormouse nest destroyed by other small mammal.</p> <p>Box 25: Dormouse nest, no animal present.</p>
TN509				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	13.05.22	N	N/A	N/A
1	26.05.22	N	N/A	N/A
2	14.06.22	N	N/A	N/A
3	29.07.22	N	N/A	N/A
4	19.08.22	N	N/A	N/A
5	30.09.22	Y	1x male adult, 1x nest.	Tube 40: 1x male adult, 15g, this year's young in breeding condition.
6	31.10.22	Y	1x nest.	Tube 40: Dormouse nest, no animal present.
7 + collection	29.11.22	Y	1x deceased dormouse, 3x nests.	<p>Box 3: Dormouse nest, no animal present.</p> <p>Tube 40: 1x deceased dormouse in nest, possible tumour to side of face.</p> <p>Tube 46: Dormouse nest, no animal present.</p>
TN525				

Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	19.04.22	N	N/A	N/A
1	10.05.22	N	N/A	5x bird nests recorded.
2	14.06.22	N	N/A	4x bird nests recorded.
3	03.07.22	N	N/A	N/A
4	31.08.22	N	N/A	N/A
5	12.09.22	N	N/A	N/A
6	31.10.22	N	N/A	N/A
Collection	29.11.22	N	N/A	4x other small mammal nests recorded.
TN552				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	20.05.22	N	N/A	N/A
1	26.05.22	N	N/A	N/A
2	16.06.22	N	N/A	N/A
3	14.07.22	N	N/A	1x other small mammal nest, 1x bird nest.
4	18.08.22	N	N/A	7x other small mammal nests.
5	13.09.22	N	N/A	N/A
Collection	01.12.22	N	N/A	N/A
TN576				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	15.06.22	N	N/A	N/A
1	30.06.22	N	N/A	
2	14.07.22	N	N/A	
3	31.08.22	N	N/A	
4	12.09.22	N	N/A	1x wood mouse nest with juveniles
5	31.10.22	N	N/A	1x other small mammal nest
H075				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	27.04.22	N	N/A	N/A
1	27.05.22	N	N/A	N/A
2	16.06.22	N	N/A	N/A
3	25.07.22	N	N/A	N/A
4	15.08.22	N	N/A	N/A
5	26.09.22	N	N/A	N/A
6	29.10.22	N	N/A	N/A
Collection	20.11.22	Y	1x nest	Tube 21: Dormouse nest, no animal present.
H079				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	27.04.22	N	N/A	N/A
1	11.05.22	N	N/A	N/A
2	17.06.22	N	N/A	N/A
3	25.07.22	N	N/A	N/A
4	15.08.22	N	N/A	N/A
5	26.09.22	Y	1x adult, 3x pinks, 1x nest	Tube 6: Adult escaped from nest before bunged - very vocal pinks within nest, minimum of 3 counted.
6	28.10.22	Y	1x nest	Tube 6: Dormouse nest. Not fully inspected due to pinks found previous month.
Collection	30.11.22	Y	4x nests	Tube 6: Dormouse nest, no animal present.

				Tube 7: Dormouse nest, no animal present. Tube 8: Dormouse nest with bracken, no animal present. Tube 11: Dormouse nest, no animal present.
H085				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	27.04.22	N	N/A	N/A
1	11.05.22	N	N/A	N/A
2	17.06.22	N	N/A	N/A
3	25.07.22	Y	1x female adult, 4x juvenile, 1x nest	Tube 18: Woven nest made from willow. Mother and 3 individuals escaped, and 4 th juvenile weighed 8.5g
4	15.08.22	Y	1x nest	Tube 18: Dormouse nest, no animal present.
5	26.09.22	Y	2x nests	Tube 18: Old dormouse nest Tube 20: Dormouse nest, empty
6	28.10.22	Y	2x nests	Tube 13: Dormouse nest, no animal present Tube 20: Escaped dormouse, nest present
Collection	30.11.22	Y	5x nests	Tube 13: Dormouse nest, no animal present. Tube 18: Old dormouse nest. Tube 20: Dormouse nest, no animal present. Tube 21: Dormouse nest, no animal present. Tube 24: Dormouse nest partially destroyed by other small mammal, no animal present.
H089				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	27.04.22	N/A	N/A	N/A
1	11.05.22	N/A	N/A	N/A
2	16.06.22	N/A	N/A	N/A
3	25.07.22	N/A	N/A	N/A
4	15.08.22	N/A	N/A	N/A
5	26.09.22	N/A	N/A	N/A
6	29.10.22	N/A	N/A	N/A
Collection	20.11.22	N/A	N/A	N/A
H127				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	13.05.22	N	N/A	N/A
1	27.05.22	N	N/A	N/A
2	13.06.22	N	N/A	N/A
3	28.07.22	N	N/A	N/A
4	18.08.22	N	N/A	N/A
5	28.09.22	N	N/A	2x other small mammal nests.
6	29.10.22	N	N/A	N/A
Collection	28.11.22	Y	2x nests	Tube 6: Dormouse nest, no animal present. Tube 9: Dormouse nest, no animal present.
H136				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	28.04.22	N	N/A	N/A
1	16.08.22	Y	1x adult, 5x nests	Tube 4: 1x adult escaped from nest. Tube 9: Dormouse nest, no animal present. Tube 11: Dormouse nest, no animal present.

				Tube 13: Dormouse nest, no animal present. Tube 14: Dormouse nest, no animal present.
2	30.09.22	Y	2x female adult, 4x juveniles, 9x nests	Tube 2: 1x adult female in nest, 18.5g. Tube 4: Dormouse nest, no animal present. Tube 7: 1x adult female and 4 juveniles in nest. Juveniles average 10g, mother not weighed. Tube 8: Dormouse nest, no animal present. Tube 9: Dormouse nest with wood mouse. Tube 10: Dormouse nest, shrew inside. Tube 11: Dormouse nest, no animal present. Tube 13: Dormouse nest, no animal present. Tube 14: Dormouse nest, no animal present.
3	28.10.22	Y	9x nests, 4x juveniles	Tube 1: 4x juveniles escaped nest on approach Tube 2: Dormouse nest, no animal present. Tube 4: Dormouse nest, no animal present. Tube 7: Dormouse nest, no animal, present. Tube 8: Dormouse nest, no animal present. Tube 9: Dormouse nest, no animal present. Tube 11: Dormouse nest, no animal present. Tube 13: Dormouse nest, no animal present. Tube 14: Dormouse nest, no animal present.
4 + collection	29.11.22	Y	9x nests, 1x juvenile	Tube 1: Old dormouse nest. Tube 2: Old dormouse nest. Tube 4: Old dormouse nest. Tube 7: Dormouse nest, no animal present. Tube 8: 1x juvenile, 14g, active in nest. Tube 9: Dormouse nest, no animal present. Tube 11: Old dormouse nest. Tube 13: Old dormouse nest. Tube 14: Old dormouse nest.
H149				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	10.05.22	N	N/A	N/A
1	26.05.22	N	N/A	N/A
2	14.06.22	Y	2x male adult, 2x nests.	Tube 4: 1x male adult, 14g. Tube 5: 1x adult male, 16g. White tip on tail. Poorly structured nest. Tube 6: Beginning of dormouse nest.
3	15.07.22	Y	1x adult, 1x female juvenile, 3x nests.	Tube 2: 1x female juvenile dormouse, 14g, in poorly structured nest. Tube 6: Beginnings of dormouse nest. Tube 12: 1x adult dormouse escaped from nest on approach.
4	16.08.22	Y	5x nests.	Tube 2: Dormouse nest, no animal present. Tube 5: Old dormouse nest partially destroyed by other small mammal. Tube 6: Dormouse nest, no animal present. Tube 12: Dormouse nest, no animal present. Tube 14: Dormouse nest, no animal present.
5	27.09.22	Y	5x nests.	Tube 2: Old dormouse nest. Tube 6: Dormouse nest, no animal present. Tube 12: Dormouse nest, no animal present. Tube 13: Dormouse nest, no animal present. Tube 14: Dormouse nest, no animal present.

6	27.10.22	Y	1x juvenile, 5x nests.	Tube 2: 1x juvenile dormouse, 10g, showed signs of stress and subdued when placed back into nest. Tube 6: Dormouse nest, no animal present. Tube 12: Dormouse nest, no animal present. Tube 13: Old dormouse nest destroyed by other small mammal. Tube 14: Dormouse nest, no animal present.
Collection	30.11.22	Y	1x adult, 7x nests.	Tube 2: Old dormouse nest. Tube 6: Dormouse nest, no animal present. Tube 7: 1x adult dormouse escaped from nest on approach. Tube 11: Old dormouse nest destroyed by other small mammal. Tube 12: Dormouse nest, no animal present. Tube 13: Dormouse nest, no animal present. Tube 14: Old dormouse nest.
H154				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	28.04.22	N	N/A	N/A
1	10.05.22	N	N/A	N/A
2	14.06.22	N	N/A	N/A
3	15.07.22	N	N/A	N/A
4	16.08.22	N	N/A	N/A
5	27.09.22	Y	1x adult, 2x nests.	Tube 4: Dormouse nest, no animal present. Tube 20: 1x adult escaped from nest on approach.
6	27.10.22	Y	2x nests.	Tube 10: Beginning of dormouse nest. Tube 19: Dormouse nest, no animal present.
Collection	30.11.22	Y	3x nests.	Tube 17: Dormouse nest started but destroyed by other small mammal. Tube 18: Dormouse nest, no animal present. Tube 19: Dormouse nest with 4x wood mice.
H155				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	15.06.22	N	N/A	N/A
1	30.06.22	N	N/A	N/A
2	15.07.22	N	N/A	N/A
3	16.08.22	N	N/A	N/A
4	27.09.22	Y	1x male adult, 5x nests.	Tube 2: Dormouse nest with other small mammal food cache. Tube 7: Beginning of dormouse nest. Tube 9: Dormouse nest, no animal present. Tube 12: 1x male adult in nest. Tube 14: Dormouse nest, spiders within and difficult to open tube.
5	27.10.22	Y	1x male adult, 4x juveniles, 9x nests.	Tube 7: Dormouse nest, no animal present. Tube 9: 3x juveniles escaped from nest on approach. Tube 11: 1x adult male in nest, 23.5g with white tip on tail. Tube 12: Dormouse nest, no animal present. Tube 13: Dormouse nest, no animal present.

				Tube 14: Dormouse nest, no animal present. Tube 17: 1x juvenile, 10.5g in nest. Tube 18: Dormouse nest, no animal present. Tube 19: Dormouse nest, no animal present.
Collection	30.11.22	Y	1x adult, 6x nests.	Tube 2: Dormouse nest, no animal present. Tube 7: Dormouse nest, no animal present. Tube 9: Dormouse nest, no animal present. Tube 13: 1x adult escaped from nest on approach. Tube 14: Dormouse nest, no animal present. Tube 18: Dormouse nest, no animal present.
H156				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	Notes
Deployment	15.06.22	N	N/A	N/A
1	30.06.22	N	N/A	N/A
2	15.07.22	N	N/A	N/A
3	16.08.22	N	N/A	N/A
4	27.09.22	N	N/A	Other small mammal nest with food cache.
5	27.10.22	N	N/A	N/A
Collection	30.11.22	N	N/A	N/A
H221				
Survey visit	Date	Dormouse signs Y/N	Dormouse evidence	
Deployment	28.04.22	N	N/A	N/A
1	26.05.22	N	N/A	N/A
2	15.06.22	N	N/A	N/A
3	28.07.22	Y	2x nests.	Tube 16: Dormouse nest, no animal present. Tube 18: Dormouse nest, no animal present.
4	16.08.22	Y	3x nests.	Tube 12: Dormouse nest, no animal present. Tube 16: Dormouse nest, no animal present. Tube 18: Dormouse nest, no animal present.
5	30.09.22	Y	4x nests.	Tube 5: Dormouse nest, no animal present. Tube 12: Dormouse nest, no animal present. Tube 16: Dormouse nest, no animal present. Tube 18: Dormouse nest, no animal present.
6	31.10.22	Y	4x nests.	Tube 5: Dormouse nest, no animal present. Tube 12: Dormouse nest, no animal present. Tube 16: Dormouse nest, no animal present. Tube 18: Dormouse nest, no animal present.
Collection	29.11.22	Y	7x nests.	Tube 2: Dormouse nest, no animal present. Tube 3: Dormouse nest, no animal present. Tube 4: Dormouse nest, no animal present. Tube 5: Dormouse nest, no animal present. Tube 12: Old dormouse nest. Tube 16: Old dormouse nest now with wood mice. Tube 18: Old dormouse nest.

4. CONCLUSION

In summary the following sites were found to have confirmed hazel dormice presence:

- H079, H085, H075, TN410, H127, TN503, H136, H149, H154, H155, H221, and TN509.

Hazel dormice are mobile species, and although they are not known to disperse great distances, it is accepted that they will move across connected suitable habitat.

No evidence of hazel dormouse was recorded along hedgerow H156, however this hedgerow is connected at either end to H154 and H155 which both had confirmed dormouse presence. H156 is a younger hedgerow than H154 and H155, however the same plant food sources are present in all three hedgerows.

It is therefore considered that H156 should be treated as having an assumed presence for hazel dormice, given their connectivity and the abundance of dormice found in H154 and H155.

Similarly, no evidence of hazel dormouse was recorded in H089, however this survey site relates to the southern side of a hedgerow, of which the northern side (H075) did have confirmed evidence of dormouse. It is advised that H075 and H085 should be considered together to conclude presence of hazel dormouse in this hedgerow.

Finally, no evidence of hazel dormouse was recorded at TN041 however this survey site is connected at the northern end to both H079 and H085, both of which had confirmed presence of dormouse. It is considered that TN041 should be treated as having assumed presence for hazel dormice, given the very few survey tubes established on this section of hedgerow and its connection to the hedgerow network of H079 and H085.

5. REFERENCES

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Royal HaskoningDHV (2022) North Falls Extended Phase 1 Habitat Survey Report

APPENDIX A: Survey Location Site Plan



LEGEND

- Onshore project area plus 50m
- Dormouse Survey Areas**
- Confirmed Presence
- Confirmed Presence
- Likely Absence

**DORMOUSE SURVEY AREAS
FIGURE 1.1**

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
06.12.2022

PRODUCED BY:
J. McMahon





REF: 22042



**ECOLOGY
RESOURCES**



LEGEND

-  Onshore project area plus 50m
- Dormouse Survey Areas**
-  Confirmed Presence
-  Confirmed Presence
-  Likely Absence

**DORMOUSE SURVEY AREAS
FIGURE 1.2**

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
06.12.2022

PRODUCED BY:
J. McMahon


REF: 22042




**ECOLOGY
RESOURCES**



LEGEND

 Onshore project area plus 50m

Dormouse Survey Areas

 Likely Absence

DORMOUSE SURVEY
AREAS
FIGURE 1.3

PROJECT TITLE:
North Falls Offshore Wind
Farm

CLIENT:
Royal HaskoningDHV

DATE:
06.12.2022

PRODUCED BY:
J. McMahon



REF: 22042



ECOLOGY
RESOURCES



LEGEND

-  Onshore project area plus 50m
- Dormouse Survey Areas**
-  Likely Absence

DORMOUSE SURVEY AREAS
 FIGURE 1.4

PROJECT TITLE:
 North Falls Offshore Wind Farm

CLIENT:
 Royal HaskoningDHV

DATE:
 06.12.2022

PRODUCED BY:
 J. McMahon

REF: 22042



ECOLOGY
 RESOURCES



LEGEND

- Onshore project areas plus 50m
- Tube Locations**
- Adults/Juveniles Present
- Nest only
- Nil
- Dormouse Survey Areas**
- Confirmed Presence
- Likely Absence

**DORMOUSE SURVEY RESULTS
FIGURE 2.1**

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
06.12.2022

PRODUCED BY:
J. McMahon

REF: 22042



**ECOLOGY
RESOURCES**



LEGEND

- Onshore project area plus 50m
- Tube Locations**
- Adults/Juveniles Present
- Nest only
- Nil
- Dormouse Survey Areas**
- Confirmed Presence
- Likely Absence

**DORMOUSE SURVEY RESULTS
FIGURE 2.2**

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
06.12.2022

PRODUCED BY:
J. McMahon

REF: 22042



**ECOLOGY
RESOURCES**



LEGEND

- Onshore project area plus 50m
- Box Locations**
- Adults/Juveniles Present
- Nest only
- Nil
- Dormouse Survey Areas**
- Confirmed Presence

**DORMOUSE SURVEY RESULTS
FIGURE 2.3**

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

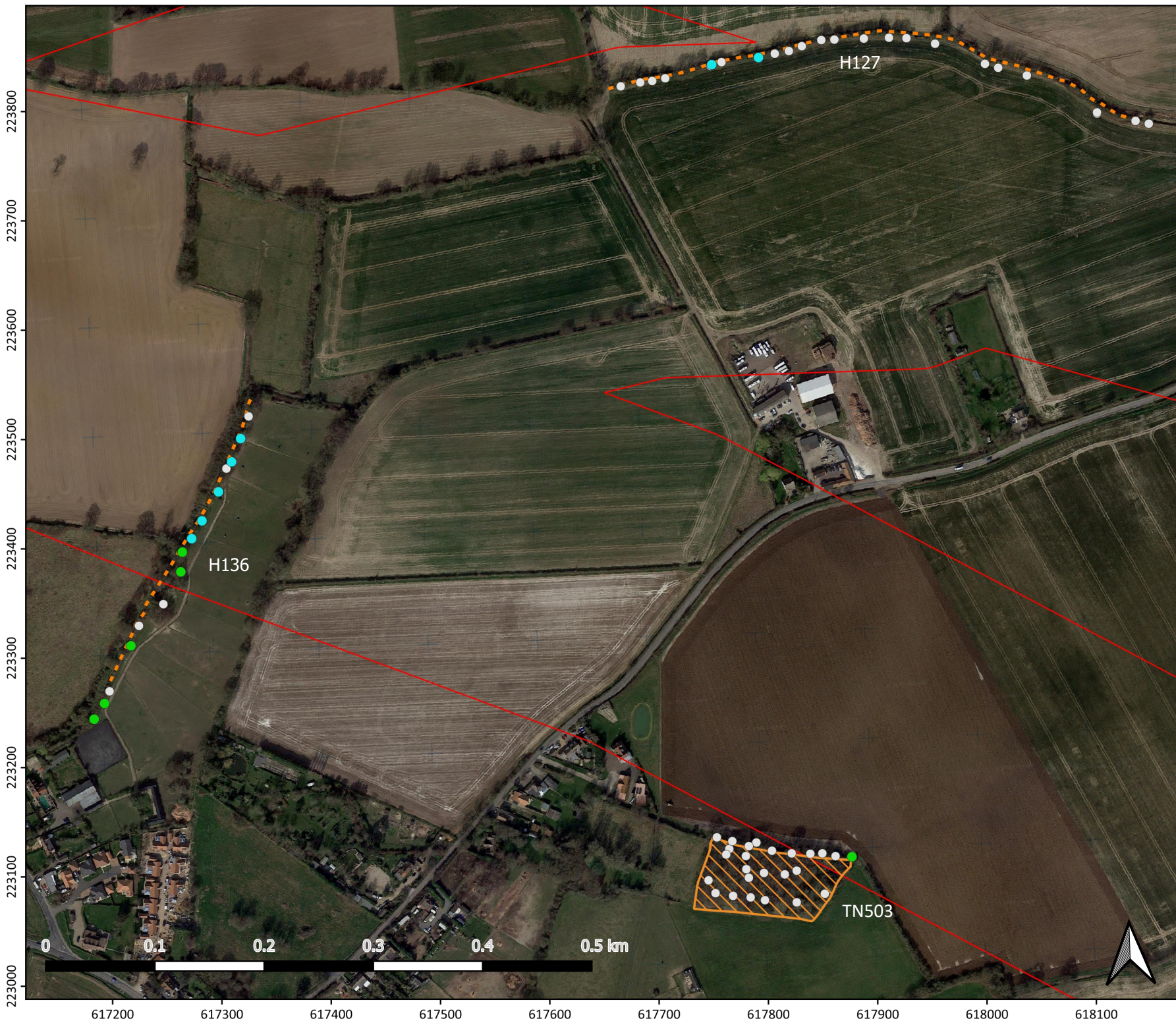
DATE:
06.12.2022

PRODUCED BY:
J. McMahon

REF: 22042



**ECOLOGY
RESOURCES**



LEGEND

- Onshore project area plus 50m
- Box/Tube Locations**
- Adults/Juveniles Present
- Nest only
- Nil

- Dormouse Survey Areas**
- Confirmed Presence
- Confirmed Presence

**DORMOUSE SURVEY RESULTS
FIGURE 2.4**

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
06.12.2022

PRODUCED BY:
J. McMahon

REF: 22042



**ECOLOGY
RESOURCES**



LEGEND

- Onshore project area plus 50m
- Box/Tube Locations**
- Adults/Juveniles Present
- Nest only
- Nil
- Dormouse Survey Areas**
- Confirmed Presence
- Likely Absence

**DORMOUSE SURVEY RESULTS
FIGURE 2.5**

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
06.12.2022

PRODUCED BY:
J. McMahon




REF: 22042



ECOLOGY
RESOURCES



LEGEND

-  Onshore project area plus 50m
- Box Locations**
-  Nil
- Dormouse Survey Areas**
-  Likely Absence

**DORMOUSE SURVEY RESULTS
FIGURE 2.6**

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
06.12.2022

PRODUCED BY:
J. McMahon




REF: 22042



**ECOLOGY
RESOURCES**



LEGEND

-  Onshore project area plus 50m
- Box Locations**
-  Nil
- Dormouse Survey Areas**
-  Likely Absence

**DORMOUSE SURVEY RESULTS
FIGURE 2.7**

PROJECT TITLE:
North Falls Offshore Wind Farm

CLIENT:
Royal HaskoningDHV

DATE:
06.12.2022

PRODUCED BY:
J. McMahon

REF: 22042



**ECOLOGY
RESOURCES**

APPENDIX B: Survey Metadata

H075			
Survey number	Date	Weather conditions	Dormice / evidence found
1	27.05.22	16°C. Sunny, dry with light breeze	N
2	16.06.22	21°C. Sunny, dry with light breeze	N
3	25.07.22	24°C. Sunny intervals, strong breeze, 70% cloud cover	N
4	15.08.22	27°C. Light breeze, cloud cover 70%	N
5	26.09.22	13°C. Changeable, light rain, strong breeze	N
6	29.10.22	18°C. Sunny intervals, moderate breeze, cloud cover 80%	N
7	20.11.22	10°C. Rain before survey, moderate breeze	Y

H079			
Survey number	Date	Weather conditions	Dormice / evidence found
1	11.05.22	16°C. Sunny/ dry/ light breeze	N
2	17.06.22	25°C. Sunny/ dry/ light breeze	N
3	25.07.22	24°C. Strong breeze/ humid/ cloud cover 60%	N
4	15.08.22	28°C. no breeze/ cloud cover 90 %	N
5	26.09.22	13°C. Changeable/ light on off rain/ cloud cover 90%	Y
6	28.10.22	20°C. Moderate breeze/ cloud cover 20%	Y
7	30.11.22	8°C. Cold, light breeze.	Y

H085			
Survey number	Date	Weather conditions	Dormice / evidence found
1	11.05.22	16°C. Sunny/ dry/ light breeze	N
2	17.06.22	25°C. Sunny/ dry/ light breeze	N
3	25.07.22	24°C. strong breeze/ cloud cover 60%	Y
4	15.08.22	25°C. light breeze/ cloud cover 60%	Y
5	26.09.22	13°C. Changeable/ very windy with light rain on and off	Y
6	28.10.22	20°C. Sunny/ moderate breeze/ cloud cover 20%	Y
7	30.11.22	9°C. Cold, light breeze.	Y

H089			
Survey number	Date	Weather conditions	Dormice/evidence found
1	11.05.22	16°C. Sunny, dry, light breeze	N
2	16.06.22	21°C. Sunny, dry, light breeze	N
3	25.07.22	24°C. Sunny intervals, strong breeze, cloud cover 70%	N
4	15.08.22	27°C. light breeze, cloud cover 70 %	N
5	26.09.22	14°C. Changeable, light rain, very windy, cloud cover 60%	N
6	29.10.22	18°C. Overcast, moderate breeze, cloud cover 80%	N
7	20.11.22	10°C. Rain prior to survey, moderate breeze.	N

H149			
Survey number	Date	Weather conditions	Dormice/evidence found
1	10.05.22	15°C. Sunny/ dry/ light breeze	N
2	14.06.22	20°C. Sunny/ dry/ light breeze	Y
3	15.07.22	23°C. Sunny/ light breeze/ cloud cover 5%	Y
4	16.08.22	23°C. light breeze/ dry/ cloud cover 90%,	Y
5	27.09.22	11°C. Cold wind/ cloud cover 80%	Y
6	27.10.22	18°C. Sunny/ light breeze/ cloud cover 5%	Y
7	30.11.22	10°C. Light breeze, cloud cover 70%	Y

H127			
Survey number	Date	Weather conditions	Dormice/evidence found
1	27.05.22	16°C. Sunny, dry, light breeze	N
2	13.06.22	17°C. Sunny with few clouds, dry with light breeze	N
3	28.07.22	23°C. Moderate breeze, cloud cover 60%.	N
4	18.08.22	20°C. Moderate breeze, humid, cloud cover 40%	N
5	28.09.22	13°C. Sunny, moderate breeze.	N
6	29.10.22	18°C. Sunny intervals, moderate breeze, cloud cover 40%	N
7	28.11.22	9°C. Misty but sunny, light breeze. Very wet ground.	Y

H154			
Survey number	Date	Weather conditions	Dormice/evidence found
1	10.05.22	13°C. Sunny/ dry/ light breeze	N
2	14.06.22	22°C. Sunny/ dry/ light breeze	N
3	15.07.22	23°C. Sunny/ light breeze/ cloud cover 20%,	N
4	16.08.22	24°C. Light breeze/ cloud cover 70%	N
5	27.09.22	11°C. Cloud cover 70%	Y
6	27.10.22	15°C. Moderate breeze/ light rain before survey	Y
7	30.11.22	11°C. Light breeze, cloud cover 80%	Y

H155			
Survey number	Date	Weather conditions	Dormice/evidence found
1	30.06.22	19°C. Sunny spells/ dry/ slight breeze/ cloud cover 60%	N
2	15.07.22	23°C. Sunny/ slight breeze/ cloud cover 20%,	N
3	16.08.22	24°C. Light breeze/ cloud cover 70%	N
4	27.09.22	11°C. Strong wind/ cloud cover 60%	Y
5	27.10.22	15°C. Sunny/ moderate breeze/ light rain before survey/ cloud cover 30%	Y
6	30.11.22	11°C. Light breeze, cloud cover 80%	Y

H156			
Survey number	Date	Weather conditions	Dormice/evidence found
1	30.06.22	19°C. Sunny spells/dry/ slight breeze/ cloud cover 80%	N
2	15.07.22	23°C. Sunny/ slight breeze/ cloud cover 20%,	N
3	16.08.22	24°C. Light breeze/ cloud cover 70%	N
4	27.09.22	13°C. Light breeze/ cloud cover 40%	N

5	27.10.22	15°C. Sunny/ moderate breeze/ light rain before survey/ cloud cover 30%	N
6	30.11.22	10°C. Light breeze, cloud cover 80%	N
H221			
Survey number	Date	Weather conditions	Dormice/evidence found
1	26.05.22	16°C. Sunny/ dry with light breeze	N
2	15.06.22	23°C. Very sunny with no cloud cover/ dry with light breeze	N
3	28.07.22	22°C. Moderate breeze/ 60% cloud cover	Y
4	16.08.22	25°C. Light rain/ light breeze/ cloud cover 90%	Y
5	30.09.22	9°C. Cool breeze/ very misty	Y
6	31.10.22	17°C. Moderate breeze/ light rain before survey/ cloud cover 80%	Y
7	29.11.22	8°C. Light breeze, cloud cover 70%	Y

TN041			
Survey number	Date	Weather conditions	Dormice/evidence found
1	11.05.22	16°C. Sunny/ dry/ light breeze	N
2	17.06.22	25°C. Sunny/ dry/ light breeze	N
3	25.07.22	24°C. Sunny/ strong breeze	N
4	15.08.22	25°C. Light breeze/ cloud cover 70%	N
5	26.09.22	13°C. Changeable/ on off light rain/ cloud cover 90%	N
6	28.10.22	20°C. Sunny/ moderate breeze/ cloud cover 20%	N
7	30.11.22	8°C. Cold light breeze, cloud cover 90%, light rain	N

TN410			
Survey number	Date	Weather conditions	Dormice/evidence found
1	27.05.22	15°C. Sunny/ dry/ light breeze	N
2	17.06.22	25°C. Sunny/ dry/ light breeze	N
3	28.07.22	22°C. Moderate breeze/ cloud cover 50%	N
4	31.08.22	21°C. Sunny/ dry/moderate breeze	N
5	26.09.22	13°C. Changeable/ moderate wind/ cloud starting at 70%	Y
6	28.10.22	18°C. Light breeze/ overnight rain/ cloud cover 0%	Y
7	30.11.22	9°C. Light breeze, cloud cover 80%	Y

TN503			
Survey number	Date	Weather conditions	Dormice/evidence found
1	30.05.22	15°C. Sunny/ dry/ light breeze	N
2	16.06.22	21°C. Sunny/ dry/ light breeze	N
3	29.07.22	24°C. Moderate breeze/ cloud cover 80%	N
4	18.08.22	23°C. Moderate breeze/ cloud cover 40%	N
5	28.09.22	14°C. Sunny/ dry/ moderate breeze/ cloud cover 50%	Y
6	28.11.22	10°C. Sunny, light breeze, cloud cover 5%	Y

TN509			
Survey number	Date	Weather conditions	Dormice/evidence found
1	26.05.22	15°C. Sunny/ dry/ light breeze	N






2	14.06.22	19°C. Sunny/ dry/ light breeze	N
3	29.07.22	24°C. Moderate breeze/ cloud cover 80%	N
4	19.08.22	26°C. Light breeze/ cloud cover 40%	N
5	30.09.22	9°C. Misty/ light breeze	Y
6	31.10.22	16°C. Light breeze/ cloud cover 70%	Y
7	29.11.22	9°C. Light breeze, cloud cover 80%	Y




TN525			
Survey number	Date	Weather conditions	Dormice/evidence found
1	10.05.22	15°C. Sunny/ dry/ light breeze	N
2	14.06.22	21°C. Sunny/ dry/ light breeze	N
3	13.07.22	25°C. Sunny/ cloud cover 20%	N
4	31.08.22	23°C. Sunny/ dry/ moderate breeze	N
5	13.09.22	17°C. Sunny spells/ moderate breeze/ cloud cover 40%	N
6	31.10.22	16°C. Light rain/ moderate breeze/ cloud cover 90%	N
7	29.11.22	8°C. Light breeze, misty. Cloud cover 80%	N





TN552			
Survey number	Date	Weather conditions	Dormice/evidence found
1	26.05.22	15°C. Sunny/ dry with light breeze	N
2	16.06.22	21°C. Sunny and humid, no cloud cover, light breeze.	N
3	14.07.22	24°C. Sunny, slight breeze, cloud cover 40%	N
4	18.08.22	20°C. Light breeze/ cloud cover 60%,	N
5	13.09.22	18°C. Sunny spells, moderate breeze, cloud cover 70%	N
6	01.12.22	8°C. Overcast, light breeze.	N




TN576			
Survey number	Date	Weather conditions	Dormice/evidence found
1	30.06.22	20°C. Sunny/ dry/ slight breeze	N
2	14.07.22	22°C. Sunny breaks, humid, cloud cover 70%	N
3	31.08.22	24°C. Sunny, dry, moderate breeze.	N
4	12.09.22	22°C. Mostly cloudy, light breeze. Dry.	N
5	31.10.22	15°C. Light rain before survey, slight breeze.	N





APPENDIX C: Survey Photographs




Survey Site	Month	Photo(s)	Description
H085	July		1 female adult, 4 juveniles, nest
	October		Nest, no animal present
H136	August	  	4x nests with no animal present. Single adult escaped on approach to one nest.

Survey Site	Month	Photo(s)	Description
			
	September		<p>1x female adult, 1x nest with no animal present.</p>
H149	July		<p>1x other small mammal nest. 1x nest with female juvenile dormouse. 1x nest with escaped adult.</p>

Survey Site	Month	Photo(s)	Description
			
	August		2x dormouse nests with no animal present.
	September		Dormouse nest with no animal present.
H154	September		Dormouse nest with no animal present.

Survey Site	Month	Photo(s)	Description
	October		Dormouse nest with no animal present.
H155	September		<p>1x dormouse nest with other small mammal food cache. 1x beginning of nest with stripped bark. 1x dormouse nest with no animal present. 1x male adult.</p>
	October		<p>1x nest with 3 escaped juveniles. 1x male adult. 1x dormouse nest with no animal present. 1x juvenile.</p>

Survey Site	Month	Photo(s)	Description
			
H221	July		Dormouse nest with no animal present.
	August		Dormouse nest with no animal present.
	September		3x dormouse nests with no animals present.

Survey Site	Month	Photo(s)	Description
			
TN410	October	 	2x juveniles in box with nest.



NORTH FALLS

Offshore Wind Farm



RWE

HARNESSING THE POWER OF NORTH SEA WIND

North Falls Offshore Wind Farm Limited

A joint venture company owned equally by SSE Renewables and RWE.

To contact please email contact@northfallsoffshore.com

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