

Rampion 2 Wind Farm

Category 7: Other Documents

Evidence Plan (Part 11 of 11)

Date: August 2023

Revision A

Document Reference: 7.21

Pursuant to: APFP Regulation 5 (2) (q)

Ecodoc number: 004866615-01



4.22.4



Volume 4, Appendix 22.4

National Vegetation Classification survey report 2021-2022



Contents

| | | |
|-----------|---|-----------|
| 1. | Introduction | 5 |
| 1.1 | Background | 5 |
| | Legislation | 5 |
| | Structure of this Appendix | 5 |
| 2. | Methods | 7 |
| 2.1 | Defining scope of data collection | 7 |
| 2.2 | Desk study | 7 |
| 2.3 | Non-statutory designated sites of nature conservation | 12 |
| 2.4 | National Vegetation Classification survey | 22 |
| | Data collection locations | 22 |
| | Data collection methods | 27 |
| | Data analysis methods | 29 |
| | Constraints and limitations | 29 |
| 3. | Results | 32 |
| 3.1 | Field Survey Results | 32 |
| 3.2 | Angmering Park | 32 |
| 3.3 | Calcot Wood | 33 |
| 3.4 | Crossbush | 34 |
| | General site description | 34 |
| | Broadleaved woodland | 34 |
| | Community matches | 35 |
| 3.5 | Grassland at Wineham Lane | 35 |
| | General site description | 35 |
| | Neutral grassland | 36 |
| | Community matches | 36 |
| 3.6 | Poling Copse | 37 |
| | General site description | 37 |
| | Broadleaved woodland | 37 |
| | Community matches | 37 |
| 3.7 | Spofforth North | 38 |
| | General site description | 38 |
| | Spofforth North | 38 |
| | Community matches – Northern field | 38 |
| 3.8 | Spofforth South | 39 |
| | General site description | 39 |
| | Spofforth South | 39 |

| | | |
|-----------|--|-----------|
| | Community matches – Southern field | 39 |
| 3.9 | Sullington Hill LWS | 40 |
| | General site description | 40 |
| | Calcareous grassland description | 40 |
| | Community matches | 41 |
| | Semi-natural woodland | 41 |
| | Scrub | 42 |
| 3.10 | Talbot & Baker I | 42 |
| | General site description | 42 |
| | Grassland description | 42 |
| | Community matches | 42 |
| 3.11 | Talbot & Baker II | 43 |
| | General site description | 43 |
| | Grassland description | 43 |
| 3.12 | Woodland at Wineham Lane | 44 |
| | General site description | 44 |
| | Broadleaved plantation woodland | 44 |
| | Community matches | 45 |
| 3.13 | Warningcamp Hill | 45 |
| | General site description | 45 |
| | Calcareous grassland description | 45 |
| | Community matches | 46 |
| 3.14 | Workhouse Copse | 47 |
| | General site description | 47 |
| | Mixed woodland | 47 |
| | Community matches | 48 |
| 3.15 | Notable plant species recorded | 49 |
| 3.16 | Legally controlled plant species | 49 |
| 4. | Summary | 50 |
| 5. | Glossary of terms and abbreviations | 56 |
| 6. | References | 57 |

List of Tables

| | | |
|-----------|---|----|
| Table 2-1 | Details of statutory designated sites of botanical importance | 9 |
| Table 2-2 | Details of non-statutory designated sites of botanical importance | 12 |
| Table 2-3 | Summary of NVC survey areas | 23 |
| Table 4-1 | Results of NVC surveys | 50 |
| Table 4-2 | Priority habitat descriptions | 54 |

List of Figures

Figure 22.4.1 National Vegetation Classification Survey Plots

List of Annexes

- Annex A Figures and Images
- Annex B Full survey details
- Annex C Scientific species names
- Annex D Floristic tables
- Annex E MAVIS output

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1. Introduction

1.1 Background

- 1.1.1 This Appendix should be read in conjunction with **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the Environmental Statement (ES) which is provided in support of the delivery of an Environmental Impact Assessment (EIA) associated with the Rampion 2 Offshore Wind Farm, hereafter referred to as the 'Proposed Development' or 'Rampion 2'.
- 1.1.2 This Appendix describes the survey method and summarises the results of National Vegetation Classification (NVC) surveys undertaken in 2021 and 2022. Scientific species names are provided in Annex C.

Legislation

- 1.1.3 The two main legislations relating to the protection of habitats and plants within the UK are The Habitats Directive and Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) (WCA).
- 1.1.4 The Habitats Directive (Council Directive 92/43/EEC) aims to ensure the conservation of a wide range of rare, threatened or endemic animal and plant species, along with 213 rare and characteristic habitat types which are identified on Annex I as 'priority habitats'. The presence of Annex I habitats and Annex II species allow the establishment of Special Areas of Conservation (SAC) to maintain their favourable conservation status.
- 1.1.5 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) is identified within Annex I. This priority habitat type was identified within **Appendix 22.2: Terrestrial ecology desk study, Volume 4** as being present at Sullington Hill Local Wildlife Site (LWS) and Warningcamp Hill and New Down LWS.
- 1.1.6 The WCA is the primary legislation which protects animals, plants and habitats in the UK. Schedule 8 of the WCA lists plant species that are protected from intentionally (or recklessly) picking, uprooting, or destroying any plant or spore / seed of any such plant, and the sale of plants or parts of plants listed in Schedule 8.
- 1.1.7 The desk study identified records of six plant species listed on Schedule 8 of the WCA: Alpine catchfly, bluebell, cut-grass, holly-leaved naiad, Jersey cudweed and monkey orchid.

Structure of this Appendix

- 1.1.8 This Appendix is structured as follows:
- **Section 2: Methods;**
 - **Section 3: Results;**

- **Section 4: Summary;**
- **Section 5: Glossary and abbreviations;**
- **Section 6: References;**
- **Annex A: Figures and images;**
- **Annex B: Full survey details;**
- **Annex C: Scientific species names;**
- **Annex D: Floristic tables: and**
- **Annex E: MAVIS output.**

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2. Methods

2.1 Defining scope of data collection

2.1.1 The data collected has included the following:

- desk study of records of statutory and non-statutory designated sites of botanical importance;
- desk study of protected or otherwise notable habitats and plants; and
- NVC field survey.

2.1.2 Due to the size and scale of the Proposed Development, it is not proportionate to undertake NVC survey across the entire proposed DCO Order Limits, instead a sampling approach has been undertaken based upon the broad habitat types recorded during the desk study (see **Section 2.2**), and through analysis of aerial mapping against the areas likely to be impacted by the Proposed Development. The NVC surveys were undertaken as the design of the Proposed Development has evolved. Therefore, some areas now fall outside of the draft proposed DCO Order Limits. The results of all surveys are reported below. All survey locations are shown in context to the proposed DCO Order Limits in **Figure 22.4.1, Annex A**.

2.2 Desk study

2.2.1 An environmental desk study was undertaken to identify statutory designated sites of international or national botanical importance within 10km of the proposed DCO Order Limits, and non-statutory designated sites of botanical importance and priority habitats within 5km of it. The search for statutory sites was carried out using the Multi-Agency Geographic Information for the Countryside (MAGIC) website (an internet-based GIS database provided by the Department for Environment, Foods and Rural Affairs (Defra) [accessed May 2023]) and for non-statutory sites through a data request to Sussex Biodiversity Record Centre (SxBRC). Information on the statutory designated sites identified was gathered from the websites of Natural England [Accessed May 2023] and the Joint Nature Conservation Committee (JNCC) [Accessed May 2023].

2.2.2 In addition to the desk study for designated sites, information of protected or otherwise notable flora within 5km of the proposed DCO Order Limits was gathered from SxBRC.

2.2.3 A summary of the results of this desk study¹, with regards to statutory designated and non-statutory designated sites, priority habitats and protected or otherwise notable plants are shown in **Table 2-1** and **Table 2-2**, below.

¹ Data accords with Appendix 22.2 Terrestrial ecology and nature conservation desk study, Volume 4.

- 2.2.4 Twelve statutory designated sites were identified within the search area as sites with features of botanical importance and these are outlined in **Table 2-1**.
- 2.2.5 Two of these statutory designated sites are of international importance, namely Arun Valley Ramsar site and Duncton to Bignor Escarpment SAC.
- 2.2.6 Ten nationally designated sites of botanical importance were identified within 5km of the proposed DCO Order Limits. One of these, Climping Beach Site of Special Scientific Interest (SSSI) is within the proposed DCO Order Limits, whilst Amberley Mount to Sullington Hill SSSI, is adjacent to the proposed DCO Order Limits.

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Table 2-1 Details of statutory designated sites of botanical importance

| Site name | Designated botanical and habitat features | Distance and direction from proposed DCO Order Limits |
|---|---|---|
| Internationally important sites | | |
| Arun Valley Ramsar site (overlaps with Arun Valley SAC, Arun Valley Special Protected Area (SPA), Amberley Wild Brooks SSSI, Waltham Brooks SSSI and Pulborough Brooks SSSI) | Qualifies under Ramsar criterion 2 for four nationally rare and four nationally scarce plant species. Qualifies under Ramsar criterion 3 for a diverse and rich ditch flora including all 5 <i>Lemna</i> and <i>Rorippa</i> , and all 3 <i>Myriophyllum</i> species. All but one of the seven British pondweeds and two-thirds of water dropworts can be found on site. | 4.6km north-west |
| Duncton to Bignor Escarpment SAC | Asperulo-Fagetum beech forests | 9.3km north-west |
| Nationally important sites | | |
| Climping Beach SSSI (overlaps with West Beach Local Nature Reserve (LNR)) | SD1 – <i>Rumex crispus</i> – <i>Glaucium flavum</i> shingle community, SD7 – <i>Ammophila Arenaria</i> – <i>Festuca rubra</i> semi-fixed dune community and SD8 – <i>Festuca rubra</i> – <i>Galium verum</i> fixed dune grassland | Within proposed DCO Order Limits |
| Amberley Mount to Sullington Hill SSSI | CG2 – <i>Festuca ovina</i> – <i>Avenula pratensis</i> lowland calcareous grassland , CG3 – <i>Bromus erectus</i> lowland calcareous grassland. Juniper <i>Juniperus communis</i> and Fly honeysuckle <i>Lonicera xylosteum</i> | Adjacent to proposed DCO Order Limits |

| Site name | Designated botanical and habitat features | Distance and direction from proposed DCO Order Limits |
|-------------------------------|--|---|
| Chanctonbury Hill SSSI | CG2 – <i>Festuca ovina</i> – <i>Avenula pratensis</i> lowland calcareous grassland, CG3 – <i>Bromus erectus</i> lowland calcareous grassland, W12 – <i>Fagus sylvatica</i> – <i>Mercurialis perennis</i> woodland. | 0.7km south-east |
| Sullington Warren SSSI | H2 – <i>Calluna vulgaris</i> – <i>Ulex minor</i> heath | 0.8km north-west |
| Cissbury Ring SSSI | CG1 – <i>Festuca ovina</i> – <i>Carlina vulgaris</i> lowland calcareous grassland, CG2 – <i>Festuca ovina</i> – <i>Avenula pratensis</i> lowland calcareous grassland, CG3 – <i>Bromus erectus</i> lowland calcareous grassland and CG4 – <i>Brachypodium pinnatum</i> lowland calcareous grassland. | 2.4km south |
| Arundel Park SSSI | CG2 <i>Festuca ovina</i> – <i>Avenula pratensis</i> lowland calcareous grassland, CG3 – <i>Bromus erectus</i> lowland calcareous grassland, Cut-grass <i>Leersia oryzoides</i> | 2.8km north-west |
| Parham Park SSSI | Combinations of species – lichens. W10 – <i>Quercus robur</i> – <i>Pteridium aquilinum</i> – <i>Rubus fruticosus</i> woodland, W14 – <i>Fagus sylvatica</i> – <i>Rubus fruticosus</i> woodland, W15 – <i>Fagus sylvatica</i> – <i>Deschampsia flexuosa</i> woodland | 2.8km north-west |
| Hurston Warren SSSI | H2 – <i>Calluna vulgaris</i> – <i>Ulex minor</i> heath, M1 – <i>Sphagnum auriculatum</i> bog pool community, M16 – <i>Erica tetralix</i> – <i>Sphagnum compactum</i> wet heath | 4.0km north-west |

| Site name | Designated botanical and habitat features | Distance and direction from proposed DCO Order Limits |
|----------------------------------|--|---|
| Arun Banks SSSI | <i>Schoenoplectus lacustris</i> sub-species <i>tabernaemontani</i> x <i>triqueter</i> . W5 – <i>Alnus glutinosa</i> – <i>Carex paniculate</i> , and W6 – <i>Alnus glutinosa</i> – <i>Urtica dioica</i> woodland. | 4.2km west |
| Amberley Wild Brooks SSSI | Designated for its Vascular plant assemblage including true fox-sedge <i>Carex vulpine</i> , and cut-grass <i>Leersia oryzoides</i> . Also S3 – <i>Carex paniculate</i> swamp, S5 – <i>Glyceria maxima</i> swamp and S7 <i>Carex acutiformis</i> swamp | 4.7km north-west |

2.3 Non-statutory designated sites of nature conservation

2.3.1 Non-statutory designated sites of nature conservation were identified within data provided by SxBRC. **Table 2-2** provides the details of the LWS that are within the proposed DCO Order Limits and within 5km of it. There are four non-statutory designated sites located fully or partially within the proposed DCO Order Limits, with a further 46 within 5km of it (see **Figure 23.7, Volume 3**).

Table 2-2 Details of non-statutory designated sites of botanical importance

| Site name | Description ² | Distance and direction from the proposed DCO Order Limits |
|--|---|--|
| Littlehampton Golf Course & Atherington Beach LWS | Littlehampton Golf Course is of outstanding importance botanically. Although much of its grassland has been improved there are patches of species-rich turf. The southern edge of the golf links includes an area of dry dune grassland, adjacent to the sand dune system of Climping Beach SSSI. The site also includes an area of vegetated shingle beach, a nationally uncommon habitat. | Within proposed DCO Order Limits |
| Elmer Rocks LWS | Elmer beach is a fine example of vegetated shingle, an internationally rare habitat. The intertidal area supports a diverse community including intertidal sand and eight 'rock islands' constructed in the early 1990s in the mid-tide zone to form a coastal defence against the eroding coastline. The rock islands have provided a habitat type that is very rare, if not unique, in West Sussex. The rock pools are probably the best in the county. | Within proposed DCO Order Limits (below mean low water springs (MLWS)) |
| Sullington Hill LWS | This stretch of the South Downs escarpment supports moderately species-rich chalk grassland on north and east-facing slopes. Some areas are maintained by grazing while others are no longer grazed and have become heavily scrub-invaded. The site includes small areas of semi-natural woodland. | Within proposed DCO Order Limits |

² Description is copied from the summary provided on the designation information provided for each site by SxBRC

| Site name | Description ² | Distance and direction from the proposed DCO Order Limits |
|--|---|--|
| Bines Green LWS | Bines Green is an area of common land that straddles the B2135 road. It is damp, unimproved, neutral grassland of considerable botanical interest with a small, overgrown pond to the west of the road. | Within proposed DCO Order Limits (CIRCA 10m ² of an existing surfaced track only) |
| Warningcamp Hill and New Down LWS | The steep, north-west facing slope of New Down supports herb-rich chalk grassland with extensive patches of burnet rose <i>Rosa pimpinellifolia</i> , an uncommon plant in West Sussex. Warningcamp Hill supports a very large population of the rare small-flowered buttercup <i>Ranunculus parviflorus</i> . The site also includes an old chalk pit and a small area of ancient, semi-natural woodland. | Adjacent to proposed DCO Order Limits |
| Long Furlong and Church Hill LWS | Long Furlong is a steep north and west-facing slope between the A280 and Clapham Woods, supporting rich chalk grassland and scrub. Church Hill is a complex mosaic of chalk grassland, species-rich scrub and woodland. Long Furlong and Church Hill form a large piece of contiguous habitat, so have been included as one site. | Adjacent to proposed DCO Order Limits |
| Clapham Wood LWS | Clapham Wood is an extensive, ancient semi-natural woodland on the undulating dip slope of the South Downs. The ground flora is rich and includes a number of interesting species. The wood was moderately affected by the storm of October 1987 and unfortunately several large blocks of woodland were subsequently cleared for pasture. Much of the wood is not managed but some areas are still coppiced. Clapham Woods is an ancient woodland of County-wide importance. | 0.4km south-east |
| Heath Common LWS | This site has moderately rich remnants of wet and dry heath, several ponds and some relics of ancient base-rich woodland rich in lichens and ferns. In recent years, the Sandgate | 0.5km north |

| Site name | Description ² | Distance and direction from the proposed DCO Order Limits |
|--|--|---|
| Poling Copse LWS | <p>Conservation Society has done excellent work in the management of this area as a nature reserve.</p> <p>Poling Copse is a large block of ancient, semi-natural woodland on the Coastal Plain south of the South Downs, just to the east of Arundel. It consists predominantly of Oak-Hazel woodland, a type typical of base-poor soils in the area. Sycamore woodland dominates on South Fields – a section which has probably regenerated on an old field.</p> | 0.5km north |
| Kithurst Hill LWS | <p>This site lies on the steep, north-facing escarpment of the South Downs. Most of it is wooded. The lower slopes consist of ancient semi-natural woodland, mostly of ash and hazel. It is of interest for its epiphytic bryophytes. There are small areas of open grassland with species-rich swards.</p> | 0.6km north-west |
| Washington Chalk Quarry LWS | <p>This area of open downland and scattered scrub lies at the western end of Chanctonbury Hill. It includes a collection of disused chalk pits which now support species-rich grassland. The flora and butterflies are both of great interest.</p> <p>Part of the site has recently been fenced and sheep grazing reinstated. The South Downs Way runs through the site.</p> | 0.7km south |
| Conyers Bank LWS | <p>Conyers Bank is a small, isolated field of unimproved chalk grassland on a steep, north-facing hillside. Situated above the floodplain of the River Arun, it is surrounded by semi-natural woodland and improved water meadows. The site has a rich flora.</p> | 0.9km north-west |
| River Adur Water Meadows & Wyckham Wood LWS | <p>Wyckham Wood, one of the few woodlands on the floodplain of the River Adur is of particular importance on account of its heronry. The water meadows have mostly been improved but some of the ditches are of great botanical</p> | 0.9km south-east |

| Site name | Description ² | Distance and direction from the proposed DCO Order Limits |
|--|--|---|
| | interest. This wetland area is also of importance to birds and dragonflies. | |
| Arun Valley, Watersfield to Arundel Local Wildlife Site (LWS) | This section of the River Arun and its floodplain forms an extensive tract of wetland, a nationally declining habitat. There is a good network of ditches, some of which are very important botanically. The site is important for birds, dragonflies, water beetles, snails and plants, and supports many rare and declining species. The unimproved meadows of Watersfield Brooks are of great botanical interest. | 1.1km west |
| Wiston Ponds LWS | This is a well-established pond within the grounds of Wiston Park. It is surrounded by trees and scrub and has well-developed marginal vegetation. Good populations of amphibians use this pond and also it supports a number of interesting bird species. | 1.4km south-east |
| The Gallops & No Man's Land LWS | Contains a diversity of habitats including calcareous grassland, broadleaved woodland, rank grassland and dense scrub all in close proximity. Accessible to the public and adjacent to a local school. | 2.0km south |
| Titnore & Goring Woods Complex LWS | Large area of lowland mixed deciduous woodland on edge of Worthing. Much is ancient and semi-natural. Includes wetland and grassland habitats | 2.2km south-east |
| America & Gratwicke's Wood LWS | An oak, ash, hazel woodland lying on the Weald Clay with wet areas supporting alder and aspen. The managed coppice provides a varied structure and together with paths and rides provides good habitats for birds and insects. The ground flora is rich and the trees and shrubs include wild service and Midland hawthorn. | 2.2km north |
| Middleton Shingle LWS | The site consists of a strip of vegetated shingle along the seafront at Middleton-on-Sea with a large population of Sea | 2.2km west |

| Site name | Description ² | Distance and direction from the proposed DCO Order Limits |
|---|--|---|
| Binsted Wood Complex LWS | <p>Radish <i>Raphanus raphanistrum</i> ssp. <i>Maritimus</i>, a plant that occurs in only three other sites in Sussex. The strip of vegetated shingle is backed by regularly mown grass and then housing.</p> <p>Binsted Wood is a complex of woodland sites which includes Hundredhouse Copse in the west and Stewards Copse to the east. There is a mixture of ancient woodland, recent woodland, conifer plantation, species rich pasture and old tracks and shaws. The mix of habitats and geology gives rise to a very rich and diverse flora. The paths and rides are especially species rich and Scotland Lane supports an outstanding wet ride flora that includes at least 11 species of sedge including Long-stalked Yellow-sedge <i>Carex viridula</i> ssp. <i>brachyrhyncha</i>, a county rarity at its only recorded West Sussex location. This is the largest block of ancient semi-natural woodland south of the South Downs in Sussex.</p> | 2.3km north-west |
| Capite Wood LWS | <p>This is a large area of very diverse woodland comprising both broadleaved ancient semi-natural woodland and re-planted areas of coniferous and deciduous trees. The woodland has two small streams, species rich rides, wet flushes, banks, ditches and a varied topography. It has suffered extensive storm damage and there is abundant deadwood. The woodland is rich in bryophytes.</p> | 2.3km north |
| The Sanctuary, High Salvington LWS | <p>The site consists of a south-facing coombe and slope, located on the edge of High Salvington. The north and west part of the site is a mosaic of species-rich scrub, secondary woodland and chalk grassland, which is managed bird sanctuary. The rest is open, herb-rich grassland. The site represents a scarce habitat in the Borough. Meadow Clary <i>Salvia pratensis</i>, a Red Data Book</p> | 2.3km south-east |

| Site name | Description ² | Distance and direction from the proposed DCO Order Limits |
|--|---|---|
| | species, occur here in one of only two sites in West Sussex. | |
| Walden Close Meadow LWS | This site consists of a large meadow alongside the A272 and a small meadow to the north. Both fields are cut for hay and have species-rich swards. The smaller meadow is notably rich in invertebrates. | 2.4km north-west |
| Highdown Hill and the Miller's Tomb LWS | Species rich relatively unimproved chalk grassland and scrub with botanical and faunal interest | 2.5km south-east |
| West Wantley Farm Meadow LWS | Unimproved damp pasture meadow bounded by species rich hedgerow and ponds with notable populations of rare thistle. The site has a very large population of Meadow Thistle <i>Cirsium dissectum</i> which is very scarce in West Sussex. | 2.5km north-west |
| Steyning Coombe & Steyning Round Hill LWS | Steyning Coombe and Steyning Round Hill are both important areas of unimproved downland on the escarpment above Steyning. Together these areas are extremely diverse, having steep slopes facing all directions, both short herb-rich sward and tall ungrazed sward, open grassland and grassland with scattered scrub. The rich flora and invertebrate fauna includes several rare plants, snails and butterflies. | 2.6km south-east |
| Henfield Common LWS | The site is a registered common; one of three commons around Henfield. It is of great importance for wildlife as it encompasses a mosaic of species-rich grassland, woodland and a reedbed, together with small areas of marshy grassland and heath. The site is being actively managed to enhance its value for wildlife. | 2.6km south-east |
| Peppering Down LWS | A species-rich strip of chalk grassland on a west-facing slope. There is a fair amount of scrub at the top of the slope in the south-east corner of the site. | 2.8km north |

| Site name | Description ² | Distance and direction from the proposed DCO Order Limits |
|--|--|---|
| Old Deer Park LWS | <p>This site which lies in an old deer park, south of Leonardslee Gardens, is one of the best surviving relics of the formerly vast St. Leonard's Forest. In addition to moderately species-rich dry and wet heath, there is a very interesting bog.</p> <p>The ancient parkland trees have a fine assemblage of woodland epiphytic lichens. Today the park is grazed by a herd of wallabies.</p> | 2.8km north |
| Rewell Wood Complex LWS | <p>Rewell Wood is a large ancient woodland complex. It has a diversity of habitats including ancient semi-natural woodland, worked Sweet Chestnut coppice, conifer plantation, Beech plantation and species-rich chalk grassland. Wide rides and glades support a rich flora and butterfly fauna. The disused gravel pits are of entomological importance.</p> | 2.9km north-west |
| Broadmare Common LWS | <p>The site is a registered common, located just south of Henfield. It is predominantly poor fen and scrub, with several ponds and an area of woodland. It represents a rather scarce habitat which, although somewhat degraded, is now managed for wildlife. The location of the site amongst intensively farmed countryside and close to a small town increases its value for nature conservation.</p> | 3.0km south-east |
| Worthing & Hill Barn golf courses LWS | <p>These sites consist of unimproved chalk and neutral grassland with areas of scrub and woodland with high botanical interest and rare butterflies</p> | 3.0km south-east |
| Peppering Farm Dew Pond LWS | <p>Peppering Farm dewpond is a small dried-up dewpond, situated adjacent to a main track on the Downs and surrounded by arable. The area supports an exceptionally rich downland flora, including many uncommon plants. It is maintained by a small band of volunteers with permission from the estate and farmer. The</p> | 3.2km north-west |

| Site name | Description ² | Distance and direction from the proposed DCO Order Limits |
|--|---|---|
| | major task is the removal of scrub, mainly Gorse and Hawthorn. | |
| Kneppmill Pond, the River Adur & Lancing Brook LWS | The site is a registered common, located close to Henfield. It consists of herb-rich damp grassland with areas of tall herbs and some scrub and woodland. It has a small pond in the western corner. | 3.5km north-west |
| Ham Farm Wood LWS | This site is an ancient woodland in urban area with botanical, ornithological and recreational value. | 3.5km south-east |
| Ferring Rife and Meadows LWS | Rife with rough grassland banks and notable population of nationally rare snail | 3.6km south |
| The Downs Link, Nutham Wood & Greatsteeds Farm Meadow LWS | The Downs Link, a dismantled railway line, has developed into an interesting moderately species-rich belt of shrubs. This supports a large colony of the rare Brown Hairstreak butterfly. A number of important wildlife sites lie adjacent to the old railway, notably a small, herb-rich meadow and small, stream-side, ancient semi-natural woodlands. Nutham Wood, in particular, has a very rich ground flora. | 3.7km north-west |
| The Hanger LWS | Two main types of wood are present within this gill woodland site. Alder occurs along the streams and extends up the lower slopes in parts, with oak, hazel and ash on the upper slopes and the flat ground above. The wood supports a wide range of woodland plants, mosses and liverworts, a good bird community and a number of uncommon butterflies. | 3.8km north-east |
| Hooklands Farm Meadow LWS | Hooklands Farm meadow is an excellent example of unimproved, damp grassland. It is very species-rich and supports plants typical of damp and slightly acidic soils. The site is surrounded by mature hedgerows and a stream runs through the meadow, creating a damp flush around an old pond in the south of the area. | 3.8km north-west |

| Site name | Description ² | Distance and direction from the proposed DCO Order Limits |
|---|---|---|
| Hoe Wood LWS | This ancient woodland is dominated by Oak, with frequent ash and birch over hazel coppice. It has a good assemblage of woodland plants and supports a diverse community of birds. The site includes a lake which boasts significant numbers of dragonfly and damselfly species as well as providing for good populations of amphibians. Also include is an unimproved meadow. | 3.8km south-east |
| Offington Cemetry | This site is an unimproved herb rich chalk grassland with areas of scrub in urban area, providing refuge for wildlife and botanical interest | 4.0km south-east |
| Boyds Wood & Furze field Copse LWS | Boyds Wood and Furze field Copse are two botanically rich woodlands just outside the village of Nuthurst. They encompass a range of woodland types, both ancient semi-natural and more recent broadleaved plantation. Boyds Wood includes a particularly interesting stream valley or gill woodland. | 4.0km north-west |
| Tenants Hill and Reservoirs LWS | This site is a species rich unimproved chalk grassland, scrub and dewpond with exceptional botanical interest | 4.1km south-east |
| Tottington Wood LWS | This wood is situated just north of the South Downs. It consists typically of scattered Oak and Ash standards over mainly Hazel and some Ash coppice. It supports a very species-rich ground flora and a good number of bryophytes have been recorded. There are species-rich rides and several small streams. | 4.2km south-east |
| Oreham Common LWS | The site is a registered common, located close to Henfield. It consists of herb-rich damp grassland with areas of tall herbs and some scrub and woodland. It has a small pond in the western corner. | 4.2km south-east |
| Pond Lye LWS | This site includes a pond with extensive areas of sedge swamp around the margins and a species-rich neutral grassland. A number of | 4.3km east |

| Site name | Description ² | Distance and direction from the proposed DCO Order Limits |
|--|---|---|
| Amberley Chalkpits & Hacketts Copse LWS | <p>locally uncommon plants are found in the meadow. The pond is of great ornithological importance, particularly for its breeding birds.</p> <p>Amberley Chalkpits and the adjoining woodland contain a huge variety of habitats spanning the succession from bare chalk and spoil heaps to deciduous woodland. The varied aspects of the chalk pits add to the range of microhabitats present. The site has an extremely rich flora and fauna including typical chalk downland species and many rarities. The site is also of geological importance.</p> | 4.4km north-west |
| Monkmead Woods LWS | <p>This is an area of wet heath, dry heath and woodland on the south west edge of West Chilington Common, between Storrington and Pulborough. The site has scarce plants, a rare fungus and nearby sites have a very rare dragonfly that could colonise this site if management was appropriate.</p> | 4.4km north-west |
| Goring and Ferring Gap LWS | <p>Arable fields, broadleaved plantation woodland, semi-improved neutral, and amenity, grassland. Noted for gull and wader roost.</p> | 4.5km south-east |
| Part of Wiggonholt Common LWS | <p>This site is a habitat mosaic of dry heathland, semi natural woodland and acid grassland with botanical interest and notable rarity.</p> | 4.6km north-west |

- 2.3.2 Of the statutory and non-statutory sites identified in **Table 2-1** and **Table 2-2**, two non-statutory sites was identified as being potentially impacted by the onshore cable corridor, Littlehampton Golf Course and Atherington Beach LWS and Sullington Hill LWS.
- 2.3.3 The desk study indicated that the onshore cable corridor passes through the following areas of ancient woodland: Michelgrove Park and Calcot Wood. These are both shown as Planted Ancient Woodland Sites (PAWS) on MAGIC.
- 2.3.4 A total of 1,360 records of vascular plants of 194 species that are legally protected or notable (some at a county level only) were identified within 5km of the proposed

DCO Order Limits. Of these, 15 records of eight species were from within the proposed DCO Order Limits, comprising:

- One record of strawberry clover *Trifolium fragiferum* (GB Red List (2004); vulnerable, England Red List (2014); vulnerable, at Atherington, National Grid Reference (NGR) TQ00A;
- Two records of hound's-tongue *Cynoglossum officinale* (Red List GB (2004); Near Threatened). One record within Angmering Park at NGR TQ00T and one at TQ 0929 1199;
- One record of common valerian *Valeriana officinalis* (Red List England (2014): Near threatened) at NGR TQ 119131;
- Six records of yellow horned-poppy *Glaucium flavum* (Red List England (2014); near threatened). All records were from Climping Beach, with two records within Climping Beach SSSI;
- Two records of dune fescue *Vulpia fasciculata* (Nationally Scarce (Joint Nature Conservation Committee, 2018), Sussex Rare). Both records were from Climping Beach, one within the SSSI at TQ 01374 01008, one outside, at TQ 01293 00987;
- One record of stiff saltmarsh-grass *Puccinellia rupestris* (Nationally Scarce, Sussex Rare), recorded at grid reference TQ 0102 0094;
- One record of bulbous Meadow-grass *Poa bulbosa* (Nationally Scarce, Sussex Rare) recorded at NGR TQ 0119 0096;
- One record of musk stork's-bill *Erodium moschatum*: (Sussex Rare) at NGR TQ 01440 01026.

2.4 National Vegetation Classification survey

2.4.1 NVC surveys were undertaken between April 2021 and June 2021, with follow up surveys between April 2022 and June 2022. The purpose of NVC surveys was to confirm the typical vegetation communities of more botanically rich habitats present within or close to the Proposed DCO Order Limits. The NVC surveys were undertaken as the design of the Proposed Development has evolved. Therefore, some areas now fall outside of the proposed DCO Order Limits. The results of all NVC surveys are reported below.

Data collection locations

2.4.2 The following survey areas have been defined for each of the survey locations, based upon the broad habitat types recorded in the desk study, and by analysis of aerial mapping. The NVC surveys were undertaken prior to finalisation of the design of the Proposed Development and therefore, four of the 12 survey locations are now outside of the proposed DCO Order Limits. Details of survey locations are provided in **Table 2-3** with survey locations shown on **Figure 22.4.1, Annex A**.

Table 2-3 Summary of NVC survey areas

| Site name | Description | Within Proposed DCO Order Limits | Survey Year |
|-----------------------|--|----------------------------------|-------------|
| Angmering Park | Directly west of Warningcamp Down (Figure 2.2, Appendix A , National Grid Reference - TQ 03808 07476) this field contained approximately 1.8 hectares (ha) of tall rank grassland with very little variation and no signs of encroaching scrub or woodland (Image 1, Annex A). Likely used for silage or hay and waterlogged for part of the year. No evidence of disturbance or access from the general public recorded. | No | 2022 |
| Calcot Wood | Approximately 12 ha of conifer plantation with sections separated by glades and open rides (Figure 2.3, Image 2, Annex A , National Grid Reference - TQ 17436 14922). Direct connectivity to large area of semi-natural broadleaf woodland to the south. The wider landscape is dominated by agricultural fields with large areas of continuous broadleaf woodland. There are footpaths present within the main woodland however these are not open to the public; with no evidence of significant disturbance recorded. | Yes | 2022 |
| Crossbush | The woodland at Crossbush formed a discrete block of mature broadleaved woodland approximately 5 ha in extent (Figure 2.4, Image 3, Annex A , National Grid Reference - TQ 03596 06570). The wider landscape is predominantly used for agriculture with the exception of block of continuous woodland approximately 230m to the east. The woodland was generally homogeneous with the exception of the outcrop of scrub at the southwest which was being managed for game birds (Image 4, Annex A , National Grid Reference - TQ 03571 06458). Footpaths dissect the woodland, however these are not open to the public; with no evidence of significant disturbance recorded. | No | 2021 |

| Site name | Description | Within Proposed DCO Order Limits | Survey Year |
|---|--|----------------------------------|-------------|
| Grassland at Wineham Lane | Approximately 3 ha of grassland, situated at National Grid Reference - TQ 24218 21358. At the time of survey, the grassland had just been subject to a close-cut making it difficult to confirm typical condition and habitat use (Figure 2.5, Image 5, Annex A). It lies adjacent to a small parcel of ancient woodland to the north, with the existing National Grid Bolney substation to the south, and agricultural fields in the wider landscape. | Yes | 2022 |
| Poling Copse | Approximately 1.4 ha of mature broad-leaved woodland (Figure 2.6, Image 6, Annex A , National Grid Reference - TQ 03786 06083). This area is the western edge of a much larger area of woodland which stretches approximately 4-5km east and northeast. The remaining wider landscape consists of agricultural fields and small clusters of urban development. Footpaths ran along the northern boundary of this woodland however no evidence of disturbance was recorded. | No | 2022 |
| Spofforth Higher Level Stewardship³ | The survey area consisted of a northern (approximately 22 ha, National Grid Reference - TQ 10282 10827) and southern (~35 ha, National Grid Reference - TQ 10383 10315) field, separated by a single track road with public access (Figure 2.7, Annex A). These fields contained little variation throughout (Image 7, Annex A). The surrounding landscape was dominated by agricultural use. | Yes | 2022 |
| Sullington Hill | Sullington Hill consists of a mosaic of short chalk grasslands, semi-natural deciduous woodland and scrub, with each habitat type generally distinct with little overlap (Images 8-10, Annex A , National Grid Reference - | Yes | 2021 |

³ This area is two adjacent fields referred to in this appendix as Spofforth north and Spofforth south.

| Site name | Description | Within Proposed DCO Order Limits | Survey Year |
|------------------------------|---|----------------------------------|-------------|
| | TQ 09553 11915). The survey area covers approximately 7 ha. This wider landscape consists primarily of pasture for sheep and cattle grazing, with little urban development (Figure 2.8, Annex A). Although publicly accessible, disturbance appeared to be minimal, and was limited to within the chalk footpaths that follow the western extent of Sullington Hill, adjoining the South Downs Way to the south. | | |
| Talbot & Baker I | A dense monoculture of Italian perennial rye grass with very little variation or other species present, surrounded by mature hedgerows and tree-lines (Image 11, Annex A , National Grid Reference - TQ 21667 20661). The survey area was approximately 0.5 ha. The surrounding landscape was dominated by agricultural use (Figure 2.9, Annex A). | Yes | 2022 |
| Talbot & Baker II | Dense tussocky grassland field which appears disused (Image 12, Annex A , National Grid Reference - TQ 22156 21171). The survey area was approximately 0.8 ha with the surrounding landscape dominated by agricultural use (Figure 2.10, Annex A). | Yes | 2022 |
| Warningcamp Hill | Survey effort focused on approximately 2 ha of the north and south facing slopes at the eastern boundary of Warningcamp Hill and New Down Local Wildlife Site (LWS) (Figure 2.11, Image 13, Annex A , National Grid Reference – TQ 04102 07500). The wider landscape consists of pasture for sheep and cattle grazing, with little urban development. The survey area contains short-grazed calcareous grassland on steep north and south facing slopes leading into a central valley. Within the central valley is a tree-line surrounded by taller vegetation. The northern boundary of the grassland was encroached by scattered scrub comprising thick gorse, bramble and hawthorn. The | No | 2021 |

| Site name | Description | Within Proposed DCO Order Limits | Survey Year |
|---------------------------------|--|----------------------------------|-------------|
| | survey area is subject to regular disturbance from recreational users including dog walkers, cyclists and hikers. | | |
| Woodland at Wineham Lane | Block of broad-leaved plantation woodland approximately 4.3 ha in extent (Figure 2.12 Annex A , National Grid Reference - TQ 23707 21424). The woodland has good connectivity to the wider landscape through mature tree-lines and is surrounded in the wider landscape by agricultural fields, buildings, and National Grid's Bolney substation approximately 120m to the southeast. Although access to the periphery of the survey area was possible from public rights of way, the internal areas of plantation were not accessible to the public nor were they served by permissive paths; the presence of thick bramble and blackthorn make it unlikely that disturbance from the public would be significant (Image 14, Annex A). | Yes | 2021 |
| Workhouse Copse | A small mixed woodland approximately 1.4 ha between Water Lane and Buncton Chapel (Figure 2.13, Annex A , National Grid Reference - TQ 14459 13813). The wider landscape consists of agricultural fields and rural residential properties. The survey area consisted of approximately 0.11 ha of mature mixed woodland dissected by the Wiston stream, which flows north to south through the woodland. This woodland showed signs of regular access with a well-worn path through the centre (Image 15, Annex A), the effects of trampling on ground flora appeared to be more pronounced at the south of the survey area, with more areas of bare ground. | Yes | 2021 |

Data collection methods

NVC survey

- 2.4.3 The NVC surveys of the sites were undertaken following the NVC methodology as described by Rodwell (2006), hereafter referred to as Rodwell. Interpretation is supported by Rodwell (1998_a and 1998_b) for the relevant habitat type. For example:
- Rodwell (1998_b) *Vol. 3: Grassland and Montane Communities* is used for interpretation of grassland habitats;
 - Rodwell (1998_a) *British Plant Communities. Vol. 1: Woodlands and scrub* is used for interpretation of woodland habitats; and
 - Rodwell (2000) *British Plant Communities. Vol. 5: Maritime Communities and Vegetation of Open Habitats* is used for interpretation of open habitats. Rodwell (1998_a, 1998_b, 2000, 2006).
- 2.4.4 Rodwell (covering the references above) provides a detailed classification method and survey of a wide range of natural plant communities (and some man-made plant communities, e.g., pastureland) that occur within Great Britain. Within each of the NVC survey areas outlined within **Table 2-3**, the Rodwell method was undertaken by sampling set areas (quadrats) within the vegetation, recording species' frequency and abundance, and noting a description of distinctive areas.

Survey sampling

- 2.4.5 NVC communities and sub-communities were determined by recording the amount of cover of each plant species within a quadrat.
- 2.4.6 The size of each quadrat sampled was dependant on the habitat being surveyed, as per Rodwell, as follows:
- Grassland – Two Metres-squared (2m²);
 - Woodland (Field and Ground layer vegetation) – Four Metres-squared (4m²); and
 - Woodland (Canopy and understory layer vegetation) – Fifty Metres-squared (50m²).
- 2.4.7 Surveys of each habitat were undertaken by sampling five quadrats during each survey visit. Survey locations were chosen in advance of the surveys, using aerial mapping to identify suitable sampling points deemed representative of the wider survey area.
- 2.4.8 Quadrats were then set out on the ground within homogeneous areas, using visual assessment, with locations noted by 12-figure grid references using a Global Positioning System (GPS) unit to ensure surveys were repeatable. Following initial vegetative assessments, notably species-rich or species-poor stands of vegetation, which were atypical of the wider plant communities, were avoided. For locations of quadrats see **Figures 2.2 - 2.13, Annex A**.

Floristic tables: species' frequency and abundance

- 2.4.9 Plant communities in this appendix are described in terms of frequency and abundance, recorded within floristic tables. Frequency is determined by the number of quadrats each species was recorded in, as follows: scarce (1/5 – represented by the Roman numeral I), occasional (2/5 - represented by the Roman numeral II), frequent (3/5 represented by the Roman numeral III,) or constant (4/5-5/5 represented by the Roman numerals IV and V respectively), in line with Rodwell.
- 2.4.10 The abundance of each species relates to the percentage of ground it covers in each quadrat as described in the Domin scale (Shimwell, 1972):
- 91-100% cover – 10;
 - 76-90% cover – 9;
 - 51-75% cover – 8;
 - 34-50% cover – 7;
 - 26-33% cover – 6;
 - 11-25% cover – 5;
 - 4-10% cover – 4;
 - <4% (Many plants) – 3;
 - <4% (Several plants)– 2; and
 - <4% (Few plants)– 1.

Vegetation descriptions

- 2.4.11 Each survey area was described including key species, vegetation structure, management techniques, and relationship with neighbouring vegetation in order to match it with the closest community type as described by Rodwell.
- 2.4.12 Where relevant, notes were made on the height of vegetation, soil drainage, slope, aspect, grazing-levels, land management, and any other data considered useful in determining the vegetation communities present.
- 2.4.13 The nomenclature for the vascular plants in this appendix follows Stace (2019) for both scientific and common names, see **Annex C**. Identification guides by Poland & Clement (2009), Rose (2006) and Wallace (2021) were used to confirm the identification of species. This appendix uses common species names, only using scientific names for species groups where common names are unavailable (e.g. bryophytes).
- 2.4.14 Initial survey visits within the woodland areas in April 2021, and April 2022 focused on the field and ground layer only. Initial surveys aimed to detect the presence and abundance of vernal species which complete their annual growth phase early in the year before the tree canopy has fully developed. Information on canopy and understory of woodland areas was collected during follow up surveys in May 2021

and June 2022, once the canopy had developed and identification of trees becomes easier, along with additional information on ground and field layers.

- 2.4.15 Grassland surveys were completed in May 2021 and June 2021 to detect both early and later flowering species. As there was little difference between the results of May and June surveys in 2021, this approach was not repeated in 2022⁴. Instead, a single survey of the fields was carried out during June 2022 which is the optimum period for surveying grassland.

Data analysis methods

- 2.4.16 Each survey area was assigned to a community type based on the species present, their relative frequency between quadrats, and how closely they match descriptions of communities described in Rodwell.
- 2.4.17 Where there was a change in abundance or cover of a species between survey visits at each quadrat the highest value of the two was used. For example, if there was 90% cover of bluebells at quadrat 1 in April and 40% in May, 90% bluebell cover was used in helping to determine the community present. This ensures species are not omitted from interpretation due to seasonal changes and allows accurate comparison of species recorded to floristic tables provided by Rodwell.
- 2.4.18 To assist with assigning communities, a statistical analysis programme - MAVIS software (Ver 1.03) (Centre for Ecology and Hydrology, 2016) was used to analyse the floristic table sample size data. Data from groups of quadrats was entered into MAVIS as constancy (or frequency) tables, matching coefficients are computed between the published synoptic tables and the new field data with the top 10 coefficients displayed. As MAVIS can be prone to misidentifying communities, interpretation of Rodwell was used as the primary method of classification; the MAVIS outputs are referred to where relevant.
- 2.4.19 Floristic tables for all NVC sites are provided in **Annex D**, with full output from all MAVIS calculations provided in **Annex E**. Full survey details, including visit dates are available in **Table B1, Annex B**.

Constraints and limitations

- 2.4.20 The timing of grassland surveys in May 2021 and June 2021 (in-line with best guidance) aimed to detect both early and later flowering species, particularly grasses. However, these surveys were completed within six days of each other due to land access restrictions. It is therefore unlikely that the data collected during these two close visits is a true representation of mid to late flowering species and their relative seasonal abundance. Similarly, a single visit for grassland surveys in June 2022, whilst capturing the optimal survey period for species diversity, does not capture flowering periods for both early and late flowering species.
- 2.4.21 Although three survey dates are provided for the woodland at Wineham Lane, survey visits on 15 April 2021 and 16 April 2021 were part of the same survey.

⁴ See **Table 2-3** for the year in which each survey location was surveyed.

This is due to time constraints meaning the whole area could not be effectively surveyed in the remaining time on 15 April 2021.

- 2.4.22 Due to the prevailing weather conditions, unusually high rainfall levels and cool temperatures throughout May 2021, many grass species were late to flower in 2021. As a result, identification was largely only possible using vegetative characteristics (i.e. non-flowering growth). Whilst this method is reliable for species identification, it increases the chance of finer plant specimens (if present amongst stands of similar vegetation) being under-recorded in number, which accurately reflect their abundance and frequency.
- 2.4.23 GPS point accuracy can only confirm location to within 4-5m (dependent upon signal triangulation). This means although repeat surveys attempted to re-survey the exact locations as earlier quadrats, there may be slight variation, particularly in grassland survey areas where the size of each quadrat (2m²) is below the resolution of the GPS capability. Due to the public nature of these sites, quadrats could not be marked out in-situ between repeat surveys.
- 2.4.24 It should be noted the survey area at Workhouse Copse was 0.12 ha in extent – which is too small to take more than one sample for the canopy and understory layers. The survey method recommends a minimum of 5 quadrats per survey area is taken; therefore, a workaround (Dring, 2000) was used within MAVIS calculations. Without this workaround, there is an increased likelihood that the recording of individual trees would result in large variations in the predicted community. This is due to all species recorded in the canopy and understory layer being automatically classed as ‘constant’ if only one quadrat is taken, irrespective of % cover within the quadrat.
- 2.4.25 A single quadrat covering the entire survey area at Workhouse Copse does mean that all species in the survey area were identified, whereas data collected at the other sites is a representative sample of the wider survey area.
- 2.4.26 A single quadrat was also used to establish the community present for the grassland and Wineham Lane. All other quadrats were in areas which had recently been cut to between one and two centimetres (cm) above ground, making identification of most species impossible. As such, these quadrats were unsuitable for assigning NVC community. As only one suitable quadrat was available for interpretation, Dring (2000) was used for MAVIS calculations at this location. The only area it was possible to effectively survey was the northern boundary of the survey area, adjacent to ancient woodland. This quadrat is unlikely to be representative of the wider field prior to cutting and prone to a higher abundance of woodland species from the adjacent ancient woodland.
- 2.4.27 None of the constraints or limitations identified above (**paragraphs 2.4.20 -2.4.26**) are considered likely to be significant or restrictive enough to result in the misidentification of communities when using Rodwell.
- 2.4.28 Recording plant cover using the Domin scale is subjective, being affected by recorder bias as different surveyors may estimate different percentage cover for identical samples. As these surveys were completed by the same surveyor there is unlikely to be Domin scale deviation between survey locations or dates.

- 2.4.29 There is potential that notable or rare species were present at the survey locations but were not recorded during surveys as they were not clearly visible at the time of survey and / or were outside of the randomly selected survey quadrats.
- 2.4.30 Survey effort was considered to be appropriate for the size and complexities of the habitats surveyed. It is likely that any additional species, if present, occur at low frequencies, or emerge later in the survey season if they were not detected during the NVC surveys.
- 2.4.31 MAVIS software was used to analyse the floristic table sample size data. As MAVIS can be prone to misidentifying communities, interpretation of Rodwell was used as the primary method of classification; the MAVIS outputs are referred to where relevant.

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3. Results

3.1 Field Survey Results

- 3.1.1 The NVC surveys were undertaken over two consecutive years, with the survey areas evolving in-keeping with the proposed DCO Order Limits. The surveys were undertaken between 15 April and 03 June 2021, and 12 April and 15 June 2022.
- 3.1.2 Eleven NVC Communities were identified during the surveys. NVC communities identified during this sampling approach are considered typical of habitats within the wider area.
- 3.1.3 Results for each of the areas surveyed are presented below in **Sections 3.2 to 3.16**.

3.2 Angmering Park

General site description

- 3.2.1 Directly west of Warningcamp Down (**Figure 2.2, Appendix A**, National Grid Reference (NGR) - TQ 03808 07476) this field contained approximately 1.8 ha of tall rank grassland with very little variation and no signs of encroaching scrub or woodland. This grassland is identified as 'good semi-improved grassland' on the MAGIC maps Priority Habitat Inventory although it should be noted the confidence of this classification is low. This grassland was flanked by blocks of mature broadleaf woodland to the north and south.

Damp Grassland description

- Sample size: Five 2m² quadrats (Q1-Q5).
 - Survey date: 15 June 2022.
 - Average species count: 9.
- 3.2.2 This grassland consisted of dense tussocky grass with Yorkshire fog dominant. Other species include those typical of seasonally flooded or waterlogged grassland such as hairy sedge, common sedge, water mint and marsh foxtail. A high abundance of perennial rye suggests this field is improved which may be due to the depositing of nutrients from seasonal flooding, or from management for hay or silage. Although not recorded inside quadrats small areas of dominant soft rush were noted to the west of the field, suggestive of frequent wetting.

Community matches

- 3.2.3 The closest match for this community was MG10a (*Holcuc-Juncetum effuse* rush pasture – Typical sub-community) due to the high abundance of Yorkshire fog and species typical of permanently moist sites. This was supported by MAVIS. Creeping buttercup was present at the expected frequency for this community,

hairy sedge was present but at a greater abundance than would be expected. Soft rush was not as commonly found as would be expected in this community however in some small areas it was totally dominant. This may be due to control methods if this land is being used for silage or hay production.

- 3.2.4 **Final community** – MG10a (*Holco-Juncetum effuse* rush pasture, typical sub-community)

3.3 Calcot Wood

General site description

- 3.3.1 Twelve ha of mature conifer plantation located at NGR - TQ 17436, 14922. This conifer woodland was dominated by Scots pine, with woodland parcels separated by glades and forest tracks. The woodland canopy was relatively sparse with 30-40% of the canopy cover open. During the summer months, much of the field layer was overgrown with bramble however significant areas of bare ground remain (**Image 16, Appendix A**). This is likely due to needle litter and grazing by deer suppressing the growth of plant species.

Pine plantation woodland description

- Sample size: Five 50m² quadrats (Q1-Q5).
 - Survey date: 12 April 2022, 14 June 2022.
 - Average species count: 12.
- 3.3.2 This woodland was dominated by mature Scots pine, other tree species commonly recorded include sessile oak and silver birch, with holly recorded in the understory. Non-native sitka spruce was recorded at the northwest corner of the survey area. The understory was largely absent with some younger silver birch present at low density. Typical woodland species were commonly recorded such as foxglove, wood sage, bluebell and honeysuckle. Bryophyte cover was generally sparse apart from at Q2 where it accounted for 51-75% of ground cover.

Community matches

- 3.3.3 This woodland proved difficult to classify as it is not a semi-natural habitat. W18 (*Pinus sylvestric-Hylocomium splendens* woodland) is a fairly-close match for the canopy due to the dominance of Scots pine but strictly speaking these woodlands comprise native pinewoods or pine plantations within the native range of Scots pine. The field and ground layers do not correlate with W18.
- 3.3.4 W25 (*Pteridium aquilinum-Rubus fruticosus* underscrub) is a closer match based on the field and ground layers, this community consist of vegetation dominated by bramble and bracken. The presence of foxglove, creeping bent, creeping softgrass, sweet vernal, bluebell and the high abundance of wood sage support this. In this community it would be expected that trees would make a negligible contribution to cover, which was not found to be the case. This is supported by

MAVIS which found this community to most closely resemble W25b (47.15% match).

- 3.3.5 W25b shows a close association with W10 (*Quercus robur-Pteridium aquilinum-Rubus Fruticosus* woodland) and when W25b is found close to or within woodland it is nearly always of this type. It is therefore likely that this area was W10 woodland before being felled for conifer plantation, with some of the ground and field layer flora persisting.
- 3.3.6 **Final community** – W25b (*Pteridium aquilinum-Rubus fruticosus* underscrub, *Teucrium scorodonia* sub-community) with Scots pine canopy resembling W18 (*Pinus sylvestric-Hylocomium splendens* woodland).
- 3.3.7 Bluebell was recorded in this woodland. This is a Schedule 8 species of the Wildlife & Countryside Act 1981 (as amended) and as such is protected from picking and sale. No other notable plant species were recorded.

3.4 Crossbush

General site description

- 3.4.1 Survey effort focused on approximately 5 ha of homogeneous broad-leaved woodland which made up most of the survey area, this area is also designated as ancient woodland on MAGIC maps ancient woodland inventory (Defra, 2021), however a description of the scrub habitat is also provided. The woodland is situated on a gentle (approximately 10°) east-facing slope (NGR - TQ 03596 06570). Standing deadwood was frequently found along with a mixture of different aged trees. Bark stripping by squirrels was noted on some trees, however this was not extensive.

Broadleaved woodland

- Sample size: Five 50m² woodland quadrats; with one field and ground layer quadrat contained in each (Q1-Q5).
 - Survey dates: 15 April 2021, 24 May 2021.
 - Other woodland descriptor: Priority habitat: Lowland Mixed Deciduous Woodland.
 - Average species count: 17.
- 3.4.2 Quadrats Q1-Q3 were placed in the north-western part of the survey area, with Q4 and Q5 in the central areas; the south-western limit was atypical and was therefore not sampled.
- 3.4.3 The woodland was mature, with a near continuous canopy dominated by beech, ash and pedunculate oak. Non-native tree species, European larch and Norway maple were recorded occasionally in the canopy. The understory was generally sparse and consisted of constant beech and holly, frequent Norway maple, occasional field maple, and scarce elder, hazel, hawthorn and blackthorn;

particularly near the woodland edges. A single wild service tree was recorded in the understory, in Q4.

- 3.4.4 Bramble was constant throughout the field layer but generally was less than 40cm in height and accounted for <30% of ground cover. Other species found in the field layer included occasional gooseberry and male fern. The ground layer was generally dominated by bluebell with occasional rough meadow-grass and dog's mercury, constant cleavers, dog's mercury, and scarce common sorrel and primrose.

Community matches

- 3.4.5 The key provided in Rodwell suggest the community to be a good match for W15 (*Fagus sylvatica* – *Deschampsia flexuosa* woodland) due to beech being constant and dominant in the tree canopy along with pedunculate oak and holly. However, the ground layer of this community does not appear to be a close match due to the dominance of bluebells which would be expected to be scarce and should not comprise more than 25% of ground cover. Bluebell accounted for >50% of ground cover in *all* quadrats and in some cases >91% (Q1).
- 3.4.6 Communities suggested by MAVIS (W21b, 43.04% & W25 42.73%) are not a good match for this community as these are representative of scrub habitats as opposed to mature woodland.
- 3.4.7 From descriptions of community and constancy tables W8 (*Fraxinus excelsior*-*Acer campestre*-*Mercurialis perennis* woodland) appears to be the closest match. W8 is a very diverse community with canopy and field layers often varying independently of each other. On base-rich soils beech can become important competitors of the major trees of this community and can give it the appearance of a community in transition to high forest dominated by beech, as recorded in the quadrats sampled at this site. This woodland therefore appears to represent an intermediate stand in which the canopy is transitioning to beech woodland more typical of W15 however the ground and field layers were still more reminiscent of W8.
- 3.4.8 **Final community** – W8 (*Fraxinus excelsior*-*Acer campestre*-*Mercurialis perennis* woodland)
- 3.4.9 Bluebell was recorded in this woodland. This is a Schedule 8 species of the Wildlife & Countryside Act 1981 (as amended) and as such is protected from picking and sale. No other notable plant species were recorded.

3.5 Grassland at Wineham Lane

General site description

- 3.5.1 Approximately 3 ha of grassland found at TQ 24218 21358. At the time of survey (June 2022), the grassland had just been cut making it difficult to confirm typical condition and use, or identify species present. This survey area lies adjacent to a small parcel of remnant ancient woodland to the north, with the existing National

Grid Bolney substation directly to the south. Surrounding fields include agricultural pasture, used for hay / silage.

Neutral grassland

- Sample size: One 2 m² quadrat taken near the field margin which had not been cut, four other potential quadrat locations were found to be unsuitable for survey as it was not possible to effectively identify species following recent cut.
- Survey date: 14 June 2022.
- Species count: 13.

3.5.2 This grassland contained a variety of commonly found grass species typical of lowland neutral habitats. Of these Yorkshire fog and Crested dog's-tail were the most frequently occurring. Other species such as cock's-foot, sterile brome, false oat-grass and timothy formed a lesser component. False brome was also identified which is more commonly associated with woodland however as this quadrat was in a field margin adjacent to a block of broadleaf woodland this is not unexpected. The remainder of the field has been cut to approximately 2cm with grass cuttings left in place. This management is not sympathetic management of lowland meadows⁵. It is therefore unlikely that there are any notable management practices taking place at this field to improve wildflower diversity.

3.5.3 Herbs recorded were common plants typical of field margins and grassland these included red clover and creeping buttercup. Wood speedwell was recorded which is more commonly associated with woodland, this is due to the proximity of woodland to the north.

3.5.4 It was attempted to identify species present in the wider field at an additional four locations however this was largely unsuccessful, where species could be identified they were in keeping with Q1 with creeping buttercup and Yorkshire fog commonly identified.

Community matches

3.5.5 It was not possible to determine the community type of most of the survey area however Q1 was largely typical of dairy pastures, most closely resembling MG6 (*Lolium perenne-Cynosurus cristatus*). This was due to the combination of a high prevalence of Crested dog's-tail and low species diversity. This is despite perennial rye grass being absent instead of constant as would be expected in this community. Rodwell states that Yorkshire fog and cock's-foot can obtain higher abundance when this grassland is under-grazed, this was found to be the case at Q1. As Q1 was not cut during typical management it is likely that this lack of management will encourage a greater abundance of coarse tussocky grass species at this location compared to Q2-Q5. High abundance of fast-growing tussocky grass species with few forbs generally indicates a high nutrient load, which would not be expected if this grassland was unimproved meadow.

⁵ It is not recommended to cut until mid-July to allow wildflowers time to set seed for species rich lowland meadows

3.5.6 **Final community** – MG6 (*Lolium perenne*-*Cynosurus cristatus*).

3.6 Poling Copse

General site description

3.6.1 Broadleaf woodland with a complete canopy cover and very sparse understory and field layer found at NGR - TQ 03786 06083. Q3 and Q4 appeared to be more typical of plantation woodland with a sparse ground layer and dense coppiced hazel. Q1, Q2 and Q5 were more typical of mature broadleaf woodland with a more developed ground layer typical of semi-natural woodland, and Ancient Woodland Indicator (AWI) species present. AWI species are as collated by Rose (2006) and change depending on to geographic locations, all survey areas in this appendix were classed as southeast. Signs of management were evident with coppiced hazel throughout. The survey area consisted of a 1.4 ha section of a much larger area of woodland which stretches approximately 4-5km east and northeast.

Broadleaved woodland

- Sample size: Five 50m² quadrats (Q1-Q5).
- Survey date: 15 June 2022.
- Average species count: 11.

3.6.2 This woodland was dominated by semi-mature coppiced hazel (at least 51% of cover throughout), with mature sessile oak accounting for at least 26% of cover in all quadrats. Sycamore and field maple were also found to be constant throughout although they formed a lesser component of the canopy. Holly and silver birch were also recorded. The field and ground layer were found to be very sparse during the June 2022 visit at all quadrats except for Q5.

Community matches

3.6.3 The key provided in Rodwell suggest the community to be a good match for W8d (*Fraxinum excelsior* – *Acer campestre* – *Mercurialis perennis* woodland, *Hedera helix* sub-community). This is due to the constant species hazel, field maple and bramble and the dominance of ivy in places. A high abundance of oak would be expected in this sub-community compared to other W8 woodlands, as was found to be the case. At the ground layer bluebell was dominant in places during April surveys although much of this vegetation had died back by June 2022. Other ground species were largely absent although some common woodland species such as honeysuckle, false brome, wood sedge and holly (saplings) were recorded. A greater abundance of species was recorded at the ground layer at Q5 which was towards the edge of the woodland including ground ivy, wood dock, cleavers, common nettle and primrose.

3.6.4 A reasonably close match was W10 (*Quercus robur* – *Pteridium aquilinum* – *Rubus fruticosus* woodland), particularly the *Holcus lanatus* sub-community,

however this community lacks a high abundance of field maple, with eagle fern expected to be constant, instead of absent. Communities suggested by MAVIS (W8d, 43.44%, W10c, 39.34%) are largely in line with this.

- 3.6.5 **Final community** – W8d (*Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, *hedera helix* sub-community).
- 3.6.6 Bluebell was recorded in this woodland. This is a Schedule 8 species of the Wildlife & Countryside Act 1981 (as amended) and as such is protected from picking and sale. No other notable plant species were recorded.

3.7 Spofforth North

General site description

- 3.7.1 This survey area consisted of two field compartments split into a northern (approximately 22 ha) section and southern (approximately 35 ha) section. As the communities in each field appeared to be slightly different and these fields covered a large area, they were analysed separately with the results of the northern field presented below.

Spofforth North

- 3.7.2 Homogenous grassland with little variation throughout. Red fescue, soft brome and cock's foot were all abundant along with a diverse mixture of common herbs such as daisy, creeping buttercup, common chickweed, white clover and dandelion *sp.*. Less frequently recorded species within this field include crosswort, bird's foot trefoil, red clover and lesser hop-trefoil.
- Sample size: 5 quadrats (Q6-Q10).
 - Survey date: 15 June 2022.
 - Sward Height: 10cm.
 - Average species count: 21.

Community matches – Northern field

- 3.7.3 Following the key in Rodwell suggests this community is MG11 (*Festuca rubra - Agrostis stolonifera-Potentilla anesira* grassland). In this community no grass species except red fescue and creeping bent are expected to be abundant, however soft brome, smaller cat's-tail and cock's-foot were constant. In addition to this no forbs would be expected to be constant with only white clover being frequent. This was not found to be the case with 12 forb species being at least frequent.
- 3.7.4 MG6c is suggested as a community type by MAVIS, likely because red fescue and creeping bent are abundant in this community, and Yorkshire fog is frequent as would be expected. Scarlet pimpernel was also found to be rare which is in line with this community. However, perennial rye grass, yellow oat grass and crested dogs' tail would all be expected to be constant, instead of absent.

3.7.5 MG6a (*Lolium perenne-Cynosurus cristatus* grassland) is a closer match due the absence of timothy grass or yellow oat grass. Forbs present are more in line with MG6a grassland than MG11 or MG6c with white clover, common mouse-ear, creeping buttercup, germander speedwell, yarrow and spear thistle all present, if at different frequencies than would be expected.

3.7.6 **Final community** – MG6a (*Lolium perenne-Cynosurus cristatus* grassland).

3.8 Spofforth South

General site description

3.8.1 This survey area consisted of two field compartments split into a northern (approximately 22 ha) section and southern (approximately 35 ha) section. As the communities in each field appeared to be slightly different and these fields covered a large area, they were analysed separately with the results of the southern land parcel presented below. This field contained a high abundance of grass species such as cock's foot, red fescue, smaller cat's tail and soft brome. Forbs frequently recorded include smooth hawk's-beard, rough hawk's-beard, white clover, lesser stitchwort, field madder and red bartsia. Fairy flax and red bartsia were both recorded which are generally associated with less fertile soils suggesting there is not large levels of nutrient enrichment.

Spofforth South

- Sample size: 5 quadrats (Q1-Q5).
- Survey dates: 15 June 2022.
- Sward Height: 12cm.
- Average species count: 17.

Community matches – Southern field

3.8.2 Following the key in Rodwell suggests this community is MG11 (*Festuca rubra - Agrostis stolonifera-Potentilla anesira* grassland). In this community no grass species except red fescue and creeping bent are expected to be abundant, however both soft brome and cock's-foot were constant. In addition to this no forbs would be expected to be constant with only white clover being frequent. This was not found to be the case with 19 forb species being at least frequent.

3.8.3 MG6a (*Lolium perenne-Cynosurus cristatus* grassland) is suggested as a community type by MAVIS, likely because red fescue and creeping bent are abundant in this community, and smaller cat's tail and cock's-foot are constant. However, perennial rye grass and crested dogs' tail would be expected to be constant, instead of rare and absent, respectively. Despite this the forbs present are more in line with MG6c grassland than MG11 with white clover, common mouse-ear, creeping buttercup and black medic, yarrow and spear thistle all present, if at different frequencies than would be expected.

- 3.8.4 Anther community suggested by MAVIS is OV23 (*Lolium perenne* – *Dactylis glomerata* community) which is characteristic of resown recreational areas subjected to regular disturbance with irregular mowing. In this community, perennial rye grass would be expected to be constant however it was found to be very rare. In addition to this, herbs such as bulbous buttercup, cut-leaved geranium, and daisy; and grass species such as red fescue, soft brome and creeping bent were found at much higher frequency than would be expected. As such this community is not deemed to be a close match.
- 3.8.5 **Final community** – MG6a (*Lolium perenne*-*Cynosurus cristatus* grassland, typical sub-community).

3.9 Sullington Hill LWS

General site description

- 3.9.1 NVC survey effort focused on the area of calcareous grassland identified to the west of the site, a brief description of the other habitats present is also provided below.

Calcareous grassland description

- Sample size: Five 2M² quadrats.
 - Survey dates: 26 May 2021, 03 June 2021.
 - Sward Height: 8cm during both site visits.
 - Average species count: 27.
- 3.9.2 Calcareous grassland areas surveyed were predominantly located on the east facing slope which has a gradient between 20-30°.
- 3.9.3 Quadrats Q1 and Q3 were sampled within the northern area of this slope and quadrats Q2, Q4 and Q5 were sampled within the southern area.
- 3.9.4 A sward height of ~8cm was typical in all samples, the sward did not exceed 15cm.
- 3.9.5 In total 48 species were identified within quadrats. On average approximately 20 species were identified per quadrat in May 2021 and increasing to approximately 27 in June 2021. Seventeen species were recorded exclusively in June 2021, with three species were recorded exclusively in May 2021.
- 3.9.6 The grassland was dominated by sheep's fescue, with tussocky species such as cock's-foot and upright brome also frequent. Herbs and sedges were frequent throughout, particularly bulbous buttercup and salad burnet, however in most cases individual species did not account for >10% of cover. There appeared to be slightly increased grazing pressure at the south of the survey area within Q5, however species recorded were similar to the less-grazed areas.
- 3.9.7 Some scattered hawthorn, elder, gorse and bramble were present, although this did not appear to be encroaching into the grassland. Ant hills were common

throughout indicating that the survey area had not been ploughed for at least 10 years (King, 1981). As shown on **Image 10, Annex A**, very few species were in flower during survey visits.

- 3.9.8 Signs of heavy grazing with cow dung were regularly observed throughout the survey area, with some areas showing signs of poaching, although no cattle were observed on either survey date.
- 3.9.9 Small-flowered buttercup is considered nationally scarce and was recorded in low numbers at Sullington Hill, within Q2 and Q3.

Community matches

- 3.9.10 Although MAVIS suggests CG2c (*Festuca ovina-Avenula pratensis* grassland, *Dicranum scoparium* sub-community) as the most likely community match for this grassland, upright brome would be expected to be typically infrequent and never abundant as such this seems unlikely.
- 3.9.11 Another less likely suggestion by MAVIS is CG4 (*Brachypodium pinnatum* grassland) and associated sub-communities, however in these communities tor-grass would be expected to exceed 10% cover; it was not recorded during these surveys.
- 3.9.12 CG3 (*Bromus erectus* grassland) is described as containing all swards in which upright brome makes up more than 10% of the cover and where other similar grasses such as tor-grass or downy oat-grass make up a negligible contribution. In the quadrats sampled, tor-grass and downy oat-grass were completely absent suggesting that CG3 is a close fit for this community.
- 3.9.13 All of the species which would be expected to be constant in CG3 (upright brome, glaucous sedge, sheep's fescue, bird's-foot trefoil, ribwort plantain and salad burnet) were found to be constant in the quadrats sampled, the exception being that upright brome was frequent. When present upright brome made up 35-50% of the plant cover in each quadrat which is in keeping with this community. Other flowering species present which are typical of CG3 include: bulbous buttercup, rough hawkbit, common knapweed, common ragwort, hedge bedstraw, yarrow, hairy violet, self-heal and red clover. Grass species present that match this community include cock's-foot, common bent, Yorkshire fog, smaller cat's tail, smooth meadow grass and quaking grass. As would be expected these grass species formed a lesser component of the sward and in some cases were scarce.
- 3.9.14 **Final community** – CG3 (*Bromus erectus* grassland).
- 3.9.15 Additional information was collected on other habitat types present within the survey area. Although these habitats were not subject to a full NVC survey, details are provided below to provide greater context of the wider site.

Semi-natural woodland

- 3.9.16 The semi-natural woodland located within the eastern half of the survey area contained a diverse mixture of semi-mature trees ranging from 8 to 12m in height.

- 3.9.17 Hazel and hawthorn were present in dense stands and shared co-dominance while blackthorn, holly, elder, dogwood and pedunculate oak were recorded occasionally. Canopy cover was dense at around 95%. Bramble, dog-rose, and clematis formed a shrub layer, with a number of common woodland species found at the ground layer including yellow archangel, lords-and-ladies, common nettle, red campion and dog's mercury.

Scrub

- 3.9.18 There is an area of scrub along the eastern edge of Sullington Hill, surrounded by the semi-natural woodland described above. The scrub was relatively homogeneous and low lying (no taller than approximately 1m, typically approximately 50cm tall); bramble was constant (accounting for >80% of ground cover) interspersed with constant dogwood. Yorkshire fog was constant within the ground layer; with false brome and sweet vernal grass scarce. A wide variety of herbs were identified with annual mercury and smooth bedstraw being the most regularly recorded. Other herbs which were regularly recorded but did not provide a large amount of coverage include: barren strawberry, common valerian, ground-ivy, herb-robert, nettle-leaved bellflower, field forget-me-not, slender thistle and spear thistle. Greater burdock and common ragwort were scarce.

3.10 Talbot & Baker I

General site description

- 3.10.1 A dense monoculture of Italian rye grass with very little variation or other species present, surrounded by mature hedgerows and tree lines. The field was flanked by drains to the north and south with connectivity to the Cowfold stream to the east. To understand if this resulted in damp conditions and the associated flora typical of floodplain grazing marsh, an NVC survey was carried out. The survey area was approximately 0.5 ha. The surrounding landscape was dominated by agricultural use.

Grassland description

- Sample size: Five 2m² quadrats.
- Survey date: 14 June 2022.
- Sward Height: 100cm.
- Average species count: 2.

Community matches

- 3.10.2 This species poor grassland is typical of highly productive grassland which has been subject to nutrient enrichment. Forbs were almost absent with a few occurrences of Broad-leaved dock and creeping buttercup which are typical of nutrient rich habitats. Italian rye is a commonly used species for hay leys in Britain and was found to be completely dominant at this location.

- 3.10.3 MG7 (*Lolio-plantaginion* leys and related grasslands) is the only community that somewhat matches this location. It is not a perfect match as typically perennial rye grass instead of Italian rye grass is the dominant grass species however this is due to a different seed mixture being used. Unlike MG7 which often contains small amounts of other forbs, forbs were almost absent in this field. Nonetheless this community represents intensively managed grasslands leys which were found at this location.
- 3.10.4 **Final community** – MG7 (*Lolio-plantaginion* leys and related grasslands).

3.11 Talbot & Baker II

General site description

- 3.11.1 A generally species poor sward of thick tussocky grass which at the time of survey, does not appear to be undergoing management and appears disused. The survey area was approximately 0.8 ha with the surrounding landscape dominated by a mixture of horse and cattle grazing pasture and cereal crops.

Grassland description

- Sample size: Five 2m² quadrats.
- Survey date: 14 June 2022.
- Sward Height: 80cm.
- Average species count: 7.

Community matches

- 3.11.2 This community is a good match for MG9b (*Holcus lanatus-Deschampsia cespitosa* grassland, *Arrhenatherum elatius* sub-community) due to the high abundance of Yorkshire fog and the occasional presence of tufted hairgrass. Other tussocky grass species such as false oat-grass and cock's foot accounted for >50% of ground cover in places forming a significant component of the sward, as would be expected in this community, this is supported by MAVIS.
- 3.11.3 Meadow foxtail occurs at a higher abundance than would be expected for MG9 grassland (constant instead of occasional). Meadow barley would be expected to be scarce and account for no more than 4% of cover, however it was found to be constant within this field and accounted for 34-50% of cover within Q1 and Q5, this does not match any of the vegetation communities identified by Rodwell.
- 3.11.4 In addition to MG9b MAVIS also suggests MG1b (*Arrhenatherum elatius* grassland, *Urtica dioica* sub-community) as a likely community. MG1b is a fairly-close match however false oat-grass, common nettle and hogweed would all be expected to occur at a much higher frequency.
- 3.11.5 **Final community** – MG9b (*Holcus lanatus-Deschampsia cespitosa* grassland, *Arrhenatherum elatius* sub-community).

3.12 Woodland at Wineham Lane

General site description

- 3.12.1 The survey area was a block of broadleaved plantation woodland approximately 4.3 ha in extent (**Figure 2.6 Annex A**). The woodland had good connectivity to the wider landscape through mature treelines and was surrounded in the wider landscape by agricultural fields, buildings and existing National Grid Bolney substation approximately 120m to the southeast. Although access to the periphery of the site was possible from public rights of way, the internal areas of plantation were not accessible to the public, nor were there permissive paths; the presence of thick bramble and blackthorn make it unlikely that disturbance from the public would be significant.

Broadleaved plantation woodland

- Sample size: Five 50m² woodland quadrats; with one 4m² field and ground layer quadrat contained in each (Q1-Q5).
 - Survey dates: 15 April 2021, 16 April 2021, 24 May 2021.
 - Average species count: 20.
- 3.12.2 This plantation woodland contained a variety of native semi-mature broadleaved tree species. The most frequently recorded canopy species were sessile oak, ash, bird cherry and field maple which were all constant; small-leaved lime was also frequent. Signs of a plantation woodland include tree tubes, many trees being of a similar age and a clearly planting pattern, with many in rows with equal spacing (**Image 10 Annex A**). Canopy cover was up to 80% with some more open glades also present particularly along the northern boundary of the survey area. Standing deadwood from ash trees was more frequent in the western half of the survey area, likely due to ash die back. However, in no cases did the cover of standing deadwood exceed 5%. In many places, it was difficult to distinguish between the understory and the canopy with scrubby species such as blackthorn and hawthorn forming the canopy, while also being constant and frequent in the understory respectively. Constant bramble and occasional dogrose made the scrub dense and impenetrable in places.
- 3.12.3 The field and ground layers were notably sparse with fallen leaves and bare ground accounting for 50-75% of cover across much of the woodland. Wood meadow-grass was constant but in no cases made up >10% of ground cover. Common bent and rough meadow-grass were occasional and sweet vernal was found to be rare. Q2 was found to contain significant areas of grass cover with 35-50% cover of common bent. Forbs were rarely recorded and in no cases accounted for >10% of ground cover, forbs recorded were scarce spear thistle, rosebay willowherb, wood speedwell, bugle, broad buckler-fern, wood avens and creeping buttercup. Bryophytes were scarce throughout though springy turf-moss, *Plagiothecium sp.* and common feather moss were all recorded.

Community matches

- 3.12.4 This woodland was difficult to classify as it had been planted within the last 20 years and therefore did not comprise a typical semi-natural woodland community. The ground layer has not had time to sufficiently establish a woodland ground flora since planting, as such it does not match any woodland communities as described by Rodwell, and showed signs of relic grassland that had existed at the site prior to planting. Based on the high abundance of ash and field maple in the canopy the closest community to this would be W8 (*Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland), however this is not a very close match. This is supported by MAVIS which suggested W8d and W8a as the most closely matching community.
- 3.12.5 **Final community** – No match for woodland, canopy has some similarities to W8 (*Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland).

3.13 Warningcamp Hill

General site description

- 3.13.1 Survey effort focused on approximately 2 ha of the north and south facing slopes at the eastern boundary of Warningcamp Hill and New Down Local Wildlife Site (LWS). These were two areas of calcareous grassland on steep slopes, up to 45° in places, directly facing each other. The wider landscape consists of pasture for sheep and cattle grazing, with little urban development. The survey area contains short-grazed calcareous grassland on steep north and south facing slopes leading into a central valley. Within the central valley is a tree-line surrounded by taller vegetation. The northern boundary of the grassland was encroached by scattered scrub comprising thick gorse, bramble and hawthorn. The survey area is subject to regular disturbance from recreational users including dog walkers, cyclists and hikers.

Calcareous grassland description

- Sample size: Five 2m² quadrats.
 - Survey dates: 25 May 2021, 02 June 2021.
 - Average Sward Height: 20cm.
 - Average species count: 24.
- 3.13.2 Quadrats Q1 and Q2 were sampled within the north facing slope in the southern half of the site; quadrats Q3 to Q5 were sampled within the south facing, northern half of the site.
- 3.13.3 A sward height of approximately 20cm was typical in all quadrats; and did not exceed 35cm. Ant hills were common indicating that the area had not been ploughed for at least 10 years (King, 1981). During both survey visits, few species were in flower (**Image 16, Annex A**), particularly the grasses which were predominantly identified using vegetative characteristics.

- 3.13.4 In total 44 species were recorded within the five quadrats. On average approximately 19 species were identified per quadrat in May 2021, increasing to approximately 24 species in June 2021. Nine species were recorded exclusively in June 2021, and one species recorded exclusively in May 2021.
- 3.13.5 The grassland was dominated by the sheep's fescue, recorded as constant particularly within quadrats Q1 and Q2 on the north facing slope. Common bent was constant, accounting for 35-50% of ground cover in places on the south facing slopes but was not recorded in Q1 or Q2 on the north facing slopes. The tussocky grasses, Yorkshire fog, meadow fescue and cock's-foot were constant throughout the survey area but rarely accounted for >10% of ground cover each. Other grass species recorded in lower numbers include false oat-grass, crested hair-grass, Crested dog's-tail and soft-brome.
- 3.13.6 Forbs generally accounted for at least 20% of ground cover with this split amongst multiple species. The most frequent herb species identified were bulbous buttercup, lady's bedstraw, ribwort plantain, bird's-foot trefoil, germander speedwell, common ragwort and creeping cinquefoil. Sedges were scarcely recorded with only a single species – glaucous sedge – recorded in one quadrat.
- 3.13.7 Small-flowered buttercup was not recorded within the survey area despite being identified as present at Warningcamp Hill during the desk study. It may be that small-flowered buttercup populations are located outside of the survey area, or this could be due to under-recording from this species emerging late as explained in constraints.
- 3.13.8 At the bottom of the slope a line of semi-mature elder, hawthorn and hazel is surrounded by thick vegetation (**Image 17, Annex A**) typical of nutrient rich environments. This area showed signs of improvement, with additional nutrients potentially derived from agricultural runoff; common nettle was found to be dominant at the field layer. Other species present within the field layer included white dead-nettle, lords-and-ladies, ground-ivy, common hogweed, cleavers, false brome and marsh marigold.
- 3.13.9 This tree-line was flanked by approximately 30m wide area of flattened improved grassland, with species recorded reflective of higher nutrient environments including: frequent creeping buttercup, cock's-foot, Yorkshire fog, annual meadow grass, broad-leaved plantain, dandelion *sp.*, silverweed and white clover. There was a lower species diversity within the valley-bottom than was recorded within the surrounding sloped grasslands.
- 3.13.10 Signs of cattle grazing were observed within the grassland areas with cow dung observed throughout; disturbance from cattle was significant in flatter areas at the bottom of the valley with frequent poached areas and bare ground. No cattle were present on either of the survey days. A cattle drinking trough was also noted in the valley basin which was surrounded by bare ground from disturbance by cattle.

Community matches

- 3.13.11 Two potential matches for this community are MG5b (*Cynosurus cristatus-Centaurea nigra* grassland, *Galium serum* sub-community) and CG2c (*Festuca ovina-Avenula pratensis, Holcus lanatus-Trifolium repens* sub-community), which

is supported by MAVIS (50.83% and 48.6% respectively). Rodwell does state that in some cases, the vegetation of MG5b can closely resemble CG2 grassland in its floristics and structure.

- 3.13.12 MG5b is a close match for this community based on the following species being constant: Yorkshire fog, cock's-foot, bird's foot trefoil and ribwort plantain. Although lady's bedstraw was not constant as would be expected in this sub-community, it was frequent. The presence of creeping cinquefoil and lesser trefoil is notable as these species are usually absent from CG2 grasslands. However, red fescue would be expected to be constant in the place of sheep's fescue and crested dog's-tail was rare, rather than constant. In addition to this, yarrow, common knapweed and yellow oat-grass would all be expected to be constant but they were absent within the quadrats sampled.
- 3.13.13 CG2c appears to be a closer match, as in this community sheep's fescue was constant with other more bulky and coarse-leaved grass species being present such as constant Yorkshire fog and frequent cock's-foot, common bent and false oat-grass.
- 3.13.14 Other herbs present appeared to be representative of CG2c with red and white clover both constant. Hedge bedstraw and hairy violet were both recorded - matching this community, note that both species would be expected to be absent in MG5b. Other herbs recorded which are typical of this community include black medic, salad burnet, bird's-foot trefoil, bulbous buttercup, ribwort plantain and self-heal.
- 3.13.15 **Final community** – CG2c (*Festuca ovina*-*Avenula pratensis*, *Holcus lanatus*-*Trifolium repens* sub-community) with elements of MG5b (*Cynosurus cristatus*-*Centaurea nigra* grassland, *Galium serum* sub-community)

3.14 Workhouse Copse

General site description

- 3.14.1 A small mixed woodland approximately 1.4 ha between Water Lane and Buncton Chapel. The wider landscape consists of agricultural fields and rural residential properties. The survey area consisted of approximately 0.11 ha of mature mixed woodland dissected by the Wiston stream, which flows north to south through the woodland. This woodland showed signs of regular access with a well-worn path through the centre, the effects of trampling on ground flora appeared to be more pronounced at the south of the survey area, with more areas of bare ground. The survey area was too small to take more than one sample for the canopy and understory layer as explained in the survey constraints.

Mixed woodland

- Sample size: one 50m² woodland quadrat; five 4m² field and ground layer quadrats (Q1-Q5).
- Survey dates: 16 April 2021, 24 May 2021.

- Average species count: 17.
- 3.14.2 Quadrats Q1-Q5 were spread evenly throughout the woodland quadrat with Q1 to the north adjacent to a larger block of woodland and Q5 in the south.
- 3.14.3 This woodland strip contained a mixture of mature coniferous and broadleaved trees up to approximately 40m tall with a canopy cover of >90%. In the canopy Scots pine and sweet chestnut shared co-dominance with a single mature pedunculate oak at the south of the woodland quadrat. A single mature Scots pine was also recorded along with a fallen mature Scots pine. The presence of Scots pine is likely due to planting, with no indicators typical of semi-natural Scots pine woodland such as wavy-hair grass, heather or bulkier mosses such as sphagnum moss or rough goose neck moss were recorded.
- 3.14.4 The understory was diverse and contained a variety of broadleaved trees such as beech, sycamore and cherry (scarce at <4% cover), occasional holly, elder, English elm and field maple (4-10% cover). Coppiced hazel was frequent (26-33% cover). The field layer was dominated by the low lying vernal including: bluebell and wood anemone (both constant) with lesser celandine frequent. Other plants which were recorded occasionally included dog's mercury, lords-and-ladies, hard shield-fern, primrose, white dead-nettle and red campion. Mosses were constant in some areas where vascular plant cover was sparse with Swan's neck, Thyme moss, common feather moss and *Fissidens sp.* all recorded.

Community matches

- 3.14.5 This woodland proved difficult to classify. Following the key provided in Rodwell W10b (*Quercus robur-Peridium aquilinum-Rubus fruticosus* woodland, *Anemone nemorosa* sub-community) appeared to match the community recorded within the quadrats sampled. This is primarily because wood anemone largely replaced bluebell as a vernal dominant in places (although both are constant), coppiced hazel was the most frequent shrub and sweet chestnut was constant in the canopy. Scots pine would be expected to be scarce this community instead of dominant however its prevalence is likely a result of planting, so the presence of Scots pine is disregarded.
- 3.14.6 Although the canopy layer appears to be a good match for W10b the field and ground layers recorded within the quadrats sampled, were not a particularly close match with this community despite bluebell being constant, with lesser celandine found to be constant instead of scarce and bramble found to be absent instead of constant. Annual dog's mercury, lords-and-ladies and primrose were all recorded as being either scarce or occasional, however they would be expected to be absent from this community.
- 3.14.7 MAVIS suggests W8b (*Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, *anemone nemorosa* sub-community) likely due to the percentage cover of hazel, wood anemone and lesser celandine. However, the canopy for this community is not a close match with ash completely absent, instead of constant, and sweet chestnut constant instead of scarce. Many of the ground layer species that would be expected to be frequent such as enchanter's-nightshade, wood avens, dog violet and yellow archangel were absent. Despite this, this is still a closer match at the ground level than W10b with bluebell and lesser celandine

both constant, primrose, annual dog's mercury, *Fissidens sp.*, red campion and common nettles all being present but in no cases being more than occasional.

- 3.14.8 **Final community** – W10b (*Quercus robur-Peridium aquilinum-Rubus fruticosus* woodland, *Anemone nemorosa* sub-community) with similarities to W8b (*Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, *anemone nemorosa* sub-community).

3.15 Notable plant species recorded

- 3.15.1 One WCA Schedule 8 listed species, Bluebell, was recorded during NVC surveys, with records at Calcot Wood, Crossbush, Poling Copse and Workhouse Copse. Small-flowered buttercup is considered nationally scarce (though increasing in Sussex, (Sussex Wildlife Trust, 2001)) and was recorded at Sullington Hill LWS. No other notable plant species were recorded during the NVC surveys undertaken in 2021 and 2022.

3.16 Legally controlled plant species

- 3.16.1 No legally controlled species were found to be present within or immediately adjacent to the survey area.

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4. Summary

4.1.1 National Vegetation Classification (NVC) Surveys were successfully completed across all survey locations, with the constraints listed in **Section 2.4** not deemed to be significant enough to impact the results at survey locations, except for Grassland at Wineham Lane. **Table 4-1** below summarises the results of NVC surveys and provides information on priority habitats associated with these communities.

Table 4-1 Results of NVC surveys

| Survey area | NVC community | Status |
|-----------------------|---|---|
| Angmering Park | MG10a (<i>Holco-Juncetum effuse</i> rush pasture, typical sub-community) | <p>Priority habitat: Coastal and Floodplain Grazing Marsh.</p> <p>MG10 grassland is often associated with wet meadows and pasture. They are often communities degraded through agricultural improvement, drainage failure or conversely recolonising vegetation following abandonment of pasture / arable farming activities on poorly drained soils⁶.</p> <p>This habitat does not have the species rich composition that would be associated with semi-natural Coastal and Floodplain Grazing Marsh Priority Habitat (CFGM). However, the presence of ditches which are likely to contain standing water throughout much of the year at the western end of this field are in line with CFGM, which is largely defined by features rather than vegetation type.</p> <p>Other features typical include periodic inundation, grazing by livestock and location on floodplains. The eastern end of the survey area lacks surrounding ditches and as such would be unlikely to qualify as CFGMPH.</p> |

⁶ A Review of the National Vegetation Classification for the Calthion group of plant communities in England and Wales (2017) Natural England.

| Survey area | NVC community | Status |
|----------------------------------|---|--|
| Calcot Wood | W25b (<i>Pteridium aquilinum-Rubus fruticosus</i> underscrub, <i>Teucrium scorodonia</i> sub-community) with Scots pine canopy resembling W18 (<i>Pinus sylvestric-Hylocomium splendens</i> woodland) | <p>Priority habitat: No</p> <p>Despite the presence of some Ancient Woodland Indicator (AWI) species this woodland is not semi-natural and is dominated by planted conifer trees of a similar age.</p> <p>Priority habitat: Ancient replanted woodland. The presence of AWI species and the inclusion of this woodland on the ancient woodland inventory (Defra, 2021) suggests this site is Ancient replanted woodland.</p> <p>Ancient woodland indicator (AWI) species recorded include: bluebell, slender St. John's-wort, honeysuckle, dog's mercury, sessile oak.</p> |
| Grassland an Wineham Lane | MG6 (<i>Lolium perenne-Cynosurus cristatus</i>) | <p>Priority habitat: No</p> <p>None of the indicator species typical of priority grassland habitat were recorded. It should be noted that recent cutting made it difficult to identify species. This is unlikely to be managed as good condition lowland meadow given the cutting regime in place will not allow many species of wildflowers to set seed. It is likely that this grassland is being managed as grass ley based on management practices observed and species recorded.</p> |
| Poling Copse | W8d (<i>Fraxinus excelsior-Acer campestre-Mercurialis perennis</i> woodland, <i>hedera helix</i> sub-community) | <p>Priority habitat: Lowland Mixed Deciduous Woodland Priority Habitat⁷.</p> <p>Some areas of this woodland are reminiscent of plantation woodland and do not appear to be natural, with a sparse ground layer and many hazel trees of a similar age. Despite this, the woodland is considered to meet lowland mixed deciduous woodland priority habitat criteria, particularly at the periphery of the woodland where it has characteristics of semi-natural woodland.</p> |

⁷ Lowland Mixed Deciduous Woodland habitat of principal importance. For description see: <https://data.jncc.gov.uk/data/2829ce47-1ca5-41e7-bc1a-871c1cc0b3ae/UKBAP-BAPHabitats-30-LowlandMixedDecWood.pdf> [Accessed May 2023]

| Survey area | NVC community | Status |
|------------------------------|--|--|
| | | <p>Priority habitat: Ancient replanted woodland- included on ancient woodland inventory (Defra, 2021). Absence of veteran trees suggests that this woodland is not true ancient woodland but has been planted on a site previously containing ancient woodland as suggested by MAGIC which classified it as Ancient Replanted Woodland.</p> <p>Ancient woodland indicator (AWI) species recorded include: bluebell, dog's mercury, primrose, scaly male fern, wood sedge, lesser celandine, holly, field maple, sessile oak.</p> |
| Spofforth North | MG6a (<i>Lolium perenne-Cynosurus cristatus</i> grassland, typical sub-community) | <p>Priority habitat: No</p> <p>No indication from desk study data, species assemblages recorded on site or management techniques associated with priority habitats that this is priority habitat.</p> |
| Spofforth South | MG6a (<i>Lolium perenne-Cynosurus cristatus</i> grassland, typical sub-community) | <p>Priority habitat: No</p> <p>No indication from desk study data, species assemblages recorded on site or management techniques associated with priority habitats that this is priority habitat.</p> |
| Talbot & Baker I | MG7 (<i>Lolio- plantaginion</i> leys and related grasslands) | <p>Priority habitat: No</p> <p>No indication from desk study data, species assemblages recorded on site or management techniques associated with priority habitats that this is priority habitat.</p> |
| Talbot & Baker II | MG9 (<i>Holcus lanatus-Deschampsia cespitosa</i> grassland, <i>Arrhenatherum elatius</i> sub-community) | <p>Priority habitat: No</p> <p>No indication from desk study data, species assemblages recorded on site or management techniques associated with priority habitats that this is priority habitat.</p> |
| Warningcamp Hill | CG2c (<i>Festuca ovina-Avenula pratensis, Holcus lanatus-Trifolium repens</i>) | <p>Priority habitat: Lowland Calcareous grassland⁸.</p> |

⁸ Calcareous grassland habitat of principal importance. For description see: <https://data.jncc.gov.uk/data/c212f9ed-9df8-408a-83cf-668ef9802b2f/UKBAP-BAPHabitats-25-LowlandCalcGrass.pdf> [Accessed 02/09/2021] and <https://webarchive.nationalarchives.gov.uk/ukgwa/20110303150119/http://www.ukbap.org.uk/UKPlans.aspx?ID=12> [Accessed 02/09/2021]

| Survey area | NVC community | Status |
|----------------------------|--|--|
| | sub-community) with elements of MG5b (<i>Cynosurus cristatus-Centaurea nigra</i> grassland, <i>Galium serum</i> sub-community) | The species assemblages recorded and most closely matching community are consistent with lowland calcareous grassland priority habitat. CG2 is one of three short-sward communities associated with heavy grazing and is regarded as “typical” chalk grassland. |
| Sullington Hill LWS | CG3 (<i>Bromus erectus</i> grassland) | Priority habitat: Lowland Calcareous grassland ⁹ . The species assemblages recorded, and the most closely matching community are consistent with lowland calcareous grassland priority habitat. CG3 is one of four communities associated with low levels of grazing with the calcicolous grassland group. |
| Crossbush | W8 (<i>Fraxinus excelsior-Acer campestre-Mercurialis perennis</i> woodland) | Priority habitat: Lowland Mixed Deciduous Woodland Priority Habitat Priority habitat: Ancient woodland-included on ancient woodland inventory (Defra, 2021). Ancient woodland indicator (AWI) species recorded include: bluebell, dog’s mercury, primrose, wood anemone, wild garlic and wild service tree. |
| Workhouse Copse | W10b (<i>Quercus robur-Peridium aquilinum-Rubus fruticosus</i> woodland, <i>Anemone nemorosa</i> sub-community) with similarities to W8b (<i>Fraxinus excelsior-Acer campestre-Mercurialis perennis</i> woodland, <i>anemone nemorosa</i> sub-community) | Priority habitat: Lowland Mixed Deciduous Woodland Priority Habitat Priority habitat: Ancient woodland – This area of woodland does not qualify as ancient (Lowland Mixed Deciduous Woodland Priority Habitat), but it does have some characteristics due to good connectivity to ancient woodland approximately 60m north. It is not included on the ancient woodland inventory (Defra, 2021) and lacked any veteran trees. Mature Scots pine were recorded; however, this species can reach ‘mature’ status at around 125-200 years old which would not confirm that this area of woodland has remained permanently wooded for over 400 years. |

| Survey area | NVC community | Status |
|---------------------------------|--|---|
| | | Some AWI species were recorded as present including: bluebell, dog's mercury, primrose, red campion and wood anemone |
| Woodland at Wineham Lane | <i>No match for woodland, canopy has some similarities to W8 (Fraxinus excelsior-Acer campestre-Mercurialis perennis woodland)</i> | Priority habitat: No Nothing to indicate this is ancient woodland or plantation on ancient woodland sites based on very sparse ground flora. No clear example of good quality priority habitat as many trees of a similar age structure and character. There is little regrowth or clearings, no recognisable woodland NVC community, generally a single storey across all survey plots, no veteran trees present and a very sparse ground and field layer. |

4.1.2 Additional information on priority habitats recorded are provided in **Table 4-2** below. **Section 1.1** provides further details on legislation relating to legally protected habitats and species identified in this appendix.

Table 4-2 Priority habitat descriptions

| Priority habitat type | Description |
|--|--|
| Lowland Calcareous grassland | Lowland calcareous grasslands are developed on shallow lime-rich soils generally overlying limestone rocks, including chalk. They are typically managed as components of pastoral or mixed farming systems, supporting sheep, cattle and sometimes horse grazing. A large number of rare plants are associated with this habitat, there is at least a moderate representation of species typical of calcareous grassland. Lowland calcareous grassland is included within the broad habitat type of semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>) and is identified in Annex 1 of the EC Habitats Directive as of Community interest. |
| Lowland Mixed Deciduous Woodland Priority Habitat | Lowland mixed deciduous woodland includes woodland growing on the full range of soil conditions, from very acidic (<4 pH) to base-rich, and includes most semi-natural woodland in southern and eastern England. Lowland Mixed Deciduous Woodland also occurs in parts of lowland Wales and Scotland. It usually occurs on sites with well-defined boundaries, at relatively low altitudes, although altitude is not a defining feature. Many are classed as ancient woodland. |

| Priority habitat type | Description |
|-------------------------|---|
| Ancient woodland | Areas of woodland which have remained woodland for over 400 years, often listed on the Ancient Woodland Inventory (Defra, 2021). Ancient woodland requires special consideration before planning consent can be granted: <i>'planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss.'</i> (Ministry of Housing, Communities & Local Government, 2012). |

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5. Glossary of terms and abbreviations

| Term (Acronym) | Definition |
|----------------|--------------------------------------|
| DCO | Development Consent Order |
| EIA | Environmental Impact Assessment |
| EEC | European Economic Community |
| CFGM | Coastal and floodplain grazing marsh |
| ES | Environmental Statement |
| GPS | Global Positioning System |
| HLS | Higher Level Stewardship |
| JNCC | Joint Nature Conservation Committee |
| km | Kilometre |
| LWS | Local Wildlife Site |
| M | Metre |
| NVC | National Vegetation Classification |
| OS | Ordnance Survey |
| SAC | Special Area of Conservation |
| SxBRC | Sussex Biodiversity Record Centre |
| SPA | Special Protection Area |
| SSSI | Site of Special Scientific Interest |

6. References

CEH, (2016). *Modular Analysis of Vegetation Information System (MAVIS) Version 1.03*. CEH. [Online] Available at: <https://www.ceh.ac.uk/services/modular-analysis-vegetation-information-system-mavis> [Accessed July 2022].

Council Directive 92/43/EEC., 1992 (as Amended). *The Habitats Directive 92/43/EEC*. [Online]. Available at [EUR-Lex - 31992L0043 - EN - EUR-Lex \(europa.eu\)](https://eur-lex.europa.eu/lexuri-uri.do?uri=CELEX:31992L0043-EN) [Accessed 05 April 2023.]

Department for Environment, Food and Rural Affairs (Defra), (2021). *MAGIC webpage*. [Online]. Available at <https://magic.defra.gov.uk/>. [Accessed May 2023].

Dring, J.S., (2000). *SIMIL: A suite of programs for calculating the similarity between new quadrat data and the units of the National Vegetation Classification*. Unit of Vegetation Science. Lancaster University.

JNCC, (2021). *JNCC Resource Hub*. [Online]. Available at <https://jncc.gov.uk/>. [Accessed May 2023].

King, T. J. (1981). *Ant-Hills and Grassland History*. *Journal of Biogeography*, vol. 8, no. 4, 1981, pp. 329–334. JSTOR, www.jstor.org/stable/2844766. Accessed 20 July 2021.

Legislation.gov.uk. n.d. *Wildlife and Countryside Act 1981*. [online] Available at: <http://www.legislation.gov.uk/ukpga/1981/69/section/28P>. [Accessed 5 April 2023].

Ministry of Housing, Communities & Local Government (2012). *National Planning Policy Framework*. [online]. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf [Accessed 05 September 2022]

Natural England (2017). *A review of the National Vegetation Classification for the Calthion group of plant communities in England and Wales*. [Online]. Available at <http://publications.naturalengland.org.uk/file/4890571146002432> [Accessed 19 June 2022]

Natural England and the Forestry Commission. (2014). *Ancient woodland, ancient trees and veteran trees: protecting them from development*. [Accessed 18 May 2014].

Natural England, (2021). *Designated Sites View*. Available at <https://designatedsites.naturalengland.org.uk/>. [Accessed May 2023].

Poland, J. & Clement E.J. (2009) *The Vegetative Key to the British Flora*. Botanical Society of the British Isles, Durham.

Rodwell, J.S. (Ed.), Pigott, C.D., Ratcliffe, D.A., Malloch, A.J.C., Birks, H.J.B., Proctor, M.C.F., Shimwell, D.W., Huntley, J.P., Radford, E., Wigginton, M.J. & Wilkins, P. (1998_a). *British Plant Communities. Vol. 1: Woodlands and scrub*. Cambridge University Press, Cambridge.

Rodwell, J.S. (Ed.), Pigott, C.D., Ratcliffe, D.A., Malloch, A.J.C., Birks, H.J.B., Proctor, M.C.F., Shimwell, D.W., Huntley, J.P., Radford, E., Wigginton, M.J. & Wilkins, P. (1998_b).

British Plant Communities. Vol. 3: Grassland and Montane Communities. Cambridge University Press, Cambridge.

Rodwell, J.S. (Ed.), Pigott, C.D., Ratcliffe, D.A., Malloch, A.J.C., Birks, H.J.B., Proctor, M.C.F., Shimwell, D.W., Huntley, J.P., Radford, E., Wigginton, M.J. & Wilkins, P. (2000). *British Plant Communities. Vol. 5: Maritime Communities and Vegetation of Open Habitats.* Cambridge University Press, Cambridge.

Rodwell, S (2006) *National Vegetation Classification: Users' handbook.* Joint Nature Conservation Committee.

Rose, F. (2006) *the Wild Flower Key – How to identify wild plants, trees and shrubs in Britain and Ireland.* Penguin Group, London

Sussex Wildlife Trust., 2001. *The Sussex rare plant register of Scarce and Threatened Vascular Plants, Charophytes, Bryophytes and Lichens.* Sussex Wildlife Trust.

Shimwell, D, W. (1972) *The Description and Classification of Vegetation.* University of Washington Press, Seattle. 322pp.

Stace, C, A. (2019). *New Flora of the British Isles.* Fourth Edition. C&M Florisitics

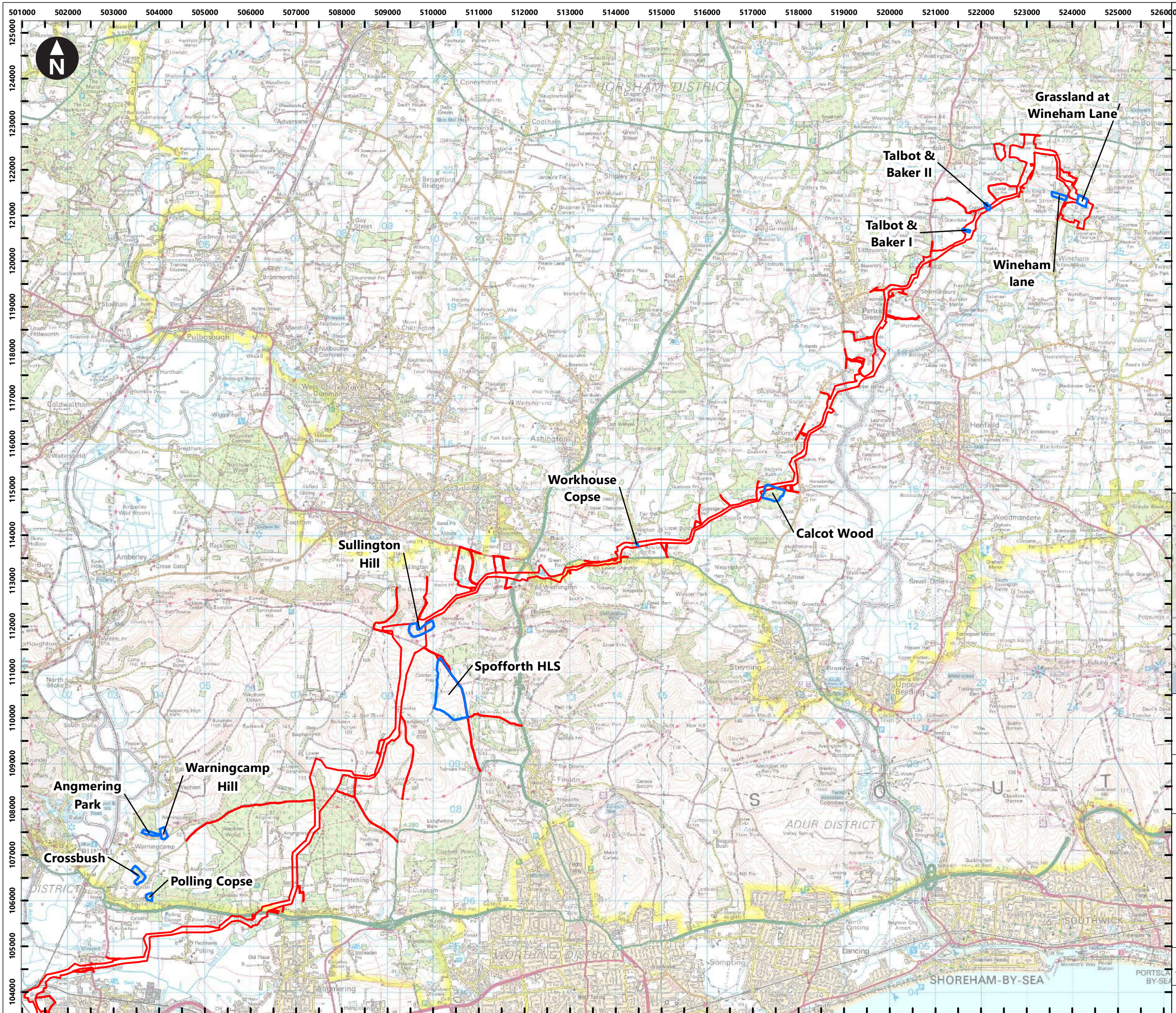
Wallace, H (2021) *Grasses: a guide to identification using vegetative characters.* Field Studies Council.

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Annex A

Figures and Images

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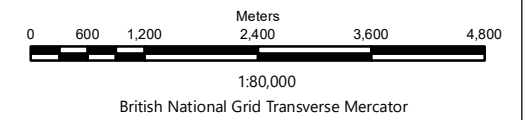
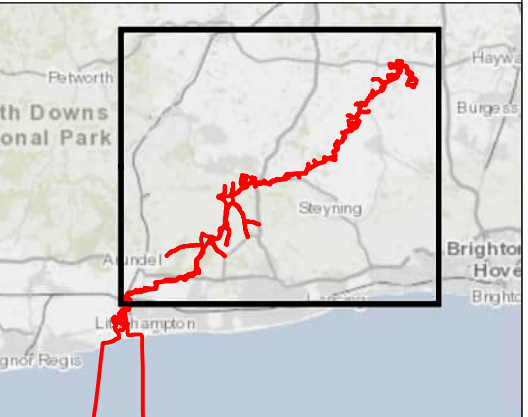


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Ordnance Survey 0100031673

Key

- Proposed DCO Order Limits
- Survey area



Rampion Extension Development



Rampion 2 Offshore Wind Farm

Figure 22.4.1 National Vegetation Classification Survey Plots

National Vegetation Classification report

| | |
|----------------------------|----------|
| System Identifier: | Version: |
| 42285-WSP-ES-ON-FG-OO-7603 | 1.0 |

| | | | | |
|----------|-----------|-----------|-------------|---------|
| Company: | Drawn By: | Chk/Prvd: | Drawn Date: | Status: |
| WSP | HADJE | SUTET | 21/06/2023 | Final |

Table A1 Images referred to in Appendix 22.4.

| Image (site) | |
|-------------------------------|--|
| 1 (Angmering Park) |  |
| 2 (Calcot Wood) |  |

Image (site)

**3
(Crossbush -
woodland)**



**4
(Crossbush -
Scrub)**



Image (site)

5 (Grassland at Wineham Lane)



6 (Poling Copse)



Image (site)

**7 (Spofforth
HLS: north
and south)**



**8 (Sullington
Hill LWS)**



Image (site)

9 (Sullington Hill LWS - scrub)



10 (Sullington Hill LWS)



Image (site)

11 (Talbot & Baker I)



12 (Talbot & Baker II)



Image (site)

**13
(Warningca
mp Hill)**



**14
(Woodland
at Wineham
Lane)**



Image (site)

**15
(Workhouse
Copse)**



**16
(Warningca
mp Hill Q2)**



Image (site)

**17
(Warningca
mp Hill tree-
line)**



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Annex B

Full survey details

Full survey details of the National Vegetation Classification (NVC) surveys are shown below in **Table B1**.

Table B1 Full survey details of surveys undertaken

| Date | Survey location | Survey type | Additional information and constraints |
|---------------|------------------|---------------|---|
| 15 April 2021 | Crossbush | Woodland NVC | Canopy not surveyed; survey focused on ground / field layer |
| 15 April 2021 | Wineham Lane | Woodland NVC | Canopy not surveyed; survey focused on ground / field layer. (Quadrats 3-5) |
| 16 April 2021 | Wineham Lane | Woodland NVC | Canopy not surveyed; survey focused on ground / field layer (Quadrats 1-2) |
| 16 April 2021 | Workhouse Copse | Woodland NVC | Canopy not surveyed; survey focused on ground / field layer |
| 24 May 2021 | Crossbush | Woodland NVC | |
| 24 May 2021 | Wineham Lane | Woodland NVC | |
| 24 May 2021 | Workhouse Copse | Woodland NVC | |
| 25 May 2021 | Warningcamp Hill | Grassland NVC | |
| 26 May 2021 | Sullington Hill | Grassland NVC | |
| 02 June 2021 | Warningcamp Hill | Grassland NVC | |
| 03 June 2021 | Sullington Hill | Grassland NVC | |
| 12 April 2022 | Calcot Wood | Woodland NVC | |
| 12 April 2022 | Poling Copse | Woodland NVC | |
| 14 June 2022 | Calcot Wood | Woodland NVC | |

| Date | Survey location | Survey type | Additional information and constraints |
|---------------------|---------------------------------|--------------------|---|
| 14 June 2022 | Talbot & Baker I | Grassland NVC | |
| 14 June 2022 | Talbot & Baker II | Grassland NVC | |
| 14 June 2022 | Grassland at Wineham Lane | Grassland NVC | Very recent cutting made survey sub-optimal |
| 15 June 2022 | Poling Copse | Woodland NVC | |
| 15 June 2022 | Spofforth HLS (north and south) | Grassland NVC | |
| 15 June 2022 | Angmering Park | Grassland NVC | |

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Annex C

Scientific species names

Table C1 below lists all species mentioned within this Appendix, note some species mentioned below were not recorded during surveys.

Table C1 Scientific name of species mentioned in this Appendix

| English name | Scientific name |
|------------------------------|----------------------------------|
| Agrimony | <i>Agrimonia eupatoria</i> |
| Annual meadow grass | <i>Poa annua</i> |
| Ash | <i>Fraxinus excelsior</i> |
| Barren strawberry | <i>Potentilla sterilis</i> |
| Bastard-toadflax | <i>Thesium humifusum</i> |
| Beaked hawk's-beard | <i>Crepis vesicaria</i> |
| Beech | <i>Fagus sylvatica</i> |
| Birch | <i>Betula sp.</i> |
| Bird's foot trefoil | <i>Lotus corniculatus</i> |
| Black bryony | <i>Tamus communis</i> |
| Black medic | <i>Medicago lupulina</i> |
| Blackthorn | <i>Prunus spinosa</i> |
| Bluebell | <i>Hyacinthoides non-scripta</i> |
| Bracken | <i>Pteridium aquilinum</i> |
| Bramble | <i>Rubus fruticosus</i> agg. |
| Bristly hawkbit | <i>Leontodon hispidus</i> |
| Broad buckler-fern | <i>Dryopteris dilatata</i> |
| Broad-leaved dock | <i>Rumex obtusifolius</i> |
| Broad-leaved plantain | <i>Plantago major</i> |

| English name | Scientific name |
|----------------------------|---------------------------------|
| Broad-leaved spurge | <i>Euphorbia platyphyllos</i> |
| Bugle | <i>Ajuga reptans</i> |
| Bulbous buttercup | <i>Ranunculus bulbosus</i> |
| Greater burdock | <i>Arctium lappa</i> |
| Cherry species | <i>Prunus</i> sp. |
| Chickweed | <i>Stellaria media</i> |
| Cleavers | <i>Galium aparine</i> |
| Clematis | <i>Clematis vitalba</i> |
| Cock's foot | <i>Dactylis glomerata</i> |
| Common bent | <i>Agrostis capillaris</i> |
| Common cat's-ear | <i>Hypochaeris radicata</i> |
| Common chickweed | <i>Stellaria media</i> |
| Common dog-violet | <i>Viola riviniana</i> |
| Common feather moss | <i>Kindbergia praelonga</i> |
| Common hogweed | <i>Heracleum sphondylium</i> |
| Common knapweed | <i>Centaurea nigra</i> |
| Common milkwort | <i>Polygala vulgaris</i> |
| Common mouse-ear | <i>Cerastium fontanum</i> |
| Common nettle | <i>Urtica dioica</i> |
| Common ragwort | <i>Senecio jacobaea</i> |
| Common rock-rose | <i>Helianthemum nummularium</i> |
| Common sedge | <i>Carex nigra</i> |
| Cowslip | <i>Primula veris</i> |
| Crack willow | <i>Salix fragilis</i> |
| Creeping bent | <i>Agrostis stolonifera</i> |

| English name | Scientific name |
|---------------------------------|---------------------------------|
| Creeping buttercup | <i>Ranunculus repens</i> |
| Creeping cinquefoil | <i>Potentilla reptans</i> |
| Creeping thistle | <i>Cirsium arvense</i> |
| Crested dog's-tail | <i>Cynosurus cristatus</i> |
| Crested hair-grass | <i>Koeleria macrantha</i> |
| Crisped dock | <i>Rumex obtusifolius</i> |
| Crosswort | <i>Cruciata laevipes</i> |
| Curled dock | <i>Rumex crispus</i> |
| Cut-leaved crane's-bill | <i>Geranium dissectum</i> |
| Cut-leaved geranium | <i>Geranium dissectum</i> |
| Daisy | <i>Bellis perennis</i> |
| Dandelion | <i>Taraxacum</i> agg. |
| Dog mercury | <i>Mercurialis perennis</i> |
| Dog rose | <i>Rosa canina</i> agg. |
| Dog's mercury | <i>Mercurialis perennis</i> |
| Dogwood | <i>Cornus sanguinea</i> |
| Dove's-foot crane's-bill | <i>Geranium molle</i> |
| Downy oat-grass | <i>Helictotrichon pubescens</i> |
| Dwarf thistle | <i>Cirsium acaule</i> |
| Elder | <i>Sambucus nigra</i> |
| Enchanter's-nightshade | <i>Circaea lutetiana</i> |
| English elm | <i>Ulmus minor</i> |
| European larch | <i>Larix decidua</i> |
| Fairy flax | <i>Linum catharticum</i> |
| False brome | <i>Brachypodium sylvaticum</i> |

| English name | Scientific name |
|-------------------------------|--------------------------------|
| False oat-grass | <i>Arrhenatherum elatius</i> |
| False-brome | <i>Brachypodium sylvaticum</i> |
| Feather moss | <i>Kindbergia praelonga</i> |
| Field forget-me-not | <i>Myosotis arvensis</i> |
| Field madder | <i>Sherardia arvensis</i> |
| Field maple | <i>Acer campestre</i> |
| Field wood-rush | <i>Luzula campestris</i> |
| Fissidens moss species | <i>Fissidens</i> sp. |
| Fleabane | <i>Pulicaria dysenterica</i> |
| Germander speedwell | <i>Veronica chamaedrys</i> |
| Glaucous sedge | <i>Carex flacca</i> |
| Greater plantain | <i>Plantago major</i> |
| Ground ivy | <i>Glechoma hederacea</i> |
| Guelder rose | <i>Viburnum opulus</i> |
| Hairy sedge | <i>Carex hirta</i> |
| Hairy violet | <i>Viola hirta</i> |
| Hard shield-fern | <i>Polystichum aculeatum</i> |
| Hart's-tongue fern | <i>Phyllitis scolopendrium</i> |
| Hawkweed oxtongue | <i>Picris hieracioides</i> |
| Hawthorn | <i>Crataegus monogyna</i> |
| Hazel | <i>Corylus avellana</i> |
| Heath speedwell | <i>Veronica officinalis</i> |
| Heather | <i>Calluna</i> sp. |
| Hedge bedstraw | <i>Galium mollugo</i> |
| Herb Robert | <i>Geranium robertianum</i> |

| English name | Scientific name |
|-----------------------------------|----------------------------------|
| Hogweed | <i>Heracleum sphondylium</i> |
| Holly | <i>Ulex europaeus</i> |
| Honeysuckle | <i>Lonicera periclymenum</i> |
| Italian rye-grass | <i>Lolium multiflorum</i> |
| Ivy | <i>Hedera sp.</i> |
| Lady's bedstraw | <i>Galium verum</i> |
| Lesser celandine | <i>Ranunculus ficaria</i> |
| Lesser hop trefoil | <i>Trifolium dubium</i> |
| Lesser stitchwort | <i>Stellaria graminea</i> |
| Lesser trefoil | <i>Trifolium dubium</i> |
| Lords-and-ladies | <i>Arum maculatum</i> |
| Marsh foxtail | <i>Alopecurus geniculatus</i> |
| Marsh marigold | <i>Caltha palustris</i> |
| Meadow barley | <i>Hordeum secalinum</i> |
| Meadow fescue | <i>Festuca pratensis</i> |
| Meadow foxtail | <i>Alopecurus pratensis</i> |
| Meadow vetchling | <i>Lathyrus pratensis</i> |
| Mouse-ear hawkweed | <i>Hieracium pilosella group</i> |
| Neat feather-moss | <i>Pseudoscleropodium purum</i> |
| Nettle-leaved bellflower | <i>Campanula trachelium</i> |
| Parsley piert | <i>Aphanes arvensis agg.</i> |
| Pedunculate Oak | <i>Quercus robur</i> |
| Perennial rye-grass | <i>Lolium perenne</i> |
| Plagiothecium moss species | <i>Plagiothecium sp.</i> |
| Prickly poppy | <i>Argemone mexicana</i> |

| English name | Scientific name |
|-----------------------------------|-----------------------------------|
| Prickly sow-thistle | <i>Sonchus asper</i> |
| Primrose | <i>Primula vulgaris</i> |
| Pyramidal orchid | <i>Anacamptis pyramidalis</i> |
| Quaking-grass | <i>Briza media</i> |
| Ragwort | <i>Senecio jacobaea</i> |
| Red bartsia | <i>Odontites vernus</i> |
| Red campion | <i>Silene dioica</i> |
| Red clover | <i>Trifolium pratense</i> |
| Red fescue | <i>Festuca rubra</i> agg. |
| Ribwort plantain | <i>Plantago lanceolata</i> |
| Rosebay willowherb | <i>Chamerion angustifolium</i> |
| Rough goose neck moss | <i>Rhytidiadelphus triquetrus</i> |
| Rough hawk's-beard | <i>Crepis biennis</i> |
| Rough meadow-grass | <i>Poa trivialis</i> |
| Rough-stalked meadow-grass | <i>Potentilla anserina</i> |
| Salad burnet | <i>Sanguisorba minor</i> |
| Scaly male-fern | <i>Dryopteris affinis</i> |
| Scarlet pimpernell | <i>Anagallis arvensis</i> |
| Scots pine | <i>Pinus sylvestris</i> |
| Self-heal | <i>Prunella vulgaris</i> |
| Sessile oak | <i>Quercus petraea</i> |
| Sheep's fescue | <i>Festuca ovina</i> agg. |
| Sheep's sorrel | <i>Rumex acetosella</i> |
| Silver birch | <i>Betula pendula</i> |
| Silverweed | <i>Potentilla anserine</i> |

| English name | Scientific name |
|--------------------------|-----------------------------------|
| Slender thistle | <i>Carduus tenuiflorus</i> |
| Smaller cat's tail | <i>Phleum bertolonii</i> |
| Smaller cat's-tail | <i>Phleum bertolonii</i> |
| Small-flowered buttercup | <i>Ranunculus parviflorus</i> |
| Small-leaved lime | <i>Tilia cordata</i> |
| Smooth bedstraw | <i>Cruciata laevipes</i> |
| Smooth hawk's-beard | <i>Crepis capillaris</i> |
| Smooth meadow grass | <i>Poa pratensis sens.lat.</i> |
| Soft brome | <i>Bromus hordeaceus</i> |
| Spear thistle | <i>Cirsium vulgare</i> |
| Sphagnum moss species | <i>Sphagnum sp.</i> |
| Spindle | <i>Euonymus europaeus</i> |
| Spring sedge | <i>Carex caryophylla</i> |
| Springy turf-moss | <i>Rhytidiadelphus squarrosus</i> |
| Sterile brome | <i>Anisantha sterilis</i> |
| Stiff saltmarsh-grass | <i>Puccinellia maritima</i> |
| Stinging nettle | <i>Urtica dioica</i> |
| Strawberry clover | <i>Trifolium fragiferum</i> |
| Swan's neck thyme-moss | <i>Mnium hornum</i> |
| Sweet chestnut | <i>Castanea sativa</i> |
| Sweet vernal-grass | <i>Anthoxanthum odoratum</i> |
| Sycamore | <i>Acer pseudoplatanus</i> |
| Thyme-leaved sandwort | <i>Arenaria serpyllifolia</i> |
| Timothy | <i>Phleum pratense sens.lat.</i> |
| Toadflax | <i>Linaria vulgaris</i> |

| English name | Scientific name |
|--------------------------|------------------------------|
| Tor-grass | <i>Brachypodium pinnatum</i> |
| Tufted hairgrass | <i>Deschampsia cespitosa</i> |
| Upright brome | <i>Bromopsis erecta</i> |
| Water mint | <i>Mentha aquatica</i> |
| Wavy-hair grass | <i>Deschampsia flexuosa</i> |
| Wayfaring tree | <i>Viburnum lantana</i> |
| White clover | <i>Trifolium repens</i> |
| White dead-nettle | <i>Lamium album</i> |
| Wild cherry | <i>Prunus avium</i> |
| Wild garlic | <i>Allium ursinum</i> |
| Wild privet | <i>Ligustrum vulgare</i> |
| Wild service tree | <i>Sorbus torminalis</i> |
| Wild thyme | <i>Thymus serpyllum</i> |
| Wood anemone | <i>Anemone nemorosa</i> |
| Wood avens | <i>Geum urbanum</i> |
| Wood dock | <i>Rumex sanguineus</i> |
| Wood meadow-grass | <i>Poa nemoralis</i> |
| Wood sedge | <i>Carex sylvatica</i> |
| Wood speedwell | <i>Veronica montana</i> |
| Yarrow | <i>Achillea millefolium</i> |
| Yellow archangel | <i>Lamium galeobdolon</i> |
| Yellow oat-grass | <i>Trisetum flavescens</i> |
| Yorkshire fog | <i>Holcus lanatus</i> |

Annex D

Floristic tables

The following tables provide information on species recorded along with their DOMIN score and frequency. Q1-Q5 refers to quadrats sampled. See **Figures 2.2-2.13, Annex A** for quadrat locations.

Table D1 Angmering Park

| Species | Q1 | Q2 | Q3 | Q4 | Q5 | Frequency |
|----------------------------|----|----|----|----|----|-----------|
| Bulbous buttercup | 2 | 0 | 0 | 0 | 2 | II |
| Common sedge | 2 | 3 | 1 | 1 | 1 | V |
| Creeping buttercup | 0 | 1 | 0 | 1 | 0 | II |
| Hairy sedge | 6 | 5 | 5 | 5 | 5 | V |
| Marsh foxtail | 1 | 0 | 0 | 1 | 0 | II |
| Perennial Rye | 5 | 5 | 5 | 5 | 5 | V |
| Rough-stalked meadow-grass | 2 | 0 | 1 | 0 | 1 | III |
| Silverweed | 4 | 4 | 4 | 4 | 4 | V |
| Water mint | 2 | 2 | 0 | 2 | 2 | IV |
| Yorkshire fog | 9 | 9 | 9 | 9 | 9 | V |

Table D2 Calcot Wood

| Species | April 2022 | | | | | June 2022 | | | | | Combined * | | | | | Frequency |
|----------------------------------|------------|----|----|----|----|-----------|----|----|----|----|------------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Layer: Canopy | | | | | | | | | | | | | | | | |
| Scots pine | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | V |
| Sessile oak | 4 | 4 | 5 | 4 | | 4 | 4 | 5 | 4 | | 4 | 4 | 5 | 4 | | IV |
| Standing deadwood | 1 | | | | | 1 | | | | | 1 | | | | | I |
| Sitka spruce | | | | | 5 | | | | | 5 | | | | | 5 | I |
| Silver birch | | 4 | 2 | 1 | | | 4 | 2 | 1 | | | 4 | 2 | 1 | | III |
| Layer: Understory | | | | | | | | | | | | | | | | |
| Layer: Field & Ground | | | | | | | | | | | | | | | | |
| Annual meadow grass | | | | 1 | | | | | | | | | | 1 | | I |
| Bluebell | 1 | 1 | 6 | 1 | 2 | 4 | 1 | 4 | | | 4 | 1 | 6 | 1 | 2 | V |
| Bracken | | 1 | 2 | | 4 | | 4 | | | 6 | | 4 | 2 | | 6 | III |
| Bramble | 3 | 5 | 7 | 5 | | 4 | 7 | | 5 | 7 | 4 | 7 | 7 | 5 | 7 | V |

| Species | April 2022 | | | | | June 2022 | | | | | Combined * | | | | | Frequency | | |
|---------------------------|------------|---|---|---|---|-----------|---|---|---|---|------------|---|---|---|---|-----------|----|----|
| Brown bent | 1 | | | | | | | | | | 1 | | | | | I | | |
| Bryophyte cover | 4 | 8 | 4 | 4 | 2 | 4 | 8 | 4 | 4 | 2 | 4 | 8 | 4 | 4 | 2 | V | | |
| Common bent | 1 | | | | | 5 | | | | | 1 | | | | | 5 | II | |
| Common chickweed | | | | | | | | | | | 3 | | | | | 3 | I | |
| Common dog violet | | | | | | 2 | | | | | 2 | | | | | 2 | I | |
| Common ragwort | | | | | | 1 | | | | | | | | | | 1 | I | |
| Creeping bent | 3 | 4 | | | | | 3 | 4 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | III | | |
| Creeping soft grass | | | | | | 2 | | | | | | | | | | 2 | I | |
| Foxglove | 5 | 4 | | | | 7 | 4 | | | | 7 | 4 | | | | II | | |
| Heath speedwell | 2 | | | | | | | | | | 2 | | | | | I | | |
| Holly (sapling) | | | | | | 1 | | | | | 1 | | | | | I | | |
| Honeysuckle | | 6 | 4 | 4 | 5 | 5 | | | | 4 | | 6 | 4 | 4 | 5 | IV | | |
| Marsh bedstraw | | | | | | | | | | | 2 | | | | | 2 | I | |
| Marsh willowherb | | | | | | | | | | | 1 | | | | | 1 | I | |
| Perforate St. John's wort | | | | | | 2 | | | | | 2 | | | | | 2 | 2 | II |
| Red fescue | | | | | | | | | | | 4 | | | | | 4 | I | |

| Species | April 2022 | | | | | June 2022 | | | | | Combined * | | | | | Frequency |
|--------------------------------|------------|----|----|----|----|-----------|----|----|----|----|------------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Rough meadow grass | | | | | | 2 | | 2 | | | 2 | | 2 | | | II |
| Slender St. John's wort | 1 | | | 1 | | | | | | | 1 | | | 1 | | II |
| Soft rush | 1 | | | 2 | 3 | | | | | | 1 | | | 2 | 3 | III |
| Spring sedge | | | | | 3 | | | | | | | | | | 3 | I |
| Sweet vernal | | | | | | 3 | | 1 | 4 | | 3 | | 1 | 4 | | III |
| Tufted hair grass | | | | | 2 | | | | | 3 | | | | | 3 | I |
| Velvet bent | | | 1 | 2 | 2 | | | | | | | | 1 | 2 | 2 | III |
| Wood sage | 4 | 4 | 1 | 2 | | | 4 | | 3 | | 4 | 4 | 1 | 3 | | IV |
| Yorkshire fog | 3 | | | 4 | 4 | 3 | | | 4 | 4 | 3 | | | 4 | 4 | III |
| Dead leaves/bare ground | 8 | 6 | 5 | 4 | 4 | 8 | 5 | 6 | 7 | 4 | | | | | | V |
| Standing deadwood | 1 | | | | | 1 | | | | | 1 | | | | | I |

Table D3 Crossbush

| Species | April 2021 | | | | | May 2021 | | | | | Combined * | | | | | Frequency |
|----------------------|------------|----|----|----|----|----------|----|----|----|----|------------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Layer: Canopy | | | | | | | | | | | | | | | | |

| Species | April 2021 | | | | | May 2021 | | | | | Combined * | | | | | Frequency |
|----------------------------------|------------|----|----|----|----|----------|----|----|----|----|------------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Ash | | | | | | 1 | 6 | 7 | 7 | 5 | 1 | 6 | 7 | 7 | 5 | V |
| Beech | | | | | | 8 | 8 | 7 | 6 | 8 | 8 | 8 | 7 | 6 | 8 | V |
| European larch | | | | | | | | 1 | 4 | | | | 1 | 4 | | II |
| Field maple | | | | | | | | 4 | 3 | | | | 4 | 3 | | II |
| Norway maple | | | | | | 1 | 1 | | 1 | 4 | 1 | 1 | | 1 | 4 | IV |
| Pedunculate oak | | | | | | 8 | 4 | 6 | 6 | 5 | 8 | 4 | 6 | 6 | 5 | V |
| Layer: Understory | | | | | | | | | | | | | | | | |
| Blackthorn | | | | | | | | | | 1 | | | | | 1 | I |
| Elder | | | | | | | | | | 3 | | | | | 3 | I |
| Hawthorn | | | | | 1 | | | | | 3 | | | | | 3 | I |
| Hazel | | | | | 1 | | | | | 1 | | | | | 1 | I |
| Holly | 3 | 1 | 1 | 4 | 5 | 3 | 1 | 1 | 4 | 5 | 3 | 1 | 1 | 4 | 5 | V |
| Ivy | 3 | 1 | 3 | | | 3 | 3 | | | | 3 | 3 | 3 | | | III |
| Wild service tree | | | | 1 | | | | | 1 | | | | | 1 | | I |
| Layer: Field & Ground | | | | | | | | | | | | | | | | |

| Species | April 2021 | | | | | May 2021 | | | | | Combined * | | | | | Frequency |
|-------------------|------------|----|----|----|----|----------|----|----|----|----|------------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Ash (sapling) | | | | | | 3 | 1 | | | | 3 | 1 | | | | II |
| Bluebell | 1 | 9 | 9 | 9 | 8 | 8 | 8 | 9 | 9 | 5 | 1 | 9 | 9 | 9 | 8 | V |
| Bracken | | | 3 | | | | | | | | | | 3 | | | I |
| Bramble | 1 | | 3 | 1 | | | 5 | 7 | | | 1 | 5 | 7 | 1 | | IV |
| Cleavers | | 3 | 2 | 2 | 2 | 1 | 7 | 3 | 3 | 3 | 1 | 7 | 3 | 3 | 3 | V |
| Common dog violet | | | | | 2 | | | | | | | | | | 2 | I |
| Common sorrel | | | | | | | | | | 3 | | | | | 3 | I |
| Curled dock | | | | | 1 | | 1 | | | 5 | | 1 | | | 5 | II |
| | | | | | | | | | | | | | | | | |
| Dog's mercury | | | | 1 | 1 | | | | | 7 | | | | 1 | 7 | II |
| Feather moss | | 3 | | | | | | | 3 | | | 3 | | 3 | | II |
| Gooseberry | | | | | | 3 | | | | | 3 | | | | | I |
| Lesser celandine | | 3 | | | 1 | | | | | | | 3 | | | 1 | II |
| Lords-and-ladies | | | | 1 | | | | | | | | | | 1 | | I |
| Male fern | | | | | | | 4 | 7 | | | | 4 | 7 | | | II |

| Species | April 2021 | | | | | May 2021 | | | | | Combined * | | | | | Frequency |
|-------------------------|------------|----|----|----|----|----------|----|----|----|----|------------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Primrose | | | | | 2 | | | | | 2 | | | | | 2 | I |
| Rough meadow-grass | | | | | | | 3 | | | 4 | | 3 | | | 4 | II |
| Common nettle | | | | | | | | | | 2 | | | | | 2 | I |
| Wild garlic | | | | 2 | | | | | | | | | | 2 | | I |
| Wood anemone | | 1 | 1 | | | | | | | | | 1 | 1 | | | II |
| Wood meadow-grass | | | | | 3 | | | | | | | | | | 3 | I |
| Dead leaves/bare ground | 3 | | 3 | 4 | | | | | | | 3 | | 3 | 4 | | III |

Table D4 Grassland at Wineham Lane

| Species | June 2022 | Q1* | Frequency** |
|--------------------|-----------|-----|-------------|
| Greater burdock | | 1 | 5 |
| Cock's-foot | | 3 | 5 |
| Creeping buttercup | | 1 | 2 |
| Crested dog's-tail | | 7 | 2 |

| Species | June 2022 | Q1* | Frequency** |
|----------------------------|-----------|-----|-------------|
| False brome | | 3 | 1 |
| False oat-grass | | 1 | 1 |
| Red clover | | 1 | 1 |
| Rough stalked meadow grass | | 1 | 2 |
| Spear thistle | | 1 | 1 |
| Sterile brome | | 2 | 1 |
| Timothy | | 1 | 1 |
| Wood speedwell | | 1 | 1 |
| Yorkshire fog | | 7 | 1 |

*Only one quadrat had data that was appropriate for analysis due to recent cutting

**To classify individual quadrats cover values were converted into constancy using relationship published by Dring (2000) as follows: I if cover <2%, II cover 2-5%, III cover 5-10%, IV cover 10-20%, V cover >=20%.

Table D5 Poling Copse

| Species | April 2022 | | | | | May 2022 | | | | | Combined * | | | | | Frequency |
|----------------------------------|------------|----|----|----|----|----------|----|----|----|----|------------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Layer: Canopy | | | | | | | | | | | | | | | | |
| Hazel | 9 | 9 | 9 | 9 | 7 | 9 | 9 | 9 | 9 | 7 | 9 | 9 | 9 | 9 | 7 | V |
| Sessile oak | 7 | 6 | 6 | 8 | 7 | 7 | 6 | 6 | 8 | 7 | 7 | 6 | 6 | 8 | 7 | V |
| Holly | 4 | 5 | | | | 4 | 5 | | | | 4 | 5 | | | | II |
| Silver birch | 2 | | | | | 2 | | | | | 2 | | | | | I |
| Sycamore | 1 | 7 | 6 | 4 | 4 | 1 | 7 | 6 | 4 | 4 | 1 | 7 | 6 | 4 | 4 | V |
| Honeysuckle | | 1 | | 5 | | 3 | | | 4 | | 3 | 1 | | 5 | | III |
| Layer: Understory | | | | | | | | | | | | | | | | |
| Honeysuckle | 3 | | | 4 | | 1 | | 2 | | | 3 | | 2 | 4 | | III |
| Sycamore | 2 | | 4 | | | 2 | | 4 | | | 2 | | 4 | | | II |
| Bramble | 2 | | 2 | 4 | 2 | 2 | | 2 | 4 | 2 | 2 | | 2 | 4 | 2 | IV |
| Silver birch | | | 1 | | | | | 1 | | | | | 1 | | | I |
| Layer: Field & Ground | | | | | | | | | | | | | | | | |
| Ash sapling | 2 | 2 | 2 | | | | 3 | | | 1 | 2 | 3 | 2 | | 1 | IV |

| Species | April 2022 | | | | | May 2022 | | | | | Combined * | | | | | Frequency |
|-------------------|------------|----|----|----|----|----------|----|----|----|----|------------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Black bryony | | 1 | | | | | | | | | | 1 | | | | I |
| Bluebell | 10 | 9 | 1 | 9 | 2 | 3 | 4 | | | | 10 | 9 | 1 | 9 | 2 | V |
| Bramble | | | | | | | 3 | 1 | 2 | 1 | | 3 | 1 | 2 | 1 | IV |
| Broad-leaved dock | | | | | 2 | | | | | | | | | | 2 | I |
| Cleavers | | | | | 6 | | | | | 3 | | | | | 6 | I |
| Common nettle | | | | | 2 | | | 1 | | 4 | | | 1 | | 4 | II |
| Dog mercury | | | | | 1 | | | | | | | | | | 1 | I |
| False brome | | | | 8 | 3 | | | | | 3 | | | | 8 | 3 | II |
| Ground ivy | | | | | 2 | | | | | 5 | | | | | 5 | I |
| Holly sapling | | | 1 | | | 1 | | | | | 1 | | 1 | | | II |
| Ivy | | | 1 | 4 | 5 | | | | 2 | 9 | | | 1 | 4 | 9 | III |
| Lesser celandine | | | | 1 | 9 | | | | | | | | | 1 | 9 | II |
| Lords-and-ladies | | | | | 3 | | | | | | | | | | 2 | I |
| Primrose | | | | | 2 | | | | | 1 | | | | | 2 | I |
| Scaly male fern | | | | 1 | | | | | | | | | | 1 | | I |

| Species | April 2022 | | | | | May 2022 | | | | | Combined * | | | | | Frequency |
|-------------------------|------------|----|----|----|----|----------|----|----|----|----|------------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Wood dock | | | | | 2 | | | | | 3 | | | | | 3 | I |
| Wood sedge | | | | | 3 | | 1 | | | | | 1 | | | 3 | I |
| Bryophytes | 1 | | 3 | | | 1 | | 3 | | | 1 | | 3 | | | II |
| Dead leaves/bare ground | 2 | 4 | 9 | 5 | | 2 | 4 | 9 | 5 | | 2 | 4 | 9 | 5 | | IV |

Table D6 Spofforth North

| Species | June 2022 | | | | | Frequency |
|--------------------------|-----------|----|----|----|-----|-----------|
| | Q6 | Q7 | Q8 | Q9 | Q10 | |
| Bird's-foot trefoil | | | 1 | | | I |
| Bulbous buttercup | | 3 | | 1 | 3 | III |
| Chickweed | 3 | 3 | 3 | 3 | 3 | V |
| Cock's-foot | 6 | 5 | 6 | 5 | 5 | V |
| Creeping bent | | 5 | 5 | 5 | 3 | IV |
| Creeping buttercup | 2 | 3 | 2 | 1 | 3 | V |
| Creeping thistle | 2 | | 1 | | | II |
| Crosswort | | | 2 | | | I |
| Cut-leaved geranium | | 1 | | | | I |
| Daisy | | 3 | 2 | 2 | 3 | IV |
| Dandelion | 4 | 3 | 3 | 2 | 2 | V |
| Dove's-foot crane's-bill | 2 | | | 4 | 2 | III |
| Fairy flax | 2 | 2 | 2 | | 1 | IV |
| Field madder | 2 | 2 | | | 1 | III |
| Germander speedwell | 2 | 3 | 2 | 1 | 3 | V |
| Lesser hop trefoil | | 3 | | | 3 | II |
| Ragwort | 1 | 1 | | 1 | | III |
| Red clover | | | 4 | | | I |
| Red fescue | 7 | 7 | 7 | 7 | 7 | V |
| Ribwort plantain | | | 1 | | 1 | II |
| Scarlet pimpernell | | | 1 | | | I |
| Smaller cat's-tail | 1 | | 3 | 1 | 2 | IV |
| Smooth hawk's-beard | | 1 | 3 | 1 | 2 | IV |

| Species | June 2022 | | | | | Frequency |
|---------------|-----------|----|----|----|-----|-----------|
| | Q6 | Q7 | Q8 | Q9 | Q10 | |
| Soft brome | 5 | 4 | 6 | 3 | 4 | V |
| Spear thistle | | | | | 1 | I |
| White clover | 4 | 3 | 4 | 5 | 2 | V |
| Yarrow | | 3 | | | | I |
| Yorkshire fog | 5 | 3 | 1 | | | III |
| Bare ground | 0 | 10 | <5 | <5 | <5 | |

Table D7 Spofforth South

| Species | June 2022 | | | | | Frequency |
|---------------------|-----------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Annual meadow-grass | | 2 | 1 | | | II |
| Bird's-foot trefoil | | 4 | | | | I |
| Black medick | 2 | 3 | 3 | | | III |
| Bulbous buttercup | | | 3 | 2 | 3 | III |
| Chickweed | | 3 | 3 | 2 | 2 | IV |
| Cock's-foot | 6 | 6 | 7 | 6 | 6 | V |
| Common cat's-ear | | | 1 | | | I |
| Common mouse-ear | | 2 | | | | I |
| Creeping bent | 5 | | | 2 | 4 | III |
| Creeping buttercup | 3 | 4 | | 3 | 3 | IV |
| Creeping thistle | 2 | 1 | | | | II |
| Cut-leaved geranium | 3 | 3 | 2 | 2 | 2 | V |
| Daisy | 1 | 3 | 4 | 4 | 4 | IV |
| Dandelion | 1 | 1 | 1 | 1 | 4 | V |

| Species | June 2022 | | | | | Frequency |
|--------------------------|-----------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Dove's-foot crane's-bill | 2 | 3 | | 2 | 2 | IV |
| Fairy flax | | | 2 | | | I |
| Field madder | 3 | 3 | 1 | | 1 | IV |
| Germander speedwell | 3 | 2 | 2 | 3 | 2 | V |
| Ground ivy | | | | 2 | | I |
| Lesser hop trefoil | | | 4 | | | I |
| Lesser stitchwort | 1 | 1 | 1 | | | III |
| Perennial rye-grass | 1 | | | | | I |
| Ragwort | | | | | 1 | I |
| Red bartsia | 2 | 3 | | 3 | | III |
| Red clover | | 3 | | 3 | 1 | III |
| Red fescue | | 7 | 7 | 7 | 6 | IV |
| Ribwort plantain | | | 1 | 1 | | II |
| Rough hawk's-beard | 1 | 1 | 1 | | | III |
| Self-heal | | | 1 | | | I |
| Smaller cat's-tail | 4 | 5 | 4 | 5 | | IV |
| Smooth hawk's-beard | | 2 | 2 | 2 | 2 | IV |
| Soft brome | 6 | 4 | 4 | 6 | 7 | V |
| Spear thistle | 2 | 1 | 1 | | 1 | V |
| Toadflax | | | | 1 | | I |
| White clover | 4 | 4 | 3 | 4 | 5 | V |
| Yarrow | 3 | 2 | 2 | | | III |
| Bare ground | 3 | 0 | 0 | 5 | 0 | |

Table D8 Sullington Hill LWS

| Species | May 2021 | | | | | June 2021 | | | | | Constancy |
|---------------------|----------|----|----|----|----|-----------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Bird's foot trefoil | 2 | 3 | | 3 | | 3 | 2 | 2 | 1 | 3 | IV |
| Bristly hawkbit | | | | | | 1 | 1 | 2 | | | II |
| Bulbous buttercup | 3 | 4 | 4 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | V |
| Cock's-foot | 1 | 3 | 3 | 3 | | 4 | 4 | 5 | | 3 | IV |
| Common bent | | | | | | | 2 | 3 | | | I |
| Common chickweed | | | | | | 1 | 2 | | | | I |
| Common knapweed | | 3 | 4 | | 2 | | 2 | 1 | | 4 | III |
| Common milkwort | 3 | 3 | | | 1 | 1 | | 3 | 2 | | III |
| Common ragwort | 1 | 1 | | | | 2 | 2 | 1 | | | III |
| Common rock-rose | | | | | | | | | 5 | | I |
| Cowslip | | | | | 1 | | | 2 | | | I |
| Daisy | 1 | 1 | 2 | | 3 | | 4 | | 1 | | III |
| Dandelion | 1 | | 1 | | 1 | 2 | 1 | 2 | 1 | 2 | IV |

| Species | May 2021 | | | | | June 2021 | | | | | Constancy |
|---------------------|----------|----|----|----|----|-----------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Dwarf thistle | | | | | | | | | 1 | 1 | I |
| Field wood-rush | 3 | 2 | | 2 | | 2 | 3 | 1 | | 3 | IV |
| Germander Speedwell | 2 | 1 | 3 | 1 | 1 | 2 | 3 | 4 | 2 | 3 | V |
| Glaucous sedge | 1 | 3 | 3 | 5 | 3 | 2 | | 3 | | 3 | IV |
| Hairy violet | | | 2 | | 1 | 1 | 1 | 1 | 2 | | III |
| Hawkweed oxtongue | 3 | 3 | 3 | 3 | 1 | | 1 | | | | III |
| Heath speedwell | | | | | | 1 | 1 | | | | I |
| Hedge bedstraw | 1 | 2 | 1 | 4 | 1 | 1 | 2 | 3 | | 2 | V |
| Lady's bedstraw | | | | | | 3 | 3 | 3 | 1 | 3 | III |
| Lesser trefoil | | | | | | | 3 | 2 | | | I |
| Meadow fescue | | | | | | | | | 5 | | I |
| Mouse-ear hawkweed | 1 | 1 | 5 | 5 | 4 | 4 | 4 | | 5 | | IV |
| Parsley piert | | | | | | | 3 | | | | I |
| Perennial rye-grass | | | | 1 | | | | | | | I |
| Ribwort plantain | 1 | 2 | | 4 | 2 | 1 | 2 | 1 | 2 | 2 | V |

| Species | May 2021 | | | | | June 2021 | | | | | Constancy |
|--------------------------|----------|----|----|----|----|-----------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Greater plantain | | | | | | | | 1 | 3 | 1 | II |
| Quaking-grass | | | | | | 4 | | | 3 | | I |
| Red clover | 2 | 2 | | 3 | | 3 | 2 | 2 | | 2 | IV |
| Salad burnet | 4 | 5 | 5 | 5 | 6 | 4 | 4 | 4 | 5 | 4 | V |
| Selfheal | 2 | | | | | | | | | 1 | I |
| Sheep's fescue | 7 | 7 | 5 | 7 | 7 | 7 | 8 | 8 | 7 | 8 | V |
| Sheep's sorrel | | | | | | 3 | 3 | | | | I |
| Small-flowered buttercup | | | | | | | 1 | 1 | | | I |
| Smaller cat's tail | | | | | | 3 | 3 | | | 3 | II |
| Smooth bedstraw | | 2 | | | | | | | | | I |
| Smooth hawksbeard | | | | | | | | 1 | 1 | | I |
| Smooth meadow grass | | | 2 | | 2 | | | | | | I |
| Spear thistle | 3 | 4 | 3 | 3 | 4 | 1 | 2 | 2 | 3 | 2 | V |
| Spring sedge | | | | 2 | | | 5 | | | | I |
| Sweet vernal-grass | | 3 | | | | | | 1 | | 3 | II |

| Species | May 2021 | | | | | June 2021 | | | | | Constancy |
|-----------------------|----------|----|----|----|----|-----------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Thyme-leaved sandwort | | | | | | 2 | | 3 | 3 | | II |
| Upright brome | 6 | 6 | | | 7 | 7 | 7 | | 7 | | III |
| Wild thyme | 3 | 3 | | | 4 | 3 | | | | | II |
| Yarrow | 3 | 3 | | 3 | 3 | 2 | 2 | 3 | 2 | 2 | V |
| Yorkshire fog | | | | 3 | | 3 | | 3 | | 3 | II |
| Bare ground | | 4 | | 1 | 1 | | | | | 2 | II |

Table D9 Talbot & Baker I

| Species | June 2022 | | | | | Frequency |
|--------------------|-----------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Broad-leaved dock | | | 1 | | | I |
| Creeping buttercup | | 1 | | | 1 | II |
| Italian rye-grass | 10 | 10 | 10 | 10 | 10 | V |
| Yorkshire fog | 1 | | | 1 | | II |
| Bare ground | 0 | 0 | 0 | 0 | 0 | |

Table D10 Talbot & Baker II

| Species | June 2022 | | | | | Frequency |
|----------------------------|-----------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Annual meadow-grass | 2 | | | | | I |
| Broad-leaved dock | 2 | 4 | | 1 | 2 | IV |
| Cock's-foot | | 5 | 8 | 4 | 4 | IV |
| Common hogweed | | | 1 | 1 | | II |
| Common Nettle | 1 | | | | 1 | II |
| False oat-grass | | 3 | 1 | 8 | | III |
| Lesser stitchwort | | | 3 | | | I |
| Marsh foxtail | | 1 | | | | I |
| Meadow barley | 7 | 4 | 4 | | 7 | IV |
| Meadow foxtail | 6 | 7 | 7 | 5 | 6 | V |
| Rough-stalked meadow-grass | 2 | | | | | I |
| Tufted hairgrass | 3 | | | 3 | | II |
| Yorkshire fog | 7 | 7 | 7 | | 5 | IV |
| Bare ground | 0 | 0 | 0 | 0 | 0 | |

Table D11 Warningcamp Hill

| Species | | | | | | | | | | | Frequency |
|-------------------------|----------|----|----|----|----|-----------|----|----|----|----|-----------|
| | May 2021 | | | | | June 2021 | | | | | |
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Agrimony | | | 1 | | | 1 | | | | | I |
| Barren strawberry | | | 3 | | | | | 3 | 3 | | II |
| Beaked hawk's-beard | | 2 | | 2 | | | | | | | I |
| Birch sapling | | | | | | | 1 | | | | I |
| Bird's foot trefoil | 3 | | 3 | 3 | 4 | 3 | 3 | 3 | 4 | 3 | V |
| Black medic | 3 | | | | | | | | 2 | 3 | II |
| Bristly hawkbit | 4 | 2 | | | | 4 | | | | | II |
| Bulbous buttercup | 3 | 3 | 3 | 4 | 5 | 4 | 4 | 3 | 5 | 6 | V |
| Cock's-foot | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | | V |
| Common bent | | | | 7 | 4 | | | | 7 | 4 | II |
| Common mouse-ear | | | 2 | 2 | 2 | | 2 | 2 | 1 | 2 | IV |
| Common ragwort | | 3 | 4 | 3 | 4 | 1 | 2 | 2 | 2 | 4 | V |
| Cowslip | | | | | | 1 | | | | | I |
| Creeping cinquefoil | | 2 | 2 | 4 | 3 | 2 | 3 | 3 | 3 | 2 | V |
| Crested dog's-tail | | | | | | | | | | 5 | I |
| Crested hair-grass | | 2 | | | | 4 | 4 | | | | II |
| Cut-leaved crane's bill | | | 2 | 2 | 2 | 1 | 1 | 2 | | 1 | IV |
| Dandelion | | | | | | | | 1 | 2 | 2 | II |
| False oat-grass | | 3 | | | | 4 | 2 | | | 1 | II |
| Field wood-rush | | | 3 | 4 | 3 | | | 3 | 2 | 3 | III |

| Species | | | | | | | | | | | Frequency |
|----------------------------|----------|----|----|----|----|-----------|----|----|----|----|-----------|
| | May 2021 | | | | | June 2021 | | | | | |
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Germander Speedwell | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | V |
| Glaucous sedge | | | | | | 2 | | | | | I |
| Ground ivy | 1 | 3 | 3 | 3 | | | 3 | | 3 | | III |
| Hairy violet | | | 1 | | | | | 1 | 1 | | II |
| Hedge bedstraw | | | | | | 2 | | | 3 | 3 | II |
| Lady's bedstraw | 3 | 3 | 3 | | 3 | 2 | 5 | | | 3 | IV |
| Lesser trefoil | | | | 2 | 3 | | | | 1 | 2 | II |
| Meadow fescue | 3 | 3 | 3 | 2 | | | 2 | 6 | 6 | 4 | IV |
| Neat feather-moss | 4 | 6 | | | | 5 | 7 | | | | II |
| Prickly sow-thistle | | | | | | | | 1 | | 2 | I |
| Red clover | | 3 | 3 | 3 | 3 | | | | 4 | 3 | III |
| Ribwort plantain | 4 | 3 | 3 | 3 | 4 | 3 | 2 | 4 | 2 | 3 | V |
| Salad burnet | 4 | | 2 | | 2 | 4 | | | 4 | 3 | III |
| Selfheal | 1 | | | | | 2 | 3 | | 1 | | II |
| Sheep's fescue | 8 | 8 | 7 | 8 | 5 | 7 | 8 | 6 | 6 | 5 | V |
| Smaller cat's tail | 3 | | | | | 3 | 3 | | 3 | 3 | III |
| Smooth bedstraw | 3 | | | 4 | 1 | 4 | | 1 | 5 | | III |
| Smooth hawksbeard | | | | | | | 2 | | 1 | 1 | II |
| Smooth meadow grass | 3 | | 4 | 4 | 7 | 2 | | 6 | 2 | 7 | IV |
| Soft-brome | | | | | | | | 1 | | | I |
| Spear thistle | | 2 | 4 | 2 | | | | 1 | 2 | 1 | III |
| White clover | | | | | | 2 | 2 | 3 | | | II |

| Species | Frequency | | | | | | | | | | |
|---------------|-----------|----|----|----|----|-----------|----|----|----|----|---|
| | May 2021 | | | | | June 2021 | | | | | |
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Yorkshire fog | 3 | 4 | 3 | 5 | | 4 | 4 | 4 | 5 | 5 | V |
| Bare ground | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

CONFIDENTIAL

Table D12 Woodland at Wineham Lane

| Species | April 2021 | | | | | May 2021 | | | | | Combined* | | | | | Frequency |
|--------------------------|------------|----|----|----|----|----------|----|----|----|----|-----------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Layer: canopy | | | | | | | | | | | | | | | | |
| Ash | | | | | | 3 | 6 | 5 | 5 | 5 | 3 | 6 | 5 | 5 | 5 | V |
| Cherry | | | | | | 4 | 1 | 4 | 4 | 6 | 4 | 1 | 4 | 4 | 6 | V |
| Crack willow | | | | | | | 1 | 1 | | | | 1 | 1 | | | II |
| Field maple | | | | | | 5 | 7 | 4 | 6 | 5 | 5 | 7 | 4 | 6 | 5 | V |
| Hawthorn | | | | | | 4 | 2 | | 2 | 2 | 4 | 2 | | 2 | 2 | IV |
| Sessile oak | | | | | | 8 | 7 | 4 | 6 | 5 | 8 | 7 | 4 | 6 | 5 | V |
| Silver birch | | | | | | 1 | | | | 1 | 1 | | | | 1 | II |
| Small-leaved lime | | | | | | 1 | 1 | 6 | 7 | 7 | 1 | 1 | 6 | 7 | 7 | V |
| Spindle | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | V |
| Layer: understory | | | | | | | | | | | | | | | | |
| Blackthorn | 6 | 4 | 5 | 1 | 4 | 5 | 4 | 4 | 3 | 1 | 6 | 4 | 5 | 3 | 4 | V |
| Bramble | 6 | 4 | 8 | 5 | 6 | 6 | 6 | 7 | 8 | 7 | 6 | 6 | 8 | 8 | 7 | V |

| Species | April 2021 | | | | | May 2021 | | | | | Combined* | | | | | Frequency |
|----------------------------------|------------|----|----|----|----|----------|----|----|----|----|-----------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Dog rose | | 1 | 4 | | | | 1 | 4 | 5 | 5 | | 1 | 4 | 5 | 5 | III |
| Dogwood | | | | | | 2 | 1 | | | 1 | 2 | 1 | | | 1 | III |
| Guelder rose | | | | | | | 2 | | | | | 2 | | | | I |
| Hazel | | | | | 1 | | | | | 1 | | | | | 1 | I |
| Wayfaring tree | | | | | | 1 | | | | | 1 | | | | | I |
| Wild Privet | | | | | 5 | 5 | | | | 5 | 5 | | | | 5 | II |
| Layer: Field & ground | | | | | | | | | | | | | | | | |
| Broad buckler-fern | 2 | | | | | | | | | | 2 | | | | | I |
| Bugle | 1 | 3 | | | 2 | | | | | | 1 | 3 | | | 2 | III |
| Chickweed | 1 | | | | 2 | | | | | | 1 | | | | 2 | II |
| Common bent | 3 | 7 | | | | | | | | | 3 | 7 | | | | II |
| Common feather moss | | | | 3 | | | | | | | | | | 3 | | I |
| Common mouse-ear | | | 2 | | | | | | | | | | 2 | | | I |
| Common nettle | 1 | | | | | | | | | | 1 | | | | | I |
| Creeping buttercup | 1 | | | | 1 | | | | | | 1 | | | | 1 | II |

| Species | April 2021 | | | | | May 2021 | | | | | Combined* | | | | | Frequency |
|--------------------------|------------|----|----|----|----|----------|----|----|----|----|-----------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Creeping cinquefoil | | | 1 | 1 | 2 | | | | | | | | 1 | 1 | 2 | III |
| Crisped dock | | 2 | | | | | | | | | | 2 | | | | I |
| Dandelion | 1 | | | | | | | | | | 1 | | | | | I |
| Fleabane | | | | | | | | 4 | | | | | 4 | | | I |
| Hogweed | | | 1 | | | | | | | | | | 1 | | | I |
| Lords-and-ladies | 2 | | | | | | | | | | 2 | | | | | I |
| Meadow vetchling | 2 | 2 | | | | | | | | | 2 | 2 | | | | II |
| <i>Plagiothecium</i> sp. | | | | | 2 | | | | | | | | | | 2 | I |
| Rosebay willowherb | | | 3 | | | | | | | | | | 3 | | | I |
| Rough meadow-grass | | | | | | | 3 | 7 | | | | 3 | 7 | | | II |
| Spear thistle | | 1 | 3 | | | | | 4 | | 3 | | 1 | 4 | | 3 | III |
| Springy turf-moss | | | 3 | | | | | | | | | | 3 | | | I |
| Sweet vernal | | | | | | | 3 | | | | | 3 | | | | I |
| Wild privet | | | | | 1 | | | | | | | | | | 1 | I |
| Wood avens | 1 | 2 | | 1 | 2 | | | | | | 1 | 2 | | 1 | 2 | IV |

| Species | April 2021 | | | | | May 2021 | | | | | Combined* | | | | | Frequency |
|-------------------------|------------|----|----|----|----|----------|----|----|----|----|-----------|----|----|----|----|-----------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | |
| Wood meadow-grass | | 4 | 3 | 3 | 3 | | | | | | | 4 | 3 | 3 | 3 | IV |
| Wood sedge | 1 | | | | | | | | | | 1 | | | | | I |
| Wood speedwell | | | | | 3 | | | | | | | | | | 3 | I |
| Dead leaves/bare ground | 8 | 7 | | | 8 | | | | | | 8 | 7 | | | 8 | III |
| Standing deadwood (Ash) | | | | | | | | 3 | 2 | 1 | | | 3 | 2 | 1 | III |

Table D13 Workhouse Copse

| Species | April 2021 | | | | | May 2021 | | | | | Combined* | | | | | Frequency | |
|----------------------------------|-------------------|-----------|-----------|-----------|-----------|-----------------|-----------|-----------|-----------|-----------|------------------|-----------|-----------|-----------|-----------|------------------|----|
| | Q1** | | | | | Q1** | | | | | Q1** | | | | | | |
| Layer: canopy | | | | | | | | | | | | | | | | | |
| Pedunculate Oak | | | | | | 4 | | | | | 4 | | | | | III | |
| Scots pine | | | | | | 8 | | | | | 8 | | | | | V | |
| Sweet chestnut | | | | | | 8 | | | | | 8 | | | | | V | |
| | Q1** | | | | | Q1** | | | | | Q1** | | | | | | |
| Layer: understory | | | | | | | | | | | | | | | | | |
| Beech | | | | | | 2 | | | | | 2 | | | | | II | |
| Cherry | | | | | | 1 | | | | | 1 | | | | | II | |
| Elder | | | | | | 4 | | | | | 4 | | | | | III | |
| English elm | | | | | | 4 | | | | | 4 | | | | | III | |
| Field maple | | | | | | 4 | | | | | 4 | | | | | III | |
| Hazel | | | | | | 6 | | | | | 6 | | | | | V | |
| Holly | | | | | | 4 | | | | | 4 | | | | | III | |
| Sycamore | | | | | | 2 | | | | | 2 | | | | | II | |
| Layer: Field & Ground | | | | | | | | | | | | | | | | | |
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | Q1 | Q2 | Q3 | Q4 | Q5 | | |
| Bluebell | 8 | 7 | 1 | 9 | 2 | 8 | 7 | 1 | 9 | 2 | 8 | 7 | 1 | 9 | 2 | V | |
| Cleavers | 1 | | | | | 1 | | | | | 1 | | | | | I | |
| Common feather moss | 3 | | | | | 3 | | | | | 3 | | | | | I | |
| Common nettle | 1 | | | | | 4 | | | | | 1 | | | | | 4 | II |
| Crisped dock | 1 | | | | | 1 | | | | | 1 | | | | | I | |

| Species | April 2021 | | | | May 2021 | | | | Combined* | | | | Frequency | |
|---------------------------|------------|---|------|---|----------|---|------|---|-----------|---|------|---|-----------|--|
| | Q1** | | Q1** | | Q1** | | Q1** | | Q1** | | Q1** | | | |
| Dog's mercury | 4 | | 5 | | 4 | | 5 | | 4 | | 5 | | II | |
| <i>Fissidens</i> sp. | | | 3 | | | | 3 | | | | 3 | | I | |
| Ground-ivy | | | 3 | | | | 3 | | | | 3 | | I | |
| Hard shield-fern | | | 1 | 1 | | | 1 | 1 | | | 1 | 1 | II | |
| Hart's-tongue fern | | | 1 | | | | 1 | | | | 1 | | I | |
| Lesser celandine | 5 | 5 | 3 | 4 | 5 | 5 | 3 | 4 | 5 | 5 | 3 | 4 | IV | |
| Lords -and- ladies | 1 | | | | 1 | | | | 1 | | | | I | |
| Primrose | | | 2 | | | | 2 | | | | 2 | | I | |
| Red campion | | | 1 | | | | 1 | | | | 1 | | I | |
| Swan's neck Thyme-moss | 3 | 3 | 3 | | 3 | 3 | 3 | | 3 | 3 | 3 | | III | |
| White dead-nettle | | | 4 | | | | 4 | | | | 4 | | I | |
| Wood anemone | 7 | 6 | | | 7 | 6 | | | 7 | 6 | | | II | |
| Fallen leaves/bare ground | 1 | 6 | 4 | 5 | 1 | 6 | 4 | 5 | 1 | 6 | 4 | 5 | IV | |

Annex E

MAVIS output

| Survey location | MAVIS output Community, top 10 coefficients provided |
|-----------------------|--|
| Angmering Park | NVC: MG10a 43.26 NVC: MG10 38.42 NVC: MG10b 35.79 NVC: SD17 33.30 NVC: SD17d 33.30 NVC: SD17a 33.23 NVC: SD17c 32.87 NVC: MG11a 32.75 NVC: MG13v2 32.56 NVC: MG13 32.00 |
| Calcot Wood | Group 0: April 2022 NVC: W25b 46.10 NVC: W10d 39.55 NVC: W25 39.22 NVC: OV27 34.76 NVC: W23c 34.25 NVC: W23 33.42 NVC: W10 32.41 NVC: W22a 31.87 NVC: OV27b 31.19 NVC: OV27c 31.06 Group 1: June 2022 NVC: W25b 45.51 NVC: W10d 44.27 NVC: W25 43.98 NVC: OV27 42.86 NVC: W22 39.34 NVC: W23 38.64 NVC: W22a 37.36 NVC: W23c 35.93 NVC: W10 35.88 NVC: W10a 34.40 Group 2: Combined NVC: W25b 47.15 NVC: W10d 45.15 NVC: W25 43.88 NVC: OV27 42.13 |

| Survey location | MAVIS output Community, top 10 coefficients provided |
|-----------------|---|
|-----------------|---|

NVC: W23 40.49
 NVC: W22 38.01
 NVC: W10 37.76
 NVC: W23c 37.31
 NVC: W22a 36.33
 NVC: W10a 35.26

Crossbush

NVC: W21b 43.04
 NVC: W25 42.73
 NVC: W21 42.55
 NVC: W25a 42.14
 NVC: W10a 41.69
 NVC: W8d 41.69
 NVC: W10c 40.58
 NVC: W8 40.36
 NVC: W10 40.27
 NVC: W8b 39.66

Grassland at Wineham Lane

Group 0
 NVC: MG7B 31.02
 NVC: MG1b 30.83
 NVC: MG1c 30.28
 NVC: MG9b 29.93
 NVC: MG1a 29.51
 NVC: MG6a 28.17
 NVC: MG1 26.93
 NVC: MG7 26.22
 NVC: MG6d 24.87
 NVC: OV23b 24.63

Poling Copse

Group 0: April 2022
 NVC: W8d 42.82
 NVC: W10a 38.29
 NVC: W10c 37.04
 NVC: W10 36.74
 NVC: W8 36.32
 NVC: W12a 36.16
 NVC: W8b 35.26
 NVC: W8a 34.99
 NVC: W8c 34.26
 NVC: W12 33.98

Group 1: June 2022
 NVC: W10c 40.24
 NVC: W10a 37.07
 NVC: W8d 37.06
 NVC: W10 35.12

| Survey location | MAVIS output Community, top 10 coefficients provided |
|----------------------------|---|
| | NVC: W12a 34.59 NVC: W8 32.94 NVC: W21a 32.63 NVC: W21 31.51 NVC: W8a 31.25 NVC: W21c 31.19 Group 2: Combined NVC: W8d 43.33 NVC: W10c 39.34 NVC: W10a 39.19 NVC: W12a 38.41 NVC: W8 38.11 NVC: W10 37.41 NVC: W8a 36.65 NVC: W8b 35.84 NVC: W8e 35.13 NVC: W21 35.06 |
| Spofforth North | Group 1: North NVC: MG11a 43.38 NVC: MG11 41.97 NVC: MG6c 41.90 NVC: MG6a 41.64 NVC: OV23 41.61 NVC: MG7E 41.01 NVC: SD8d 40.70 NVC: MG7F 40.16 NVC: SD8a 39.98 NVC: MG11b 39.76 |
| Spofforth South | Group 0: South NVC: OV23 45.17 NVC: MG6a 42.20 NVC: OV23c 41.52 NVC: MG6c 40.24 NVC: MG7E 39.98 NVC: OV23a 39.95 NVC: SD8a 39.63 NVC: MG7F 39.22 NVC: MG6 39.11 NVC: MG11 39.02 |
| Sullington Hill LWS | Group 0: May 2021 NVC: CG3b 51.08 |

| Survey location | MAVIS output Community, top 10 coefficients provided |
|------------------------------|---|
| | NVC: CG3 49.98 NVC: CG4 49.86 NVC: CG2d 49.68 NVC: CG4b 49.36 NVC: CG2a 48.59 NVC: CG4c 48.52 NVC: CG2 47.74 NVC: CG3d 46.94 NVC: CG2c 44.81 Group 1: June 2021 NVC: CG2c 52.69 NVC: CG3b 51.52 NVC: MG5b 51.49 NVC: CG2d 51.05 NVC: CG3 50.55 NVC: CG4b 50.18 NVC: CG2 49.51 NVC: CG4 49.00 NVC: CG2a 48.80 NVC: CG3c 48.32 Group 2: Combined NVC: CG2d 53.51 NVC: CG3 52.87 NVC: CG3b 52.41 NVC: CG2 51.19 NVC: CG4 51.09 NVC: CG2c 50.82 NVC: CG4b 50.66 NVC: CG2a 50.56 NVC: CG3c 49.07 NVC: CG4c 48.14 |
| Talbot & Baker I | Group 0 NVC: MG7A 30.30 NVC: S28c 28.07 NVC: MG13 24.46 NVC: OV26a 21.65 NVC: MG7 21.51 NVC: MG10a 20.49 NVC: S5 19.90 NVC: OV27 19.29 NVC: SD6c 18.10 NVC: MG11a 17.95 |
| Talbot & Baker II | |

| Survey location | MAVIS output Community, top 10 coefficients provided |
|-------------------------|--|
| Warningcamp Hill | <p>Group 0</p> <p>NVC: MG9b 40.30</p> <p>NVC: MG1b 40.10</p> <p>NVC: OV25b 37.69</p> <p>NVC: MG9 35.93</p> <p>NVC: MG1c 34.82</p> <p>NVC: OV26d 34.06</p> <p>NVC: OV27b 33.98</p> <p>NVC: OV27 33.50</p> <p>NVC: MG1a 32.15</p> <p>NVC: MG7D 32.04</p> |
| | <p>Group 0: May 2021</p> <p>NVC: MG1d 47.47</p> <p>NVC: MG1e 47.24</p> <p>NVC: MG5b 46.37</p> <p>NVC: CG4c 46.20</p> <p>NVC: MG5 45.38</p> <p>NVC: CG6 44.08</p> <p>NVC: MG5a 43.95</p> <p>NVC: SD8 43.20</p> <p>NVC: CG4 43.14</p> <p>NVC: SD8a 43.07</p> |
| | <p>Group 1: June 2021</p> <p>NVC: MG5b 50.44</p> <p>NVC: MG5 49.44</p> <p>NVC: CG4c 48.96</p> <p>NVC: CG2c 48.25</p> <p>NVC: MG1d 48.13</p> <p>NVC: MG5a 48.13</p> <p>NVC: MG1e 48.09</p> <p>NVC: CG6 46.95</p> <p>NVC: MG1 44.65</p> <p>NVC: SD8a 44.47</p> |
| | <p>Group 2: Combined</p> <p>NVC: MG5b 50.83</p> <p>NVC: CG4c 49.43</p> <p>NVC: MG5 49.05</p> <p>NVC: CG2c 48.60</p> <p>NVC: MG1d 48.56</p> <p>NVC: MG1e 48.51</p> <p>NVC: MG5a 47.73</p> <p>NVC: CG6 47.39</p> <p>NVC: CG4 45.65</p> |

| Survey location | MAVIS output Community, top 10 coefficients provided |
|---------------------------------|---|
| Woodland at Wineham Lane | NVC: W8d 37.91 NVC: W8a 37.05 NVC: W8 34.07 NVC: W10c 33.39 NVC: W8c 32.53 NVC: W8e 32.39 NVC: W10 32.33 NVC: W8b 31.25 NVC: W21c 31.21 NVC: W10a 31.15 |
| Workhouse Copse | NVC: W8b 38.66 NVC: W8 37.42 NVC: W8d 37.08 NVC: W10a 36.62 NVC: W8f 35.29 NVC: W21b 34.20 NVC: W12a 33.66 NVC: W10 33.52 NVC: W10c 33.06 NVC: W8e 32.88 |

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4.22.5



Volume 4, Appendix 22.5

Hedgerow Survey Report



Contents

| | | |
|-----------|--|-----------|
| 1. | Hedgerows Regulations Assessment | 3 |
| 1.1 | Background | 3 |
| 1.2 | Survey site selection | 3 |
| 1.3 | Purpose of this appendix | 4 |
| 1.4 | Structure of this appendix | 4 |
| 2. | Methods | 5 |
| 2.1 | Hedgerow Scoping Survey | 5 |
| 2.2 | Hedgerow Importance Survey | 5 |
| 2.3 | Determining hedgerow importance | 6 |
| 2.4 | Deviations, constraints and limitations | 7 |
| 3. | Results | 8 |
| 3.1 | “ <i>Important</i> ” Hedgerows | 8 |
| 3.2 | Other hedgerows | 17 |
| | Hedgerows assessed as not “ <i>Important</i> ” | 17 |
| | Hedgerows without an importance assessment | 17 |
| 3.3 | Legally controlled plant species | 21 |
| 4. | References | 22 |

| | | |
|-----------|-----------------------------------|----|
| Table 3-1 | Important hedgerow survey results | 9 |
| Table 3-2 | Unknown hedgerows | 17 |

| | |
|---------|--|
| Annex A | Figures |
| Annex B | “ <i>Important</i> ” Hedgerow Criteria |
| Annex C | Survey data: Not important hedges |

1. Hedgerows Regulations Assessment

1.1 Background

- 1.1.1 This appendix should be read in conjunction with **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the Environmental Statement (ES) which is provided in support of the delivery of an Environmental Impact Assessment (EIA) associated with the Rampion 2 Offshore Wind Farm, hereafter referred to as the “*Proposed Development*” or “*Rampion 2*”.
- 1.1.2 This appendix describes the survey method and summarises the results of the Hedgerow surveys undertaken between 2021 and 2023.

1.2 Survey site selection

- 1.2.1 The onshore elements of the Proposed Development refer to works landward of Mean High Water Springs (MHWS) and will comprise the following key components:
- a temporary onshore cable corridor, approximately ~39km in length from the landfall at Climping to a new onshore substation at Oakendene, and from the new onshore substation to the existing National Grid Bolney substation, approximately 40m in width (20m either side of a centreline) within which the following will be located:
 - ▶ permanent infrastructure including High Voltage Alternating Current (HVAC) transmission cables and associated joint bays; and
 - ▶ temporary infrastructure including HDD trenchless crossing areas and haul roads., construction compounds and the associated access requirements.
 - Temporary construction compounds and associated access requirements;
 - A new onshore substation; and
 - A new connection to National Grid’s Bolney substation.
- 1.2.2 A detailed project description can be found in **Chapter 4: Project Description, Volume 1**.
- 1.2.3 Above mean high water springs the Proposed Development consists of permanent new above ground infrastructure at the location of the substation and at the connection point to National Grid’s Bolney substation.
- 1.2.4 The approach to the hedgerow survey was discussed with Natural England in April 2020, and again within a variety of forums with stakeholders including South Downs National Park Authority, West Sussex County Council and the Sussex Wildlife Trust (see **Section 22.3 of Chapter 22: Terrestrial ecology and nature conservation, Volume 2**), with agreement to the approach minuted.

1.3 Purpose of this appendix

- 1.3.1 The onshore cable corridor and onshore infrastructure cross through 239 hedgerows with the potential to be “*important*”. This appendix outlines the methodologies used, and summarises the results gathered as part of the hedgerow assessment within the proposed DCO Order Limits.
- 1.3.2 This report does not allude to any requirements for mitigation and/or compensation in respect of vascular plants or habitats, nor does it assess the potential effects that proposals might have upon them, as both issues are covered in detail in [Chapter 22: Terrestrial ecology and nature conservation, Volume 2](#).

1.4 Structure of this appendix

- 1.4.1 This appendix is structured as follows:
- **Section 3:** Methods;
 - **Section 3:** Results;
 - **Section 4:** References;
 - **Annex A:** Figures;
 - **Annex B:** “*Important*” hedgerow criteria; and
 - **Annex C:** Full survey details.

2. Methods

2.1 Hedgerow Scoping Survey

- 2.1.1 Between 2020 and 2023 a Phase 1 habitat survey (refer to [Appendix 21.3 Phase 1 Habitat Survey, Volume 4](#)) was undertaken covering the proposed DCO Order Limits (hereafter referred to as the Study Area). A total of 614 hedgerows were confirmed to be present either within or intersecting the Study Area.
- 2.1.2 Of these hedgerows 239 were identified for detailed survey to determine whether they met the definition of “*important*” under the Hedgerow Regulations 1997. As per the Regulations those hedgerows where additional survey was not deemed necessary were:
- not at least 30 years old;
 - were less than 20m in length; and
 - forming boundaries of gardens and houses.
- 2.1.3 In addition, where the hedgerow was found to be dominated by less than four native woody species, or if the feature was found not to be a hedgerow¹, these were scoped out of further assessment. The hedgerows identified are presented in [Figure 3.1, Annex A](#).

2.2 Hedgerow Importance Survey

- 2.2.1 Hedgerow surveys were undertaken within the Study Area between 2021 and 2023, following the methodology set out in Schedule 1, part II of the Hedgerow Regulations 1997, following the Hedgerow Survey Handbook (Defra, 2007). The purpose of hedgerow surveys was to identify whether any hedgerows within the proposed onshore cable corridor qualify as ecologically “*important*” under the Regulations criteria.
- 2.2.2 All hedgerows identified for further survey were surveyed (access permitting) using the methodology outlined by Defra (2007). The following was recorded for each hedgerow:
- total hedgerow length;
 - number of 30m sections within the hedgerow; and
 - for each 30m section the following were recorded:

¹ It was a different kind of linear vegetation such as a tree line, scrub, tall ruderal vegetation, rough grassland, or was composed of non-native species such as conifers, or ornamental shrubs such as snowberry and was instead mapped as part of the Extended Phase 1 habitat survey, or if it was not a vegetated feature, such as a fence line.

- ▶ all woody species;
- ▶ the overall frequency and length of gaps;
- ▶ ground flora, including the number of different woodland species present within one metre of the outermost edges of the hedgerow; and
- ▶ frequency of broadleaved trees.

2.2.3 Each hedgerow was described in terms of key species and vegetation structure. Features such as the presence of drainage ditches or banks, connecting hedgerows, or woodland, and ponds were recorded, adjacent land management, and the relationship of the hedge with neighbouring vegetation was also noted.

2.3 Determining hedgerow importance

- the main criteria used in determining the importance of the hedgerows were taken from Part II of Schedule 1 to the Regulations;
- that the hedgerow has been in existence for 30 years or more;
- the presence of at **least** seven woody species;
- at **least** six woody species, **plus** at least three Associated Features, including:
 - ▶ an intact hedge;
 - ▶ standard trees every 50m;
 - ▶ a parallel hedgerow, and
 - ▶ connections with other hedgerows and/ or woodland; and
- at **least** five woody species **and** at least four Associated Features.

2.3.1 Associated Features are defined as:

- the presence of a ditch, wall or bank along at least one half of the length of the hedgerow;
- gaps not exceeding 10 percent of the hedgerow length, in aggregate;
- connections to other hedgerows, ponds or areas of broadleaved woodland within 10m;
- presence of a parallel hedge within 15m²;
- at least three species of woodland ground flora within one metre; and
- the presence of other Associated Features such as whether the hedgerow is adjacent to a bridleway, footpath or road/track.

² In the absence of a Public Right of Way (PRoW) only, a parallel hedge does not count as an Associate Featured if a PRoW is present.

2.3.2 Where connections score four points they are considered to count as an associated feature. Connections score a point as follows:³

- 1 point: connection to another hedgerow; and
- 2 points: connection to broadleaved woodland or a pond.

2.3.3 Full details of the survey methods and legislation are provided in Annex B.

2.4 Deviations, constraints and limitations

2.4.1 Access to the full extent of a hedgerow was not always possible due to limitations of land access (e.g. hedgerows continued into areas outside of those where access was available). Therefore, not all features could be recorded for all hedgerows. This meant that in some cases it was not possible to fully assess the importance of such a hedge; in these instances, a precautionary approach was taken to the determination of importance.

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³ A hedgerow is connected where it meets and *also* if it had a point within ten metres of the hedgerow where it *would* make a connection, *if* the line continued (in the absence of a PRoW).

3. Results

3.1 “Important” Hedgerows

3.1.1 The hedgerow survey identified the presence of 14 “important” hedgerows within the Study Area. A summary of the hedgerow importance assessment is as follows:

- the following five hedgerows were recorded to support seven or more woody species;
 - ▶ H168, H184, H481, H483 and H492.
- five hedgerows with six woody species, plus at least three associated features; and
 - ▶ H139, H377, H388, H489, H495, H509
- four hedgerows with five woody species, plus at least four associated features.
 - ▶ H200, H484, H488, H491.

3.1.2 Full survey results of important hedgerow are presented in **Table 3-1** below and **Figure 3.2, Annex A**.

Table 3-1 Important hedgerow survey results

| Hedge Ref | Dimensions | | | Associated Features | | | | | | Connections | | | | Description and context | |
|-----------|------------|-----------|------------|---------------------|----------------------------|--------------|--------------------|--------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length (m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Tree per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H139 | 3 | 2 | 137 | 6 | ✓ | x | ✓ | ✓ | x | x | ✓ | 1 | 1 | x | Blackthorn dominated hedge, with elder, hawthorn, dogwood and ash standards. Cotoneaster ⁴ rare. Ground flora cleavers, ivy, dock, cow parsley, hogweed, common nettle, bramble, and campanula species. Associations - adjacent to footpath and hedge opposite (H142), links to woodland to the southeast. Located along northern limit of field. Bisects access route of proposed DCO Order Limits near Sullington Hill. |
| H168 | 2.5 | 2 | 337 | 7+ | x | ✓ | ✓ | ✓ | x | ✓ | x | 3 | 1 | x | Hawthorn dominated hedge with blackthorn, English elm, field maple, field elm, and hazel. Oak and ash standards; goat willow occasional. Associated with dry ditch; connected to hedges at northern and southern extent and halfway along field margin (all |

⁴ Not thought to be native wild cotoneaster, instead more likely to be an ornamental species, a garden escape.

| Hedge Ref | Dimensions | | | Associated Features | | | | | | Connections | | | | Description and context | |
|-----------|------------|-----------|------------|---------------------|---------------------------|--------------|--------------------|--------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length (m) | Woody Species | Road/track/bridleway/PRoW | Bank / Ditch | Gaps less than 10% | Tree per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H184 | 3 | 2 | 190 | 7+ | ✓ | x | ✓ | ✓ | x | ✓ | ✓ | 3 | 1 | x | lie beyond the proposed DCO Order Limits), also connected to woodland to north. Located within the proposed DCO Order Limits near The Pike at Washington. Blackthorn dominated hedge with hawthorn, field elm, dogwood, field maple, ash and oak standards. Ground flora comprising common nettle and bramble with hogweed, willowherbs, and meadowsweet. Associations with footpath, dry ditch and road; hedge on opposite site of road (H182) and connected to a hedge at both the northern and southern extents and halfway along hedges, at field margin; woodland located to south of hedge. Located along an access route of the proposed DCO Order Limits, leading to Storrington Road between Storrington and Washington. |
| H200 | 3 | 1.5-2 | 286 | 5 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 3 | x | x | Hedge composed of hazel, hawthorn, and beech, with oak and ash standards, honeysuckle. Ground |

| Hedge Ref | Dimensions | | | Associated Features | | | | | | | Connections | | | Description and context | |
|-----------|------------|-----------|------------|---------------------|----------------------------|--------------|--------------------|--------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|---|
| | Height (m) | Width (m) | Length (m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Tree per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H377 | 3 | 2 | 180 | 6 | ✓ | ✓ | ✓ | ✓ | x | ✓ | ✓ | 4 | 1 | x | flora species included primrose, harts' tongue, scale male fern. Connected to three hedges along field boundaries and runs parallel with another hedge on the other side of the Lane. Located along an access route of the proposed DCO Order Limits along Barns Farm Lane, leading to Storrington Road between Storrington and Washington. |
| H481 | 3 | 2 | 160 | 7+ | x | x | ✓ | x | x | ✓ | ✓ | 3 | x | x | Hedgerow with mature and semi mature oaks and field maple. Dogwood, field maple, hawthorn, blackthorn, holly, bramble, ivy, spindle, hazel, elder. |

| Hedge Ref | Dimensions | | | Associated Features | | | | | | Connections | | | | Description and context | |
|-----------|------------|-----------|------------|---------------------|----------------------------|--------------|--------------------|--------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length (m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Tree per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H483 | 3 | 2 | 135 | 7+ | x | x | ✓ | x | x | ✓ | ✓ | 4 | x | x | <p>Ground flora comprised Lords and ladies, false wood brome, stitchwort, and speedwells. Hedge connecting to the west was also recorded to be Important (H483). Snowberry was recorded in this hedge. Located within the proposed DCO Order Limits along the eastern limit of Kings Lane between Bolney substation and Monastery.</p> |
| H484 | 3 | 2 | 139 | 5 | ✓ | ✓ | ✓ | ✓ | x | x | ✓ | 3 | x | x | <p>Hedgerow comprising dogwood, field maple, blackthorn, hawthorn, hazel, with oak. Dry ditch to south with grassy verge of bramble, false oat grass,</p> |

| Hedge Ref | Dimensions | | | Associated Features | | | | | | Connections | | | | Description and context | |
|-----------|------------|-----------|------------|---------------------|----------------------------|--------------|--------------------|--------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length (m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Tree per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H488 | 1.5 | 2 | 108 | 5 | ✓ | ✓ | ✓ | ✓ | x | x | ✓ | 2 | x | x | Field maple, dogwood, blackthorn, hawthorn, oak, spindle, dog rose and bramble. Set on slight raised bank. Road verge mostly low-lying bramble. Dry ditch to south with tall ruderal vegetation including creeping thistle, field bindweed, common nettle, and rosebay willow herb. Bushy and outgrown. Connects to hedge H484 to the east, and opposite hedge H489- both also Important. Located within the proposed DCO Order Limits along Moatfield Lane/the eastern limit of Kings Lane between Bolney substation and Monastery. |

| Hedge Ref | Dimensions | | | Associated Features | | | | | | Connections | | | Description and context | | |
|-----------|------------|-----------|------------|---------------------|---------------------------|--------------|--------------------|--------------|---------------------------------|-----------------------|----------------|-------|-------------------------|----------|--|
| | Height (m) | Width (m) | Length (m) | Woody Species | Road/track/bridleway/PRoW | Bank / Ditch | Gaps less than 10% | Tree per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | | Woodland | Pond |
| H489 | 4 | 3 | 172 | 6 | ✓ | x | ✓ | ✓ | x | ✓ | ✓ | 4 | x | x | Field maple, dogwood, blackthorn, hawthorn, oak, spindle, bramble. Set on slight raised bank. Road verge mostly low-lying bramble. Bushy and outgrown. Connects to hedge H483 to the east, and opposite hedge H488- both also Important, and a further two hedges to the south at either end. Located within the proposed DCO Order Limits along Moatfield Lane/the eastern limit of Kings Lane between Bolney substation and Monastery. |
| H491 | 3 | 2 | 150 | 5 | ✓ | x | ✓ | ✓ | x | x | x | 3 | x | x | Hedgerow dominated by blackthorn, with hawthorn and frequent mature oaks, bramble. Connects to H488 in southern limit, also Important, and a further 2 hedges to the north. Young poplar trees planted opposite on other side of access track. Located within the proposed DCO Order Limits along the eastern limit of Kings Lane between Bolney substation and Monastery. |

| Hedge Ref | Dimensions | | | Associated Features | | | | | | Connections | | | Description and context | | |
|-----------|------------|-----------|------------|---------------------|----------------------------|--------------|--------------------|--------------|---------------------------------|-----------------------|----------------|-------|-------------------------|----------|---|
| | Height (m) | Width (m) | Length (m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Tree per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | | Woodland | Pond |
| H492 | 2-4 | 2-3 | 268 | 7 | ✓ | x | x | ✓ | x | ✓ | ✓ | 3 | x | x | Blackthorn, field maple, hazel, hawthorn, dogwood, field maple, with mature oaks. Connect to H495 at northern extent – also Important, and two further hedgerows, and opposite H487. Located within the access of the proposed DCO Order Limits along the southern limit of Kent Street between Bolney substation and Monastery. |
| H495 | 8 | 1 | 440 | 6 | ✓ | x | ✓ | ✓ | ✓ | ✓ | ✓ | 3 | 1 | x | Hedgerow composed of hawthorn, beech, field maple, with sycamore, horse chestnut, oak. Ground flora comprised ivy, bramble, Lords and ladies, strawberry, primrose, spindle, bramble. Located along an access track, connecting to woodland, and three hedges, including H492 at western extent – also Important. The westernmost extent is located within the access of the proposed DCO Order Limits along Kent Street between Bolney substation and Monastery. |

| Hedge Ref | Dimensions | | | Associated Features | | | | | | Connections | | | Description and context | | |
|-----------|------------|-----------|------------|---------------------|---------------------------|--------------|--------------------|--------------|---------------------------------|-----------------------|----------------|-------|-------------------------|----------|---|
| | Height (m) | Width (m) | Length (m) | Woody Species | Road/track/bridleway/PRoW | Bank / Ditch | Gaps less than 10% | Tree per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | | Woodland | Pond |
| H509 | 2 | 4 | 410 | 6 | ✓ | ✓ | ✓ | ✓ | x | ✓ | ✓ | 2 | x | x | Blackthorn, hazel, hawthorn, and field maple, with frequent oak and occasional goat willow. Associated with wet ditch. Ground flora included water dropwort, common nettles, docks, cleavers, Timothy, dog's mercury, ivy, and bluebell. Located opposite H487 and H505 and connected at the southern limit to H492 and H495- also Important. Located within the access of the proposed DCO Order Limits along Kent Street between Bolney substation and Monastery. |

3.2 Other hedgerows

Hedgerows assessed as not “Important”

- 3.2.1 Of the remaining hedgerows that lie within the Study Area, 192 did not meet the criteria for “important” hedges. These were either too short, too young, bordered residential gardens, supported less than seven woody species or where there were five or six woody species, they did not have sufficient associated features or the necessary connections; or finally they did not support more than four woody species. A summary is presented in **Table C.1** in **Annex C**.

Hedgerows without an importance assessment

- 3.2.2 A total of 30 hedgerows were not fully assessed due to access restrictions. At the time of reporting an estimate as to the likelihood of Importance has been made based upon a review of satellite imagery and records of adjacent and connected hedgerows that could be accessed for survey.
- 3.2.3 Five of the hedgerows are unknown but potentially “important”, with the remaining 25 hedgerows unlikely to be “important”.
- 3.2.4 A summary is presented in **Table 3-2** below, and in **Figure 3.3, Annex A**. Within **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** those considered “possibly important” are treated as if they qualify as important as a precaution.

Table 3-2 Unknown hedgerows

| Hedgerow reference | Notes | Hedgerow Importance Estimate |
|--------------------|--|---|
| H14 | Not fully accessed, so estimated: height 5m width 2m, no gaps. Hawthorn and apple abundant, sycamore, oak, silver birch, sweet chestnut, eucalyptus species, willow species. | Possibly Important due to connections to hedges to east and south and hedge opposite, plus runs along a road/track - access required to survey. |
| H15 | Not fully accessed, so estimated: 3m wide x 4m tall. Sweet chestnut, hawthorn, white poplar, elm, apple, plum, oak, butterfly bush. | Possibly Important due to connections to hedges to west and south and footpath opposite - access required to survey. |
| H171 | Not accessed. Assessed from satellite imagery, hedgerow regulations survey required. | Possibly Important due to connections to three hedgerows to north, south and centre and woodland to north- access required to survey. |

| Hedgerow reference | Notes | Hedgerow Importance Estimate |
|--------------------|---|--|
| H174 | Not accessed. Assessed from satellite imagery, hedgerow regulations survey required. | Possibly Important due to connections to hedges to north and south and woodland, hedge opposite, plus runs along a road/track - access required to survey. |
| H207 | Not accessed. Assessed from satellite imagery, hedgerow regulations survey required. | Possibly Important due to connections to hedges to west and south, and woodland - access required to survey. |
| H245 | Not accessed. Assessed from satellite imagery, hedgerow regulations survey required. | Possibly Important due to connection to woodland to east; connects to a road/track at western end- access required to survey. |
| H248 | Not accessed. Assessed from satellite imagery, hedgerow regulations survey required. | Possibly Important due to connections to hedges to north and south and woodland, hedge opposite, plus runs along a road/track - access required to survey. |
| H261 | Not accessed. Assessed from satellite imagery, hedgerow regulations survey required. | Unlikely to be Important as possibly forms part of a garden boundary. |
| H342 | Not accessed. Assessed from satellite imagery, hedgerow regulations survey required. | Possibly Important due to connections to four hedges to north and south - access required to survey. |
| H343 | Not accessed. Assessed from satellite imagery, boundary hedge for private residence, running along access road, connecting to hedge to east and woodland to west, hedge opposite. | Unlikely to be Important as possibly forms part of a garden boundary. |
| H345 | Not fully accessed: boundary hedge for private residence, running along access road. Grades to more sycamore and dogrose with dense bracken towards the western end. Multiple trees, ivy covered. Blackthorn and hazel present; hedge opposite. | Unlikely to be Important as possibly forms part of a garden boundary (continuation of H343). |

| Hedgerow reference | Notes | Hedgerow Importance Estimate |
|--------------------|--|---|
| H372 | Not accessed. Assessed from satellite imagery, hedgerow regulations survey required. | Possibly Important due to connections to two woodlands to east and south - access required to survey. |
| H448 | Not accessed. Assessed from satellite imagery, hedgerow regulations survey required. May not be a hedgerow, could be dense scrub. | If this feature is a hedgerow and not scrub, it is possibly Important due to connections to woodland to the south and west, and hedge/scrub opposite, plus runs along a road/track - access required to survey. |
| H456 | Not accessed. Assessed from satellite imagery, hedgerow regulations survey required. | Possibly Important due to connections to two hedgerows to east, and possible connection to northwest (requires measurement in the field) - access required to survey. |
| H464 | Not accessed. Assessed from satellite imagery, hedgerow regulations survey required. | Possibly Important due to connections to three hedges, woodland, and a pond; hedge opposite, plus runs along a road/track - access required to survey. |
| H466 | Not accessed. Assessed from satellite imagery, hedgerow regulations survey required. | Possibly Important due to connections to four hedges to east and west, hedge opposite, plus runs along a road/track - access required to survey. |
| H470 | Not fully accessed: Dense and wide planted hedgerow ~5m wide and 4m tall, up to 15m with trees. Mature oaks in hedgerow. Hedge comprises hazel, oak, sycamore, blackthorn, bramble, field maple, bracken. Set on bank sloping down towards road. | Possibly Important due to potential presence of a bank and connections to two woodlands, hedge opposite, plus runs along a road/track - access required to survey. |
| H474 | Not fully accessed: hawthorn, blackthorn, field maple, dogwood. Below 1m tall. May not classify as a hedgerow, instead line of scrub. | If this is a hedgerow it is possibly Important due to connections to two hedgerows and a woodland, hedge opposite, and it terminates in a road/track at eastern extent- access required to survey. |
| H486 | Not accessed. Assessed from satellite imagery, hedgerow regulations survey required. | Possibly Important due to connections to three hedgerows and a woodland, |

| Hedgerow reference | Notes | Hedgerow Importance Estimate |
|--------------------|--|---|
| | | hedge opposite, and runs along a road/track - access required to survey. |
| H513 | No access to assess fully. Recent planting evident. Lack of other management i.e. hedge species are tall with no evidence of failed, heavily poached. | Possibly Important due to connections to hedges to north and south and woodland strip opposite, connection to pond to south - access required to survey. |
| H527 | Not accessed. Assessed from satellite imagery, hedgerow regulations survey required. | Possibly Important due to connections to three linear features which are also possibly hedgerows to west, east and south - access required to survey. |
| H528 | Not accessed. Assessed from satellite imagery, hedgerow regulations survey required. | Possibly Important due to connections to three linear features which are also possibly hedgerows to north south - access required to survey. |
| H529 | Not accessed. Assessed from satellite imagery, hedgerow regulations survey required. | Possibly Important due to connections to three linear features which are also possibly hedgerows to north south - access required to survey. |
| H532 | No access to assess fully. Intact species poor blackthorn and hawthorn hedgerow with a single ash tree. In between footpath and road and arable field. | Possibly Important due to connections to three hedgerows to west, east and north, runs along a road/track and footpath - access required to survey. |
| H538 | No access to assess fully: intact species poor hawthorn hedgerow with occasional elder. | Unlikely to be Important as species poor, but connects to two hedgerows to west and east, and terminates along a track/road to east- access required to survey. |
| H547 | No access to assess fully: line of trees, next between arable fields and adjacent to access track | Possibly Important as located along a track/road to east- access required to survey |
| H552 | No access to assess fully: in between track and horse fields. Photos indicate mature ivy and dense ground flora. Opposite woodland stand. | Possibly Important due to connection to woodland and track- access required to survey. |

| Hedgerow reference | Notes | Hedgerow Importance Estimate |
|--------------------|---|--|
| H602 | No access to assess fully: hawthorn, blackthorn, dogwood and butterfly bush; heavily managed. | Unlikely to be important as only three woody species recorded - access required to survey. |
| H608 | Not accessed, assessed from satellite imagery and adjacent mapping. | Possibly Important due to connection to four hedgerows to east and west, hedgerow located opposite, and runs along a road- access required to survey. |
| H609 | Not accessed, assessed from satellite imagery. | Possibly Important due to connection to three hedgerows to north and south, hedgerow located opposite, and runs along a road- access required to survey. |

3.3 Legally controlled plant species

3.3.1 Non-native invasive plant species were recorded at the following hedgerow locations, also noted within the Extended Phase 1 survey report (refer to [Appendix 21.3 Phase 1 Habitat Survey, Volume 4](#)):

- Snowberry was recorded within hedgerows H481 and H484;
- Cotoneaster was recorded within hedgerow H481; and
- Himalayan balsam was recorded at hedgerow H208.

4. References

Council Directive 79/409/EEC., (1979 [as Amended]). *Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds.* [online] Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:31979L0409&from=EN>. [Accessed 27 July 2022].

Department of Energy and Climate Change (DECC)., (2011). *National Policy Statement for Renewable Energy Infrastructure (EN-3).* [online] Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/37048/1940-nps-renewable-energy-en3.pdf. [Accessed 27 July 2022].

Defra (2007). *Hedgerow Survey Handbook.* 2nd Edition [Online] available at: https://www.hedgelinek.org.uk/cms/cms_content/files/89_hedgerow-survey-handbook.pdf [Accessed 26 May 2023].

Defra (2021). *MAGIC webpage.* [online] Available at <https://magic.defra.gov.uk/>. [Accessed 27 July 2022].

JNCC, (2021). *JNCC Resource Hub.* [online] Available at <https://jncc.gov.uk/>. [Accessed 27 July 2022].

Natural Environment and Rural Communities (NERC) Act., (2006). *Species of Principal Importance in England (section 41) and Wales (section 42).* [Online]. Available at: <https://www.legislation.gov.uk/ukpga/2006/16/section/41>. [Accessed 27 July 2022].

PTES (2019). *The Great British Hedgerow Survey.* [Online]. Available at: <https://hedgerowsurvey.ptes.org/survey-guidelines> [Accessed 27 July 2022].

Planning Inspectorate (PINS)., (2018). *Using the Rochdale Envelope. Advice Note Nine: Rochdale Envelope.* [online] Available at <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/> [Accessed 27 July 2022].

Stace (2019). *New Flora of the British Isles.* Fourth Edition

UK Gov. (1981). *Wildlife and Countryside Act 1981 (as Amended).* (C.16). London: The Stationery Office

UK Gov. (1997). *Countryside hedgerows: protection and management.* [Online]. Available at: <https://www.gov.uk/guidance/countryside-hedgerows-regulation-and-management> [Accessed 26 May 2023].

UK Gov. (1997). *The Hedgerow Regulations 1997.* [Online]. Available at: <https://www.legislation.gov.uk/uksi/1997/1160/contents/made> [Accessed 26 May 2023].

Annex A

Figures

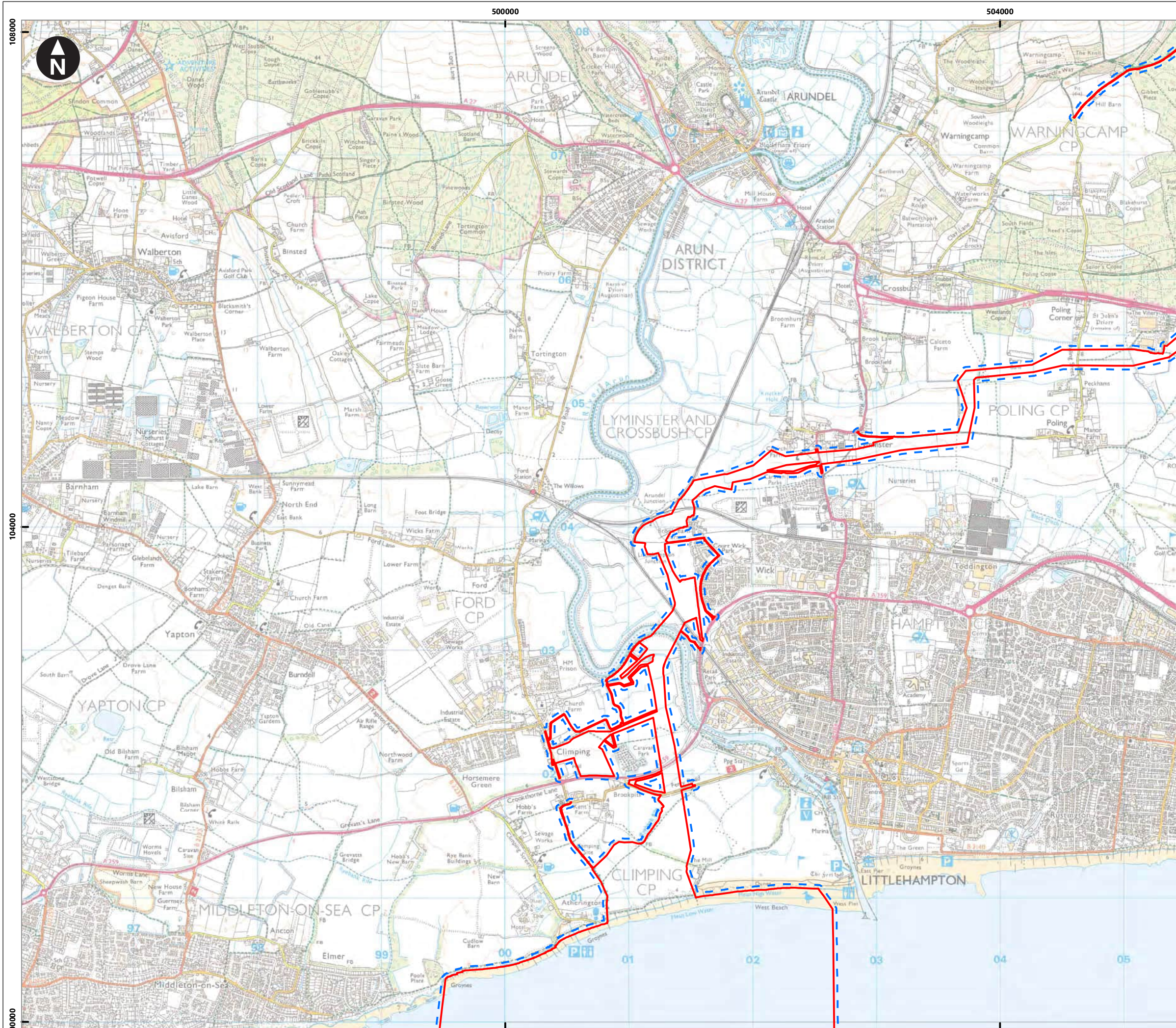
Figure 1.1 Study Area

Figure 3.1 Hedges Identified

Figure 3.2 “*Important*” hedges

Figure 3.3 Other hedges

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Key

- Proposed DCO Order Limits
- 30m buffer

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 Kilometres
 1:30,000
 British National Grid Transverse Mercator

Rampion Extension Development

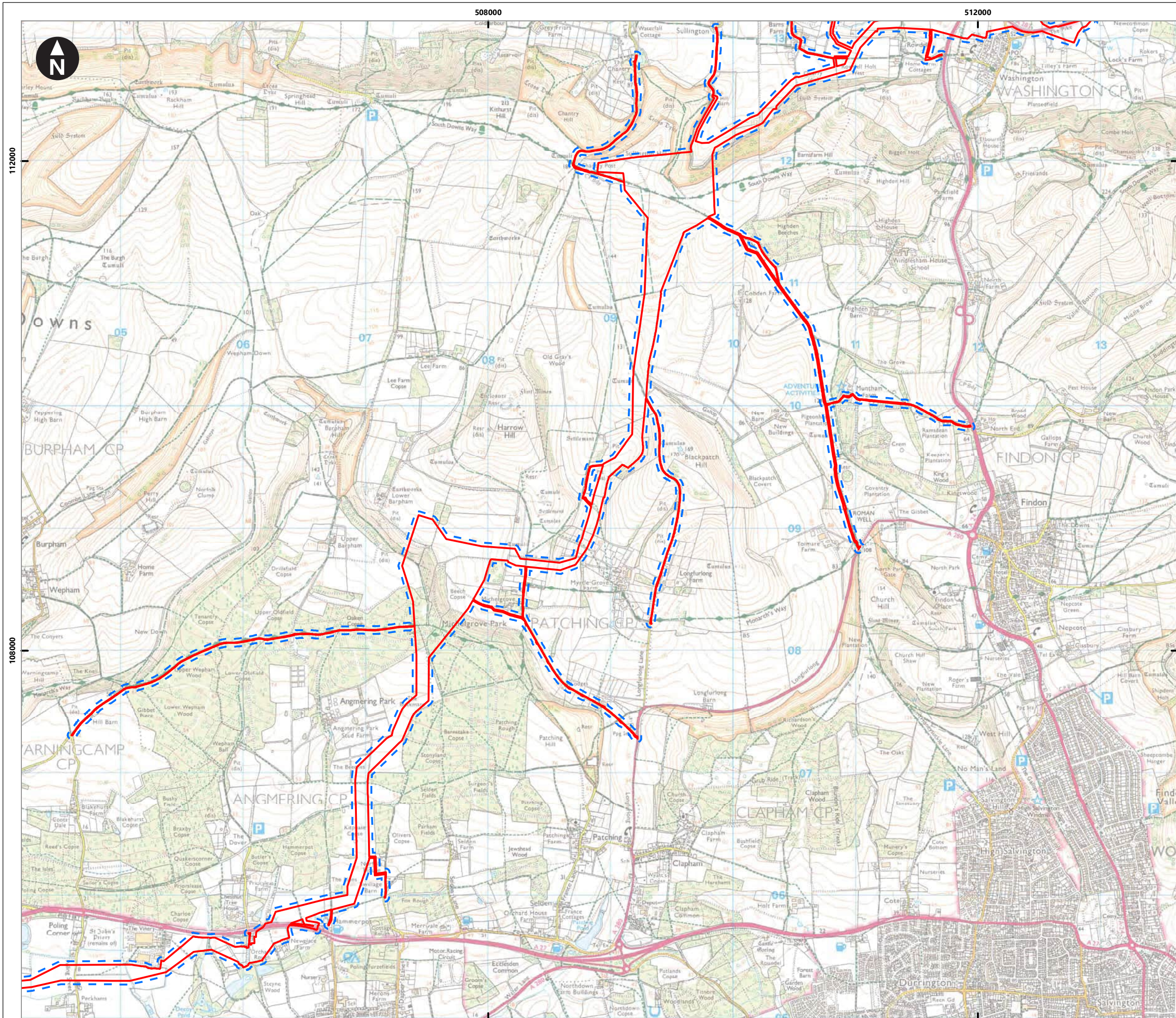
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Figure 1.1 Study Area

Page 1 of 3

Hedgerow Survey Report

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Key

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1:30,000
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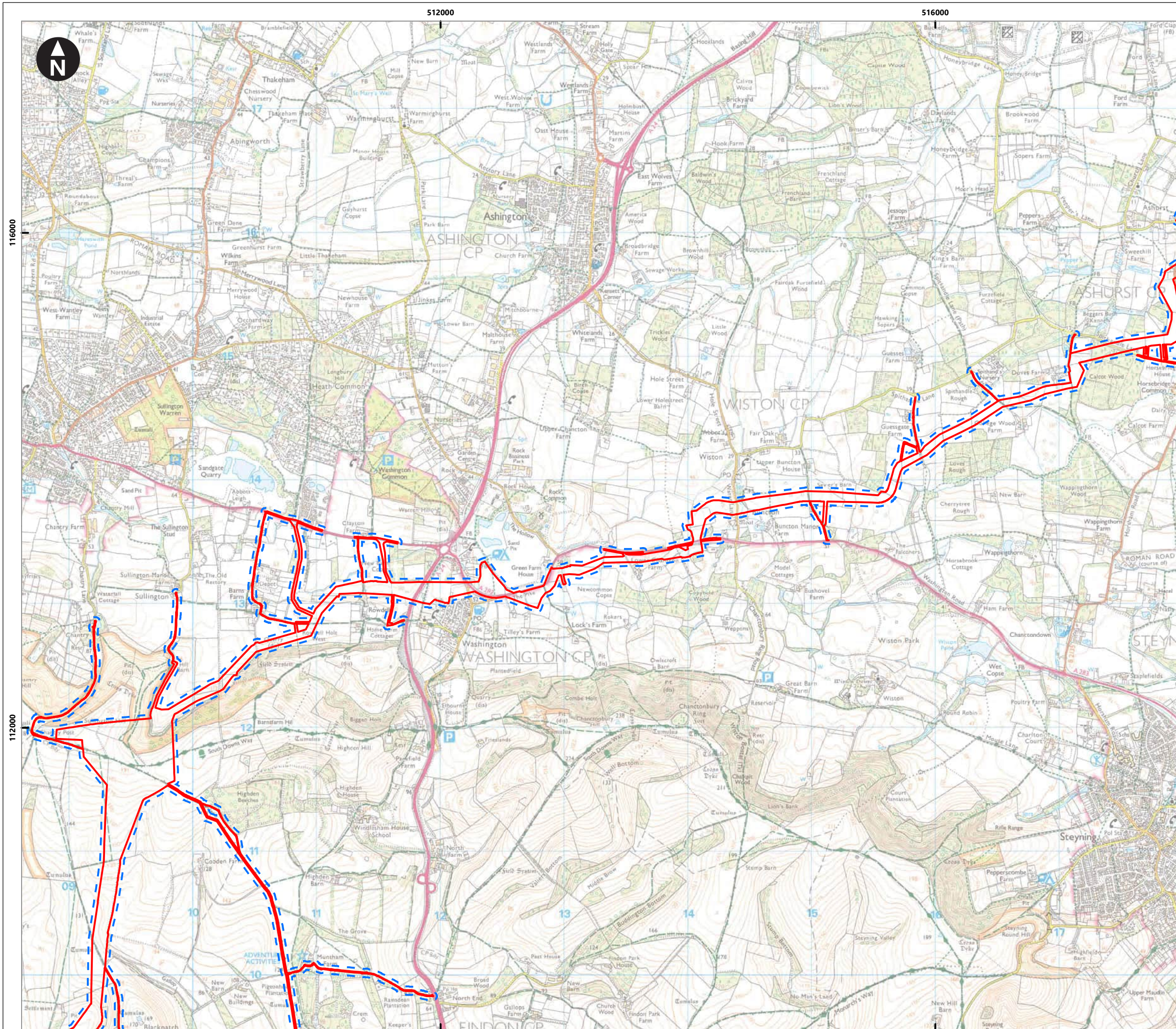
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Figure 1.1 Study Area

Page 2 of 3

Hedgerow Survey Report

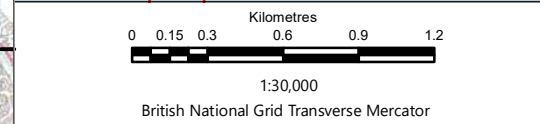
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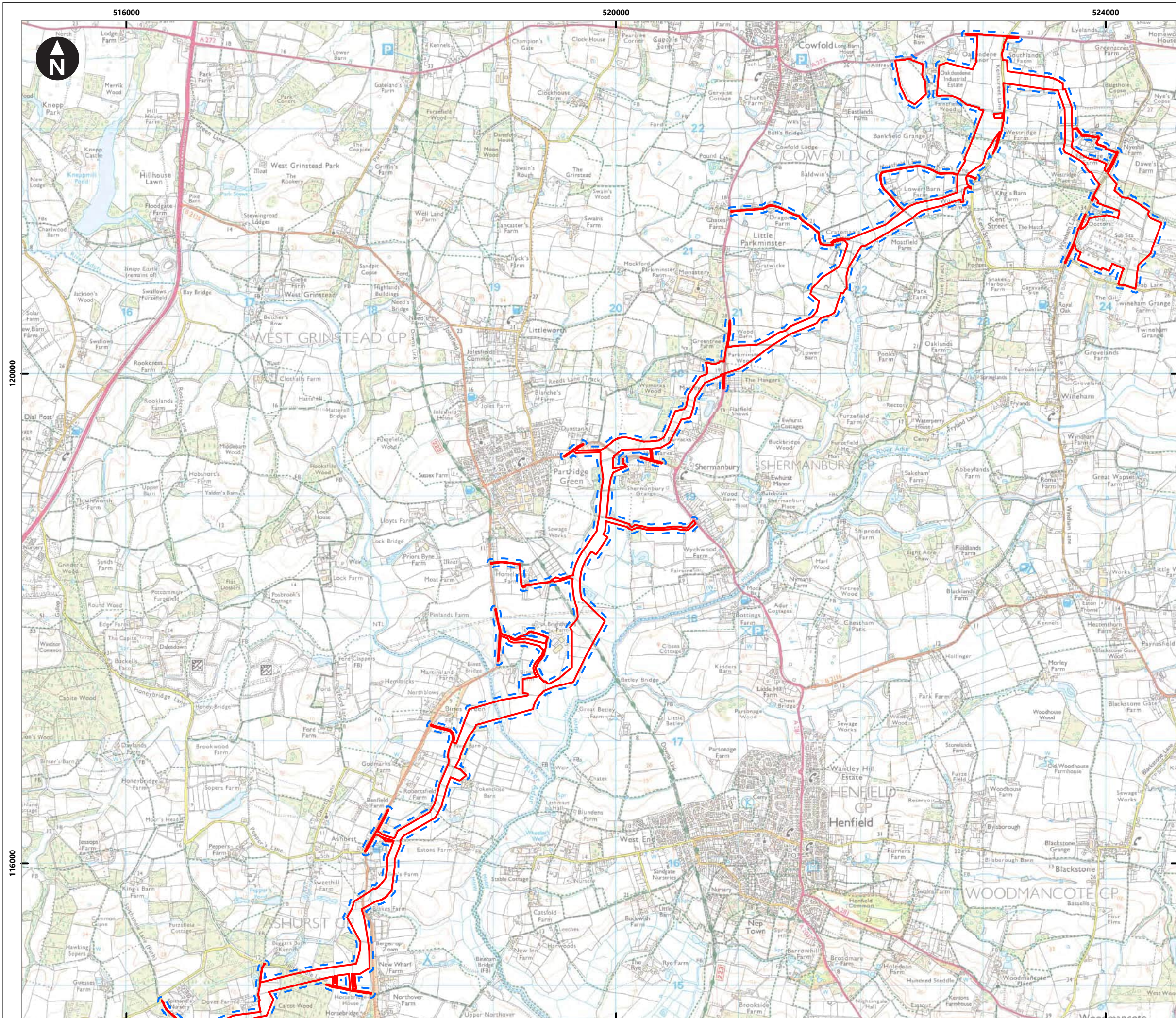
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- 30m buffer



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Rampion 2 Offshore Wind Farm
 Figure 1.1 Study Area
 Page 3 of 3
 Hedgerow Survey Report

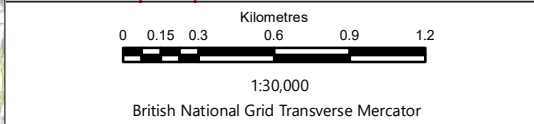
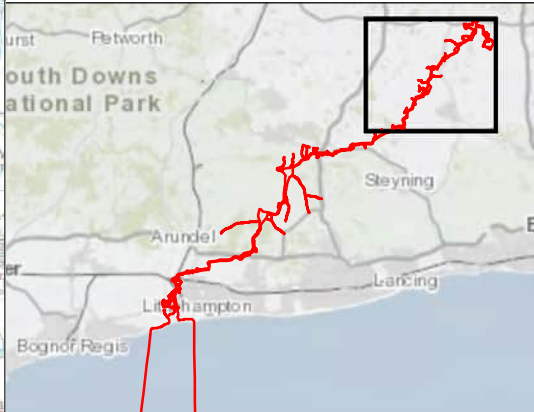
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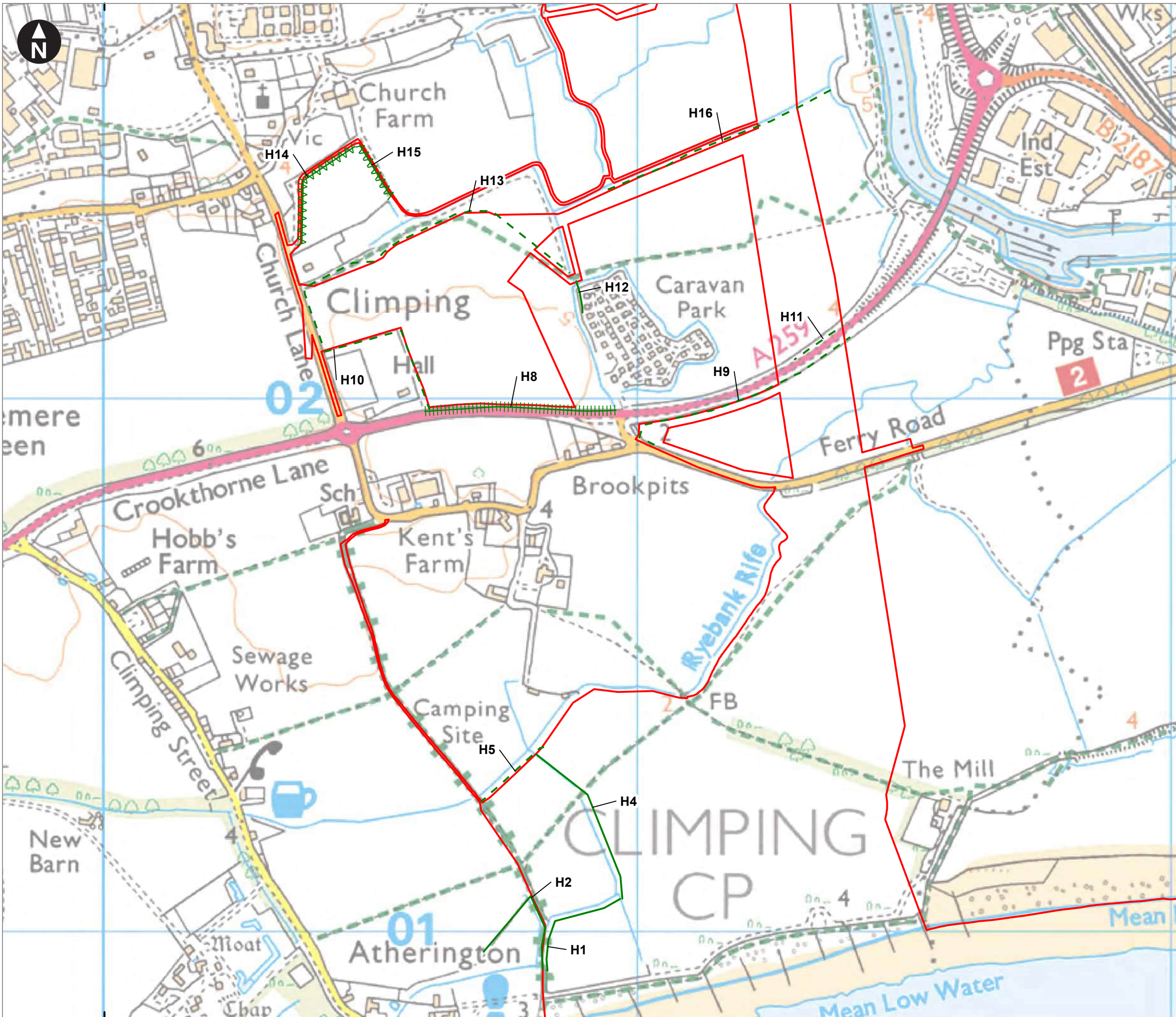


Rampion Extension Development

Rampion 2 Offshore Wind Farm
 Figure 1.1 Study Area
 Page 4 of 3
 Hedgerow Survey Report

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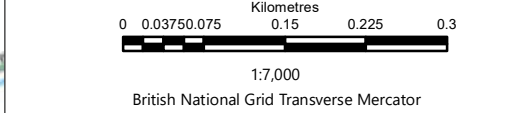
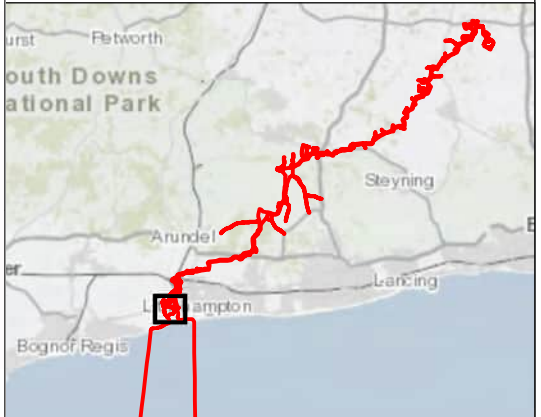
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- J2.1.1: Intact hedge native species-rich
- J2.1.2: Intact hedge, native, species poor
- J2.2.1: Defunct hedge native species-rich
- J2.2.2: Defunct hedge native species-poor
- J2.3.1: Hedge and trees native species-rich
- J2.3.2: Hedge and trees native species-poor

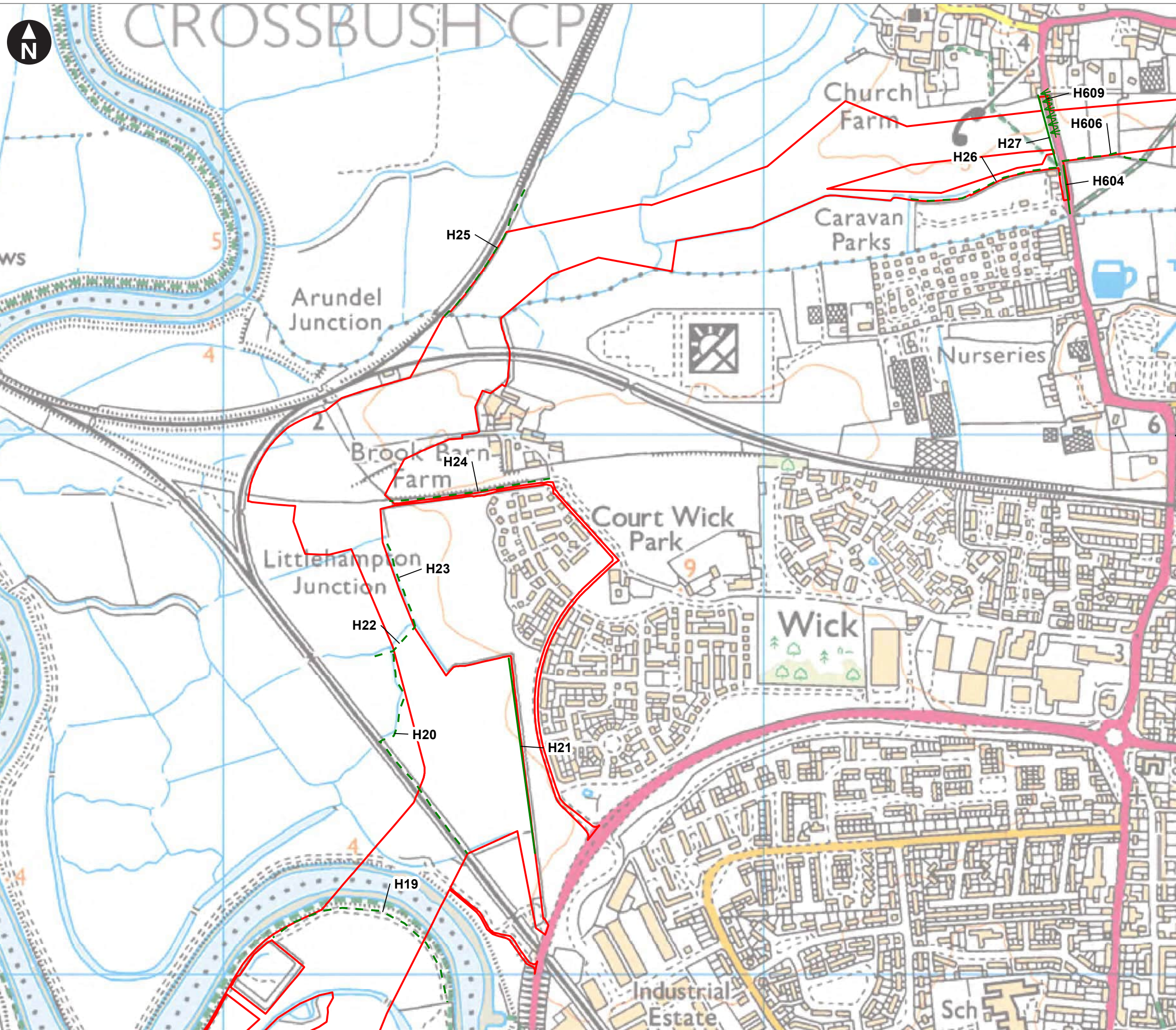


Rampion Extension Development

Rampion 2 Offshore Wind Farm
Figure 3.1 Hedgerows Identified
Page 1 of 18
Hedgerow Survey Report

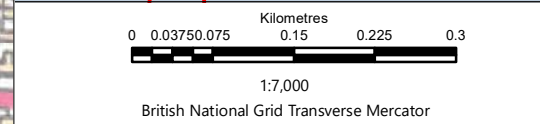
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Key

- Proposed DCO Order Limits
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- J2.1.2: Intact hedge, native, species poor
- - - - - J2.2.1: Defunct hedge native species-rich
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- ||||| J2.3.2: Hedge and trees native species-poor



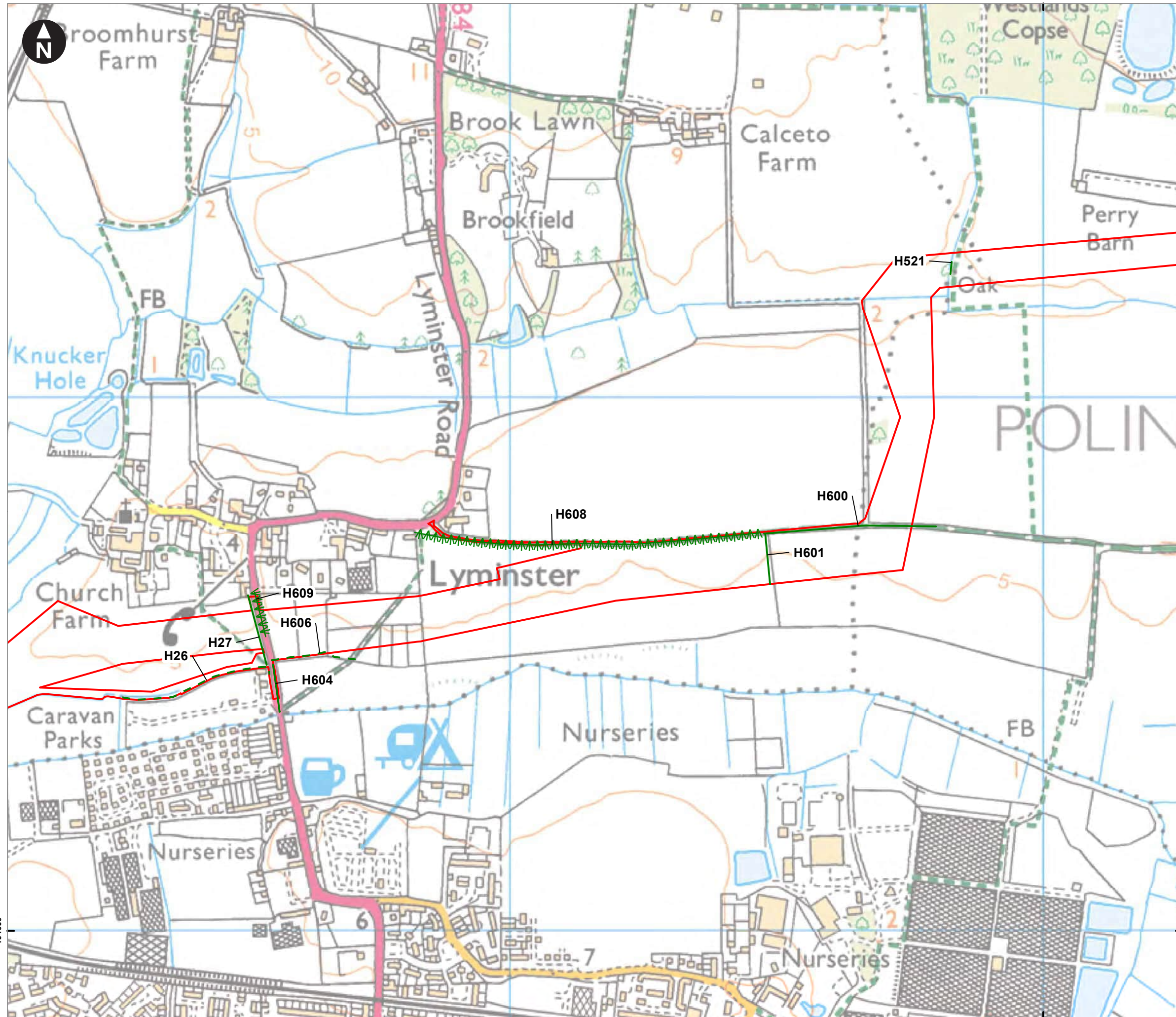
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Rampion 2 Offshore Wind Farm
 Figure 3.1 Hedgerows Identified
 Page 2 of 18
 Hedgerow Survey Report








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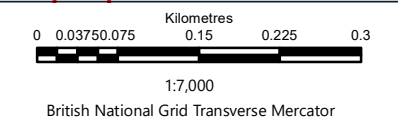
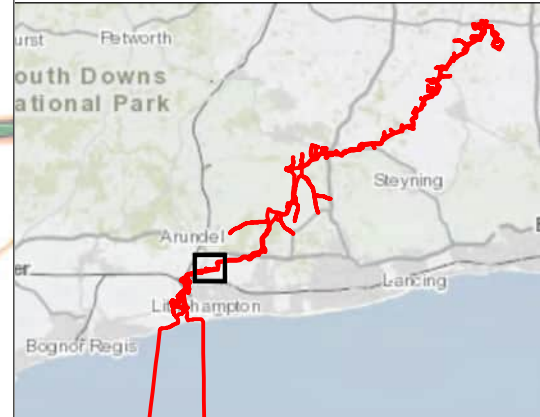
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Key

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-  J2.2.1: Defunct hedge native species-rich
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-  J2.3.1: Hedge and trees native species-rich
-  J2.3.2: Hedge and trees native species-poor



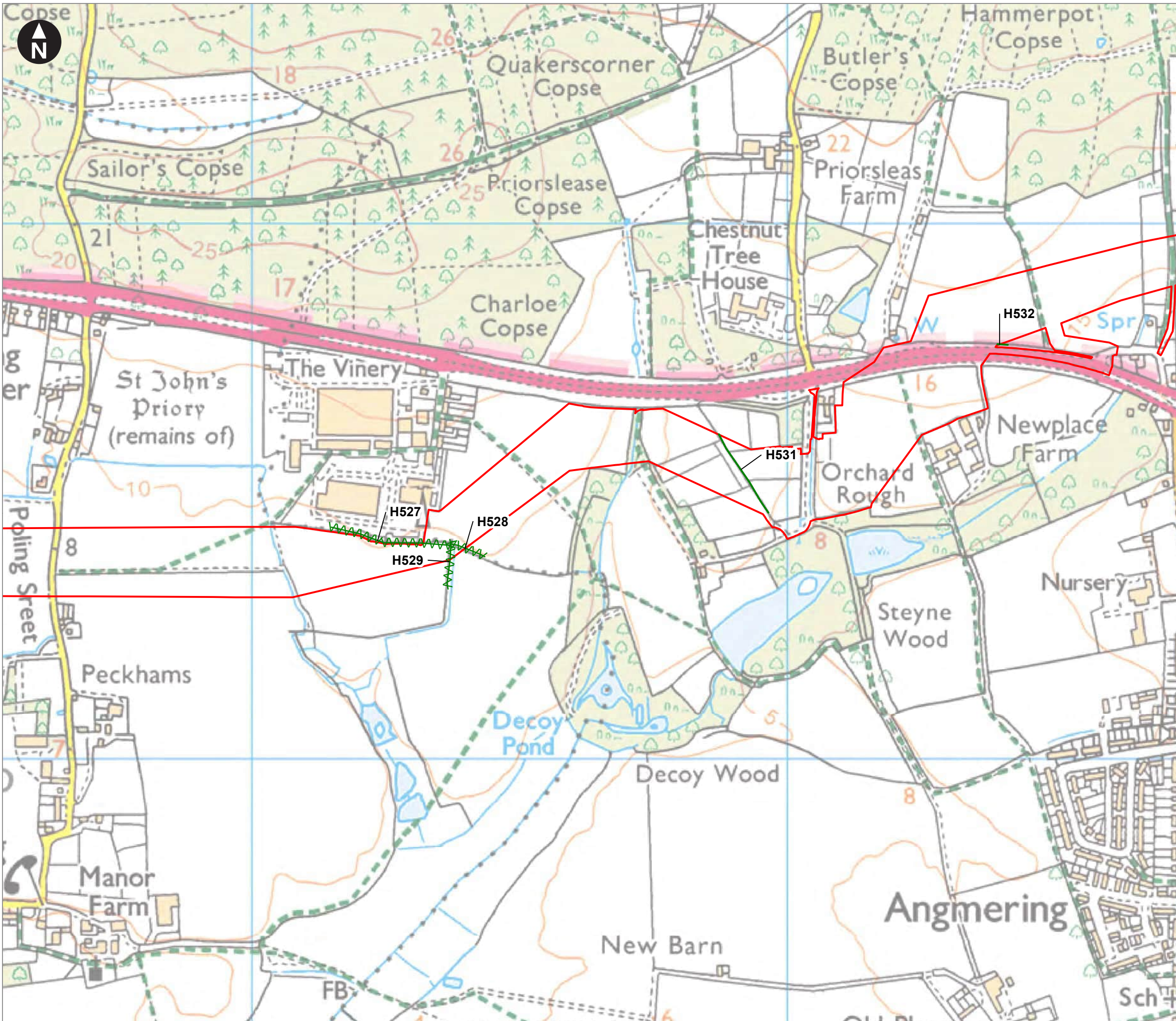
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Rampion 2 Offshore Wind Farm
Figure 3.1 Hedgerows Identified
Page 3 of 18
Hedgerow Survey Report

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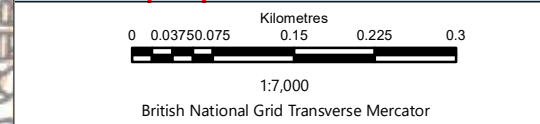
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- J2.2.1: Defunct hedge native species-rich
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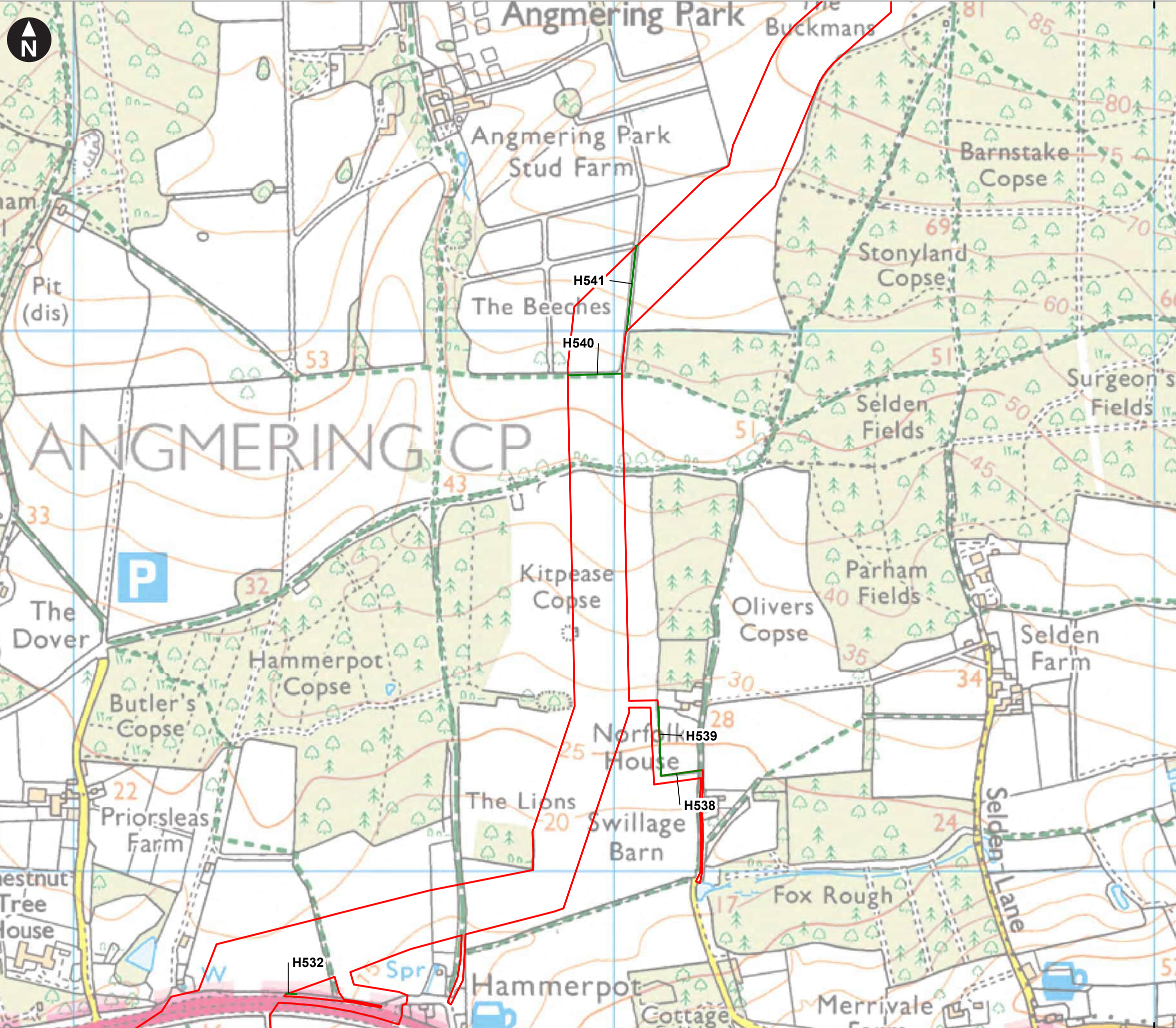


Rampion Extension Development

Rampion 2 Offshore Wind Farm
 Figure 3.1 Hedgerows Identified
 Page 4 of 18
 Hedgerow Survey Report

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 Version: 2.0

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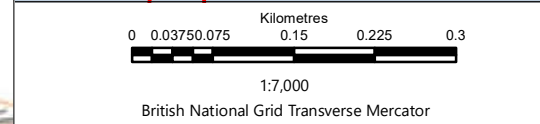


Key

Proposed DCO Order Limits

Hedgerow types

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- - - - - J2.2.2: Defunct hedge native species-poor
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Rampion Extension Development



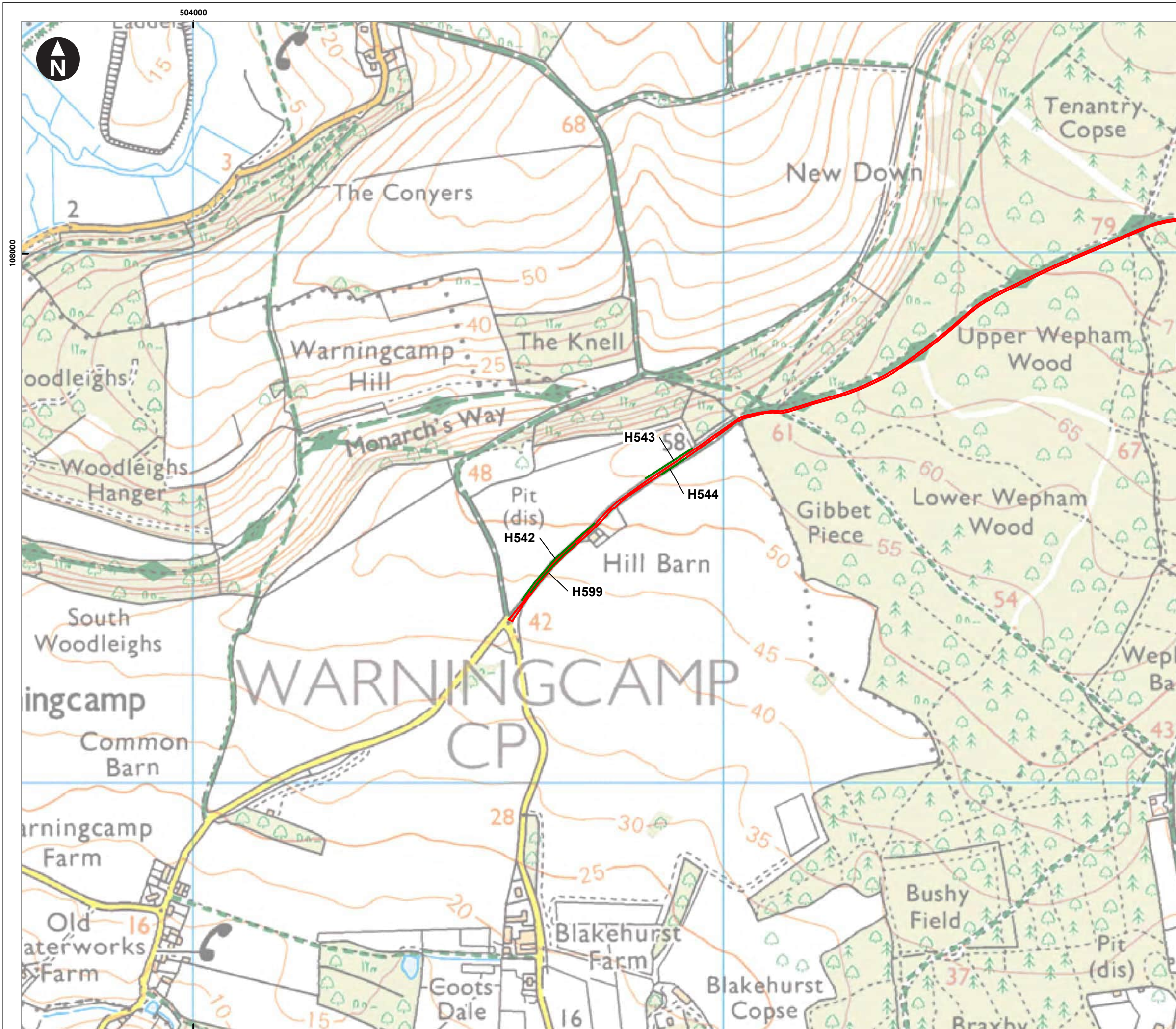
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Figure 3.1 Hedgerows Identified

Page 5 of 18

Hedgerow Survey Report

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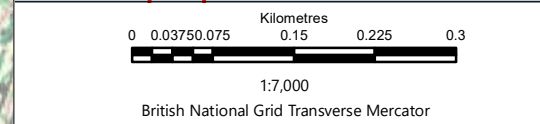
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Key

Proposed DCO Order Limits

Hedgerow types

- J2.1.1: Intact hedge native species-rich
- J2.1.2: Intact hedge, native, species poor
- J2.2.1: Defunct hedge native species-rich
- J2.2.2: Defunct hedge native species-poor
- J2.3.1: Hedge and trees native species-rich
- J2.3.2: Hedge and trees native species-poor



Rampion Extension Development

Rampion 2 Offshore Wind Farm

Figure 3.1 Hedgerows Identified

Page 6 of 18

Hedgerow Survey Report

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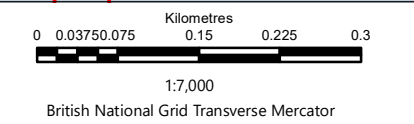
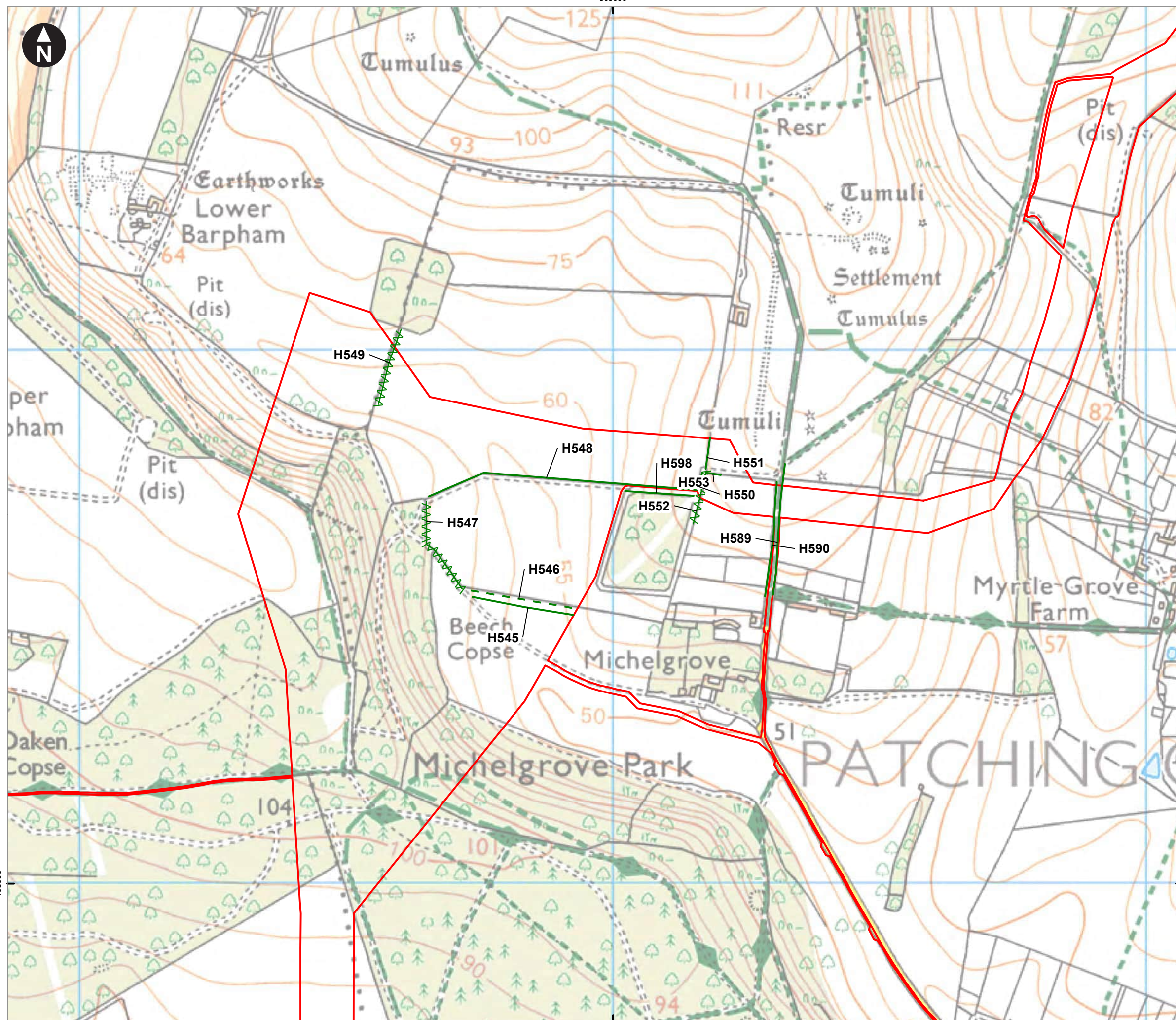
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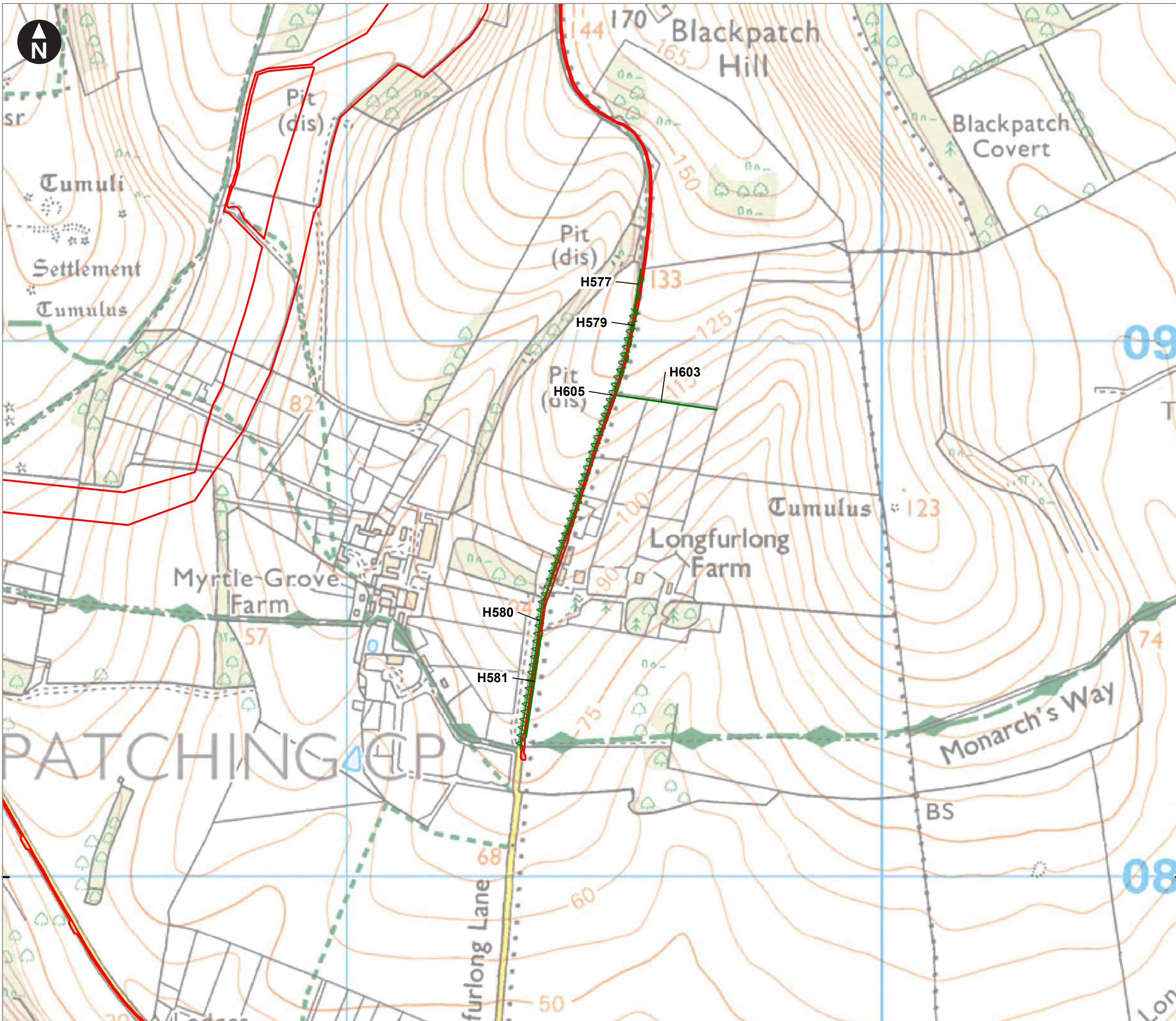
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Rampion Extension Development

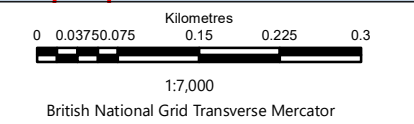
Rampion 2 Offshore Wind Farm
 Figure 3.1 Hedgerows Identified
 Page 7 of 18
 Hedgerow Survey Report

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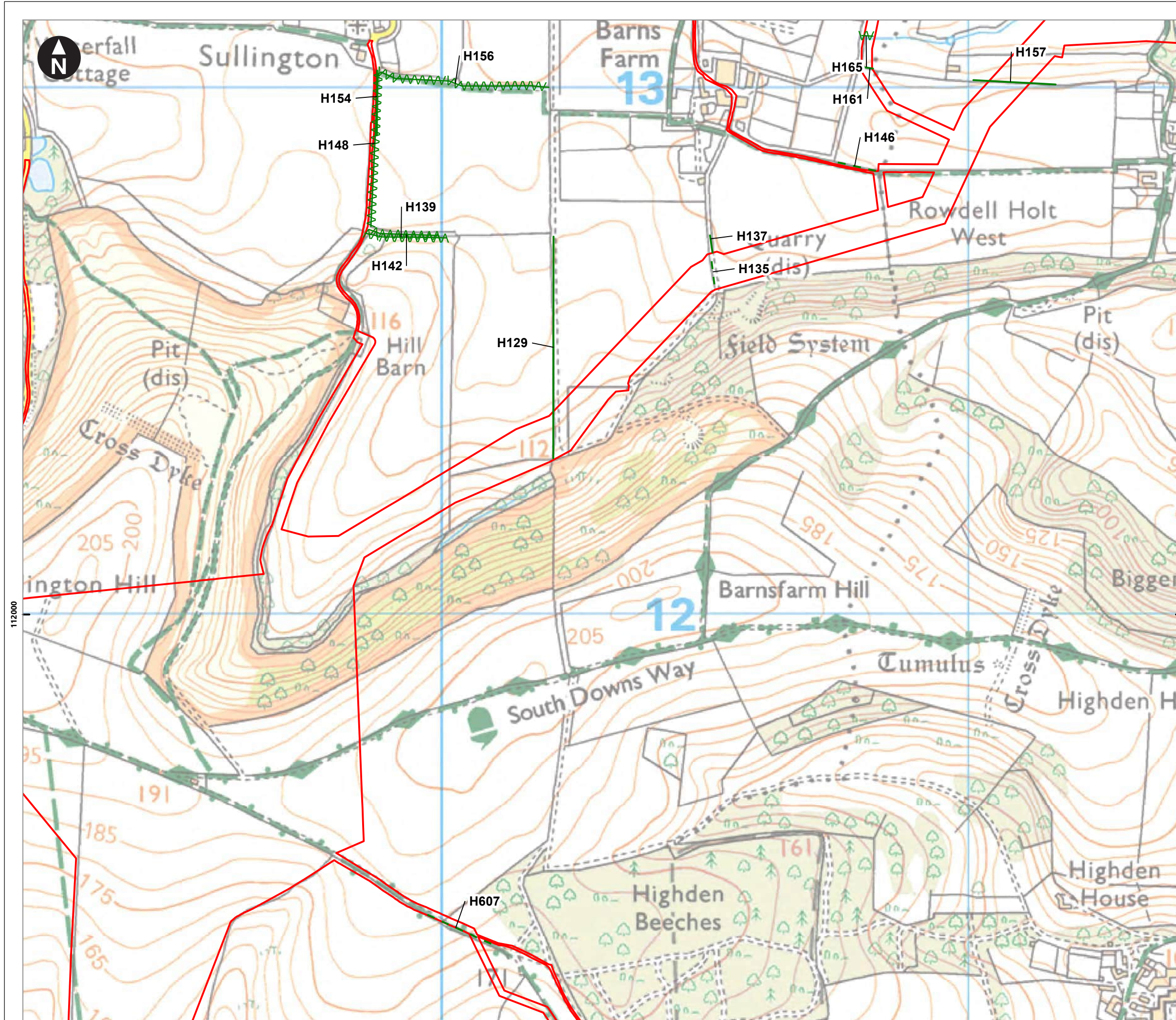


Rampion Extension Development

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 Figure 3.1 Hedgerows Identified
 Page 8 of 18
 Hedgerow Survey Report

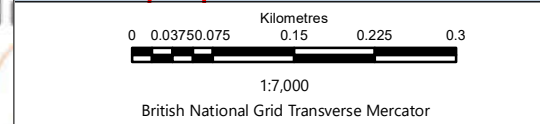
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Rampion Extension Development

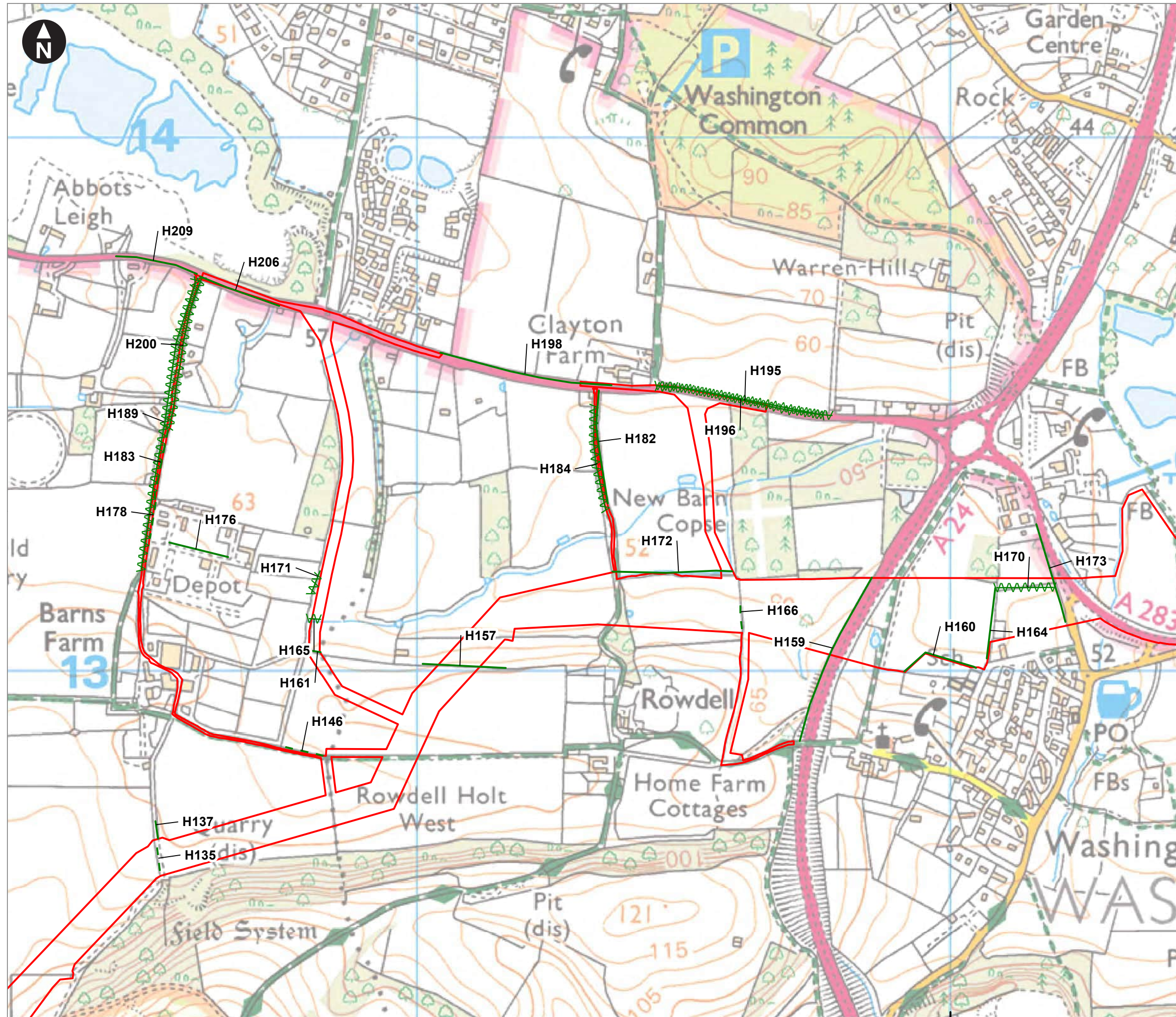

Rampion 2 Offshore Wind Farm
 Figure 3.1 Hedgerows Identified
 Page 9 of 18
 Hedgerow Survey Report

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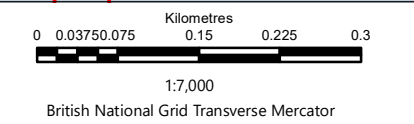
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Key

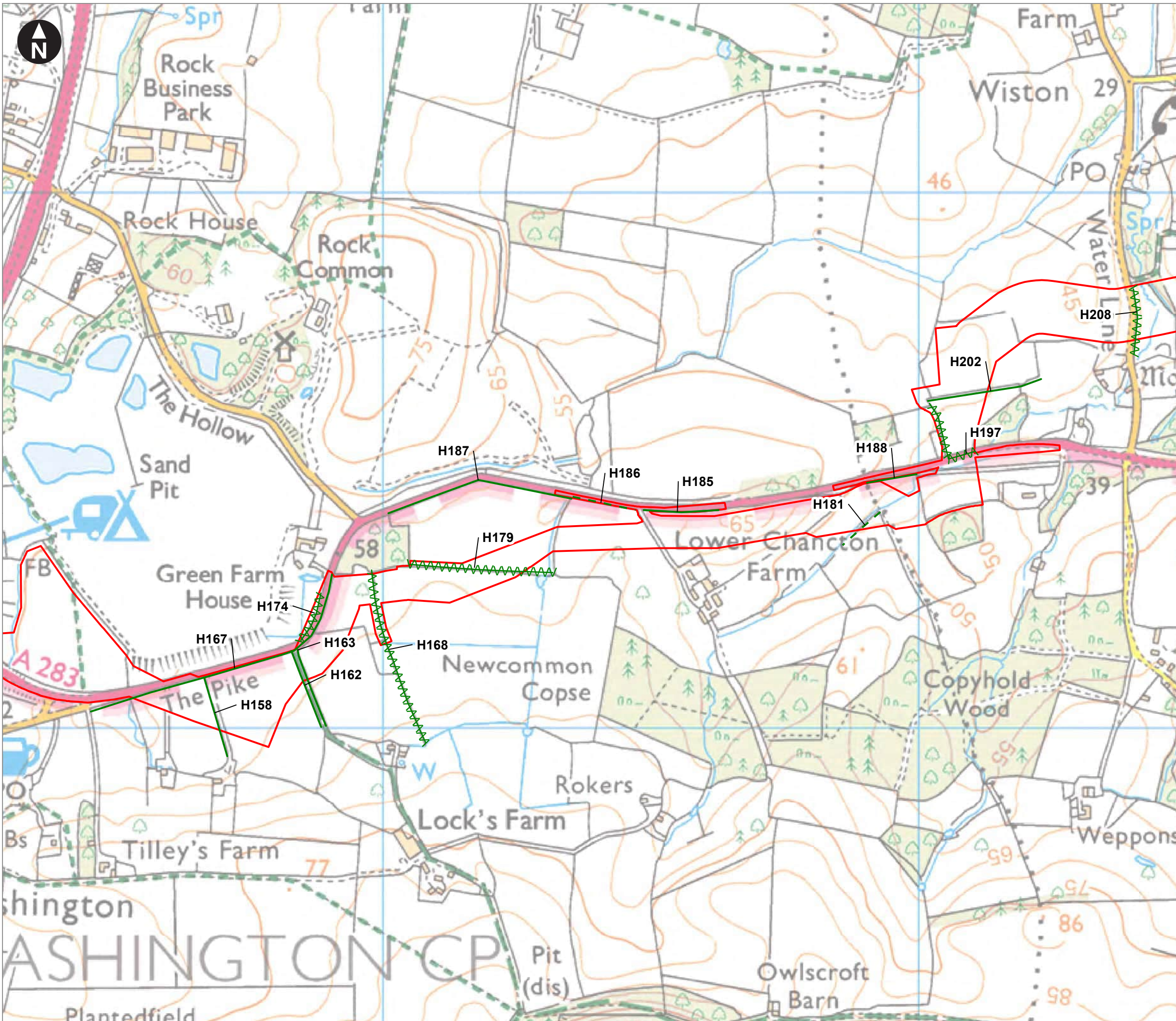
- Proposed DCO Order Limits
- Hedgerow types**
- J2.1.1: Intact hedge native species-rich
- J2.1.2: Intact hedge, native, species poor
- J2.2.1: Defunct hedge native species-rich
- J2.2.2: Defunct hedge native species-poor
- J2.3.1: Hedge and trees native species-rich
- J2.3.2: Hedge and trees native species-poor



Rampion Extension Development

Rampion 2 Offshore Wind Farm
 Figure 3.1 Hedgerows Identified
 Page 10 of 18
 Hedgerow Survey Report

| | | | | |
|---|--------------------|--------------------|---------------------------|------------------|
| System Identifier: 42285-WSPE-ES-ON-FG-OO-9434 | | | | Version: 2.0 |
| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET | Drawn Date: 05/05/2023 | Status: Final |

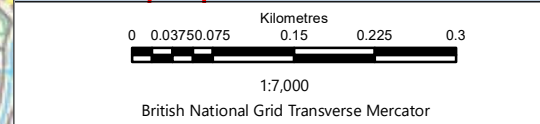


Key

Proposed DCO Order Limits

Hedgerow types

- ~~~~~ J2.1.1: Intact hedge native species-rich
- J2.1.2: Intact hedge, native, species poor
- - - - - J2.2.1: Defunct hedge native species-rich
- - - - - J2.2.2: Defunct hedge native species-poor
- ~~~~~ J2.3.1: Hedge and trees native species-rich
- ||||| J2.3.2: Hedge and trees native species-poor



Rampion Extension Development

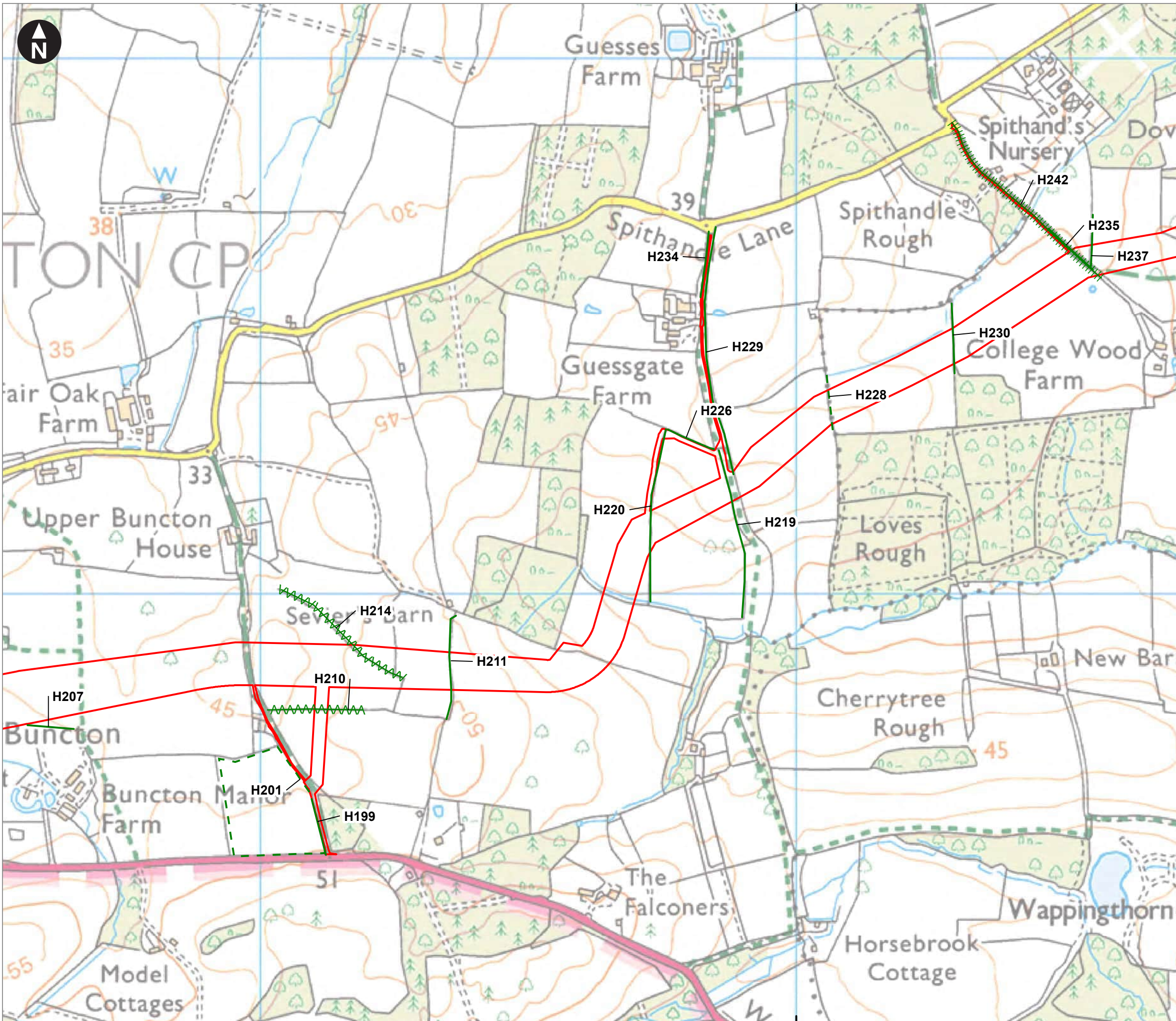
Rampion 2 Offshore Wind Farm

Figure 3.1 Hedgerows Identified

Page 11 of 18

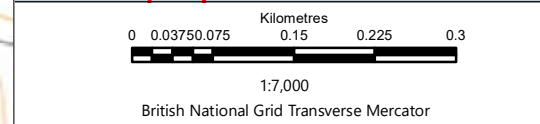
Hedgerow Survey Report

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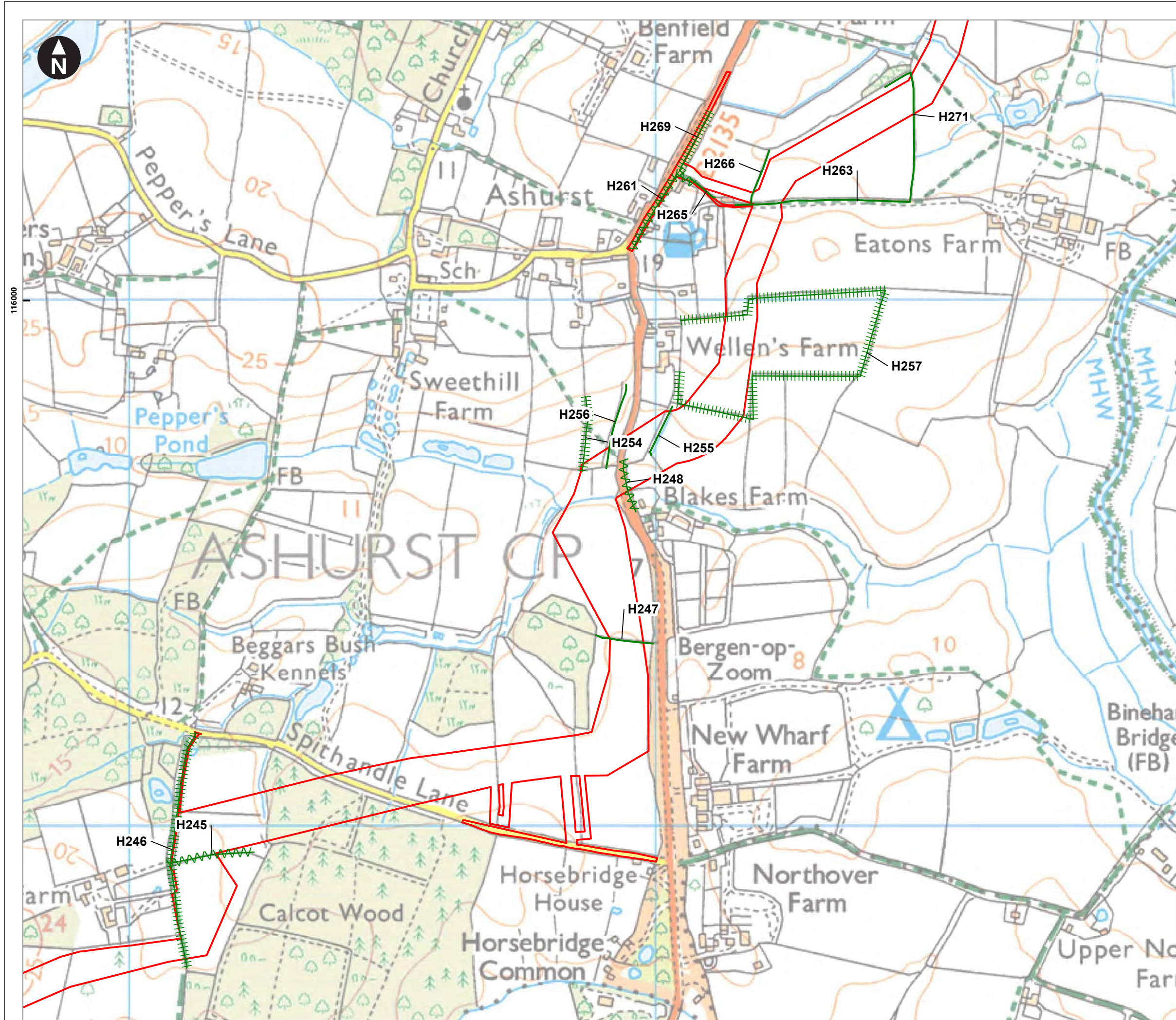
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- Hedgerow types**
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- - - - - J2.2.1: Defunct hedge native species-rich
- - - - - J2.2.2: Defunct hedge native species-poor
- ~~~~~ J2.3.1: Hedge and trees native species-rich
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Rampion Extension Development

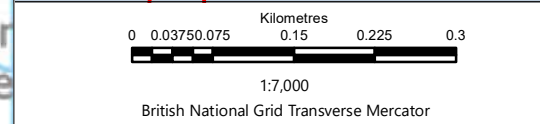
Rampion 2 Offshore Wind Farm
Figure 3.1 Hedgerows Identified
Page 12 of 18
Hedgerow Survey Report

| | | | | |
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| System Identifier: 42285-WSP-ES-ON-FG-OO-9434 | | | | Version: 2.0 |
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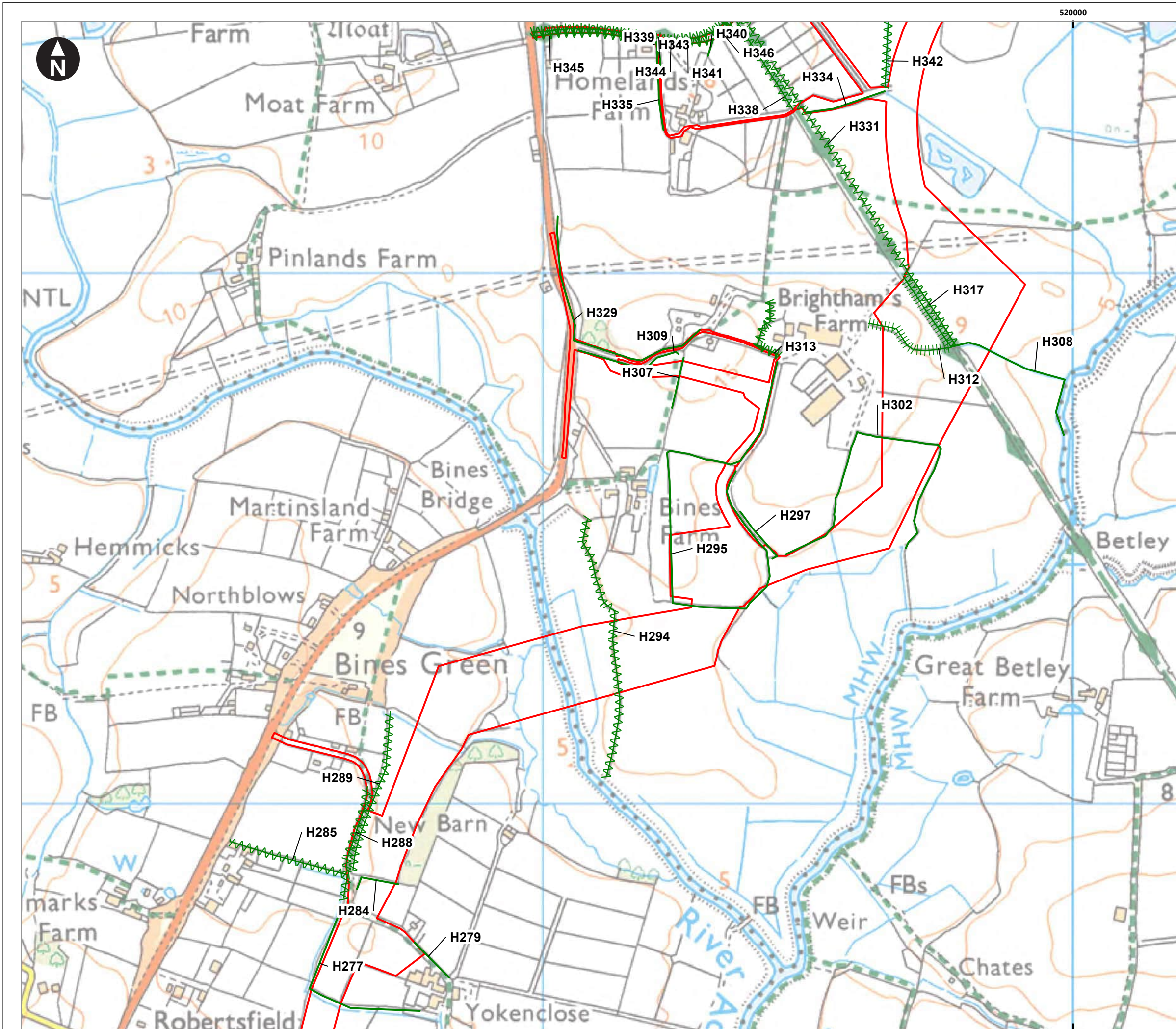
- Proposed DCO Order Limits
- Hedgerow types**
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- J2.1.2: Intact hedge, native, species poor
- - - - - J2.2.1: Defunct hedge native species-rich
- - - - - J2.2.2: Defunct hedge native species-poor
- ~~~~~ J2.3.1: Hedge and trees native species-rich
- ||||| J2.3.2: Hedge and trees native species-poor



Rampion Extension Development

Rampion 2 Offshore Wind Farm
 Figure 3.1 Hedgerows Identified
 Page 13 of 18
 Hedgerow Survey Report

| | | | | |
|--|--------------------|---------------------|---------------------------|------------------|
| System Identifier: 42285-WSP-ES-ON-FG-OO-9434 | | | | Version: 2.0 |
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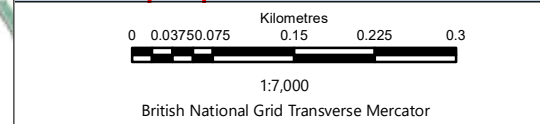
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Key

Proposed DCO Order Limits

Hedgerow types

- ~~~~~ J2.1.1: Intact hedge native species-rich
- J2.1.2: Intact hedge, native, species poor
- - - - - J2.2.1: Defunct hedge native species-rich
- - - - - J2.2.2: Defunct hedge native species-poor
- ~~~~~ J2.3.1: Hedge and trees native species-rich
- ||||| J2.3.2: Hedge and trees native species-poor



Rampion Extension Development

Rampion 2 Offshore Wind Farm

Figure 3.1 Hedgerows Identified

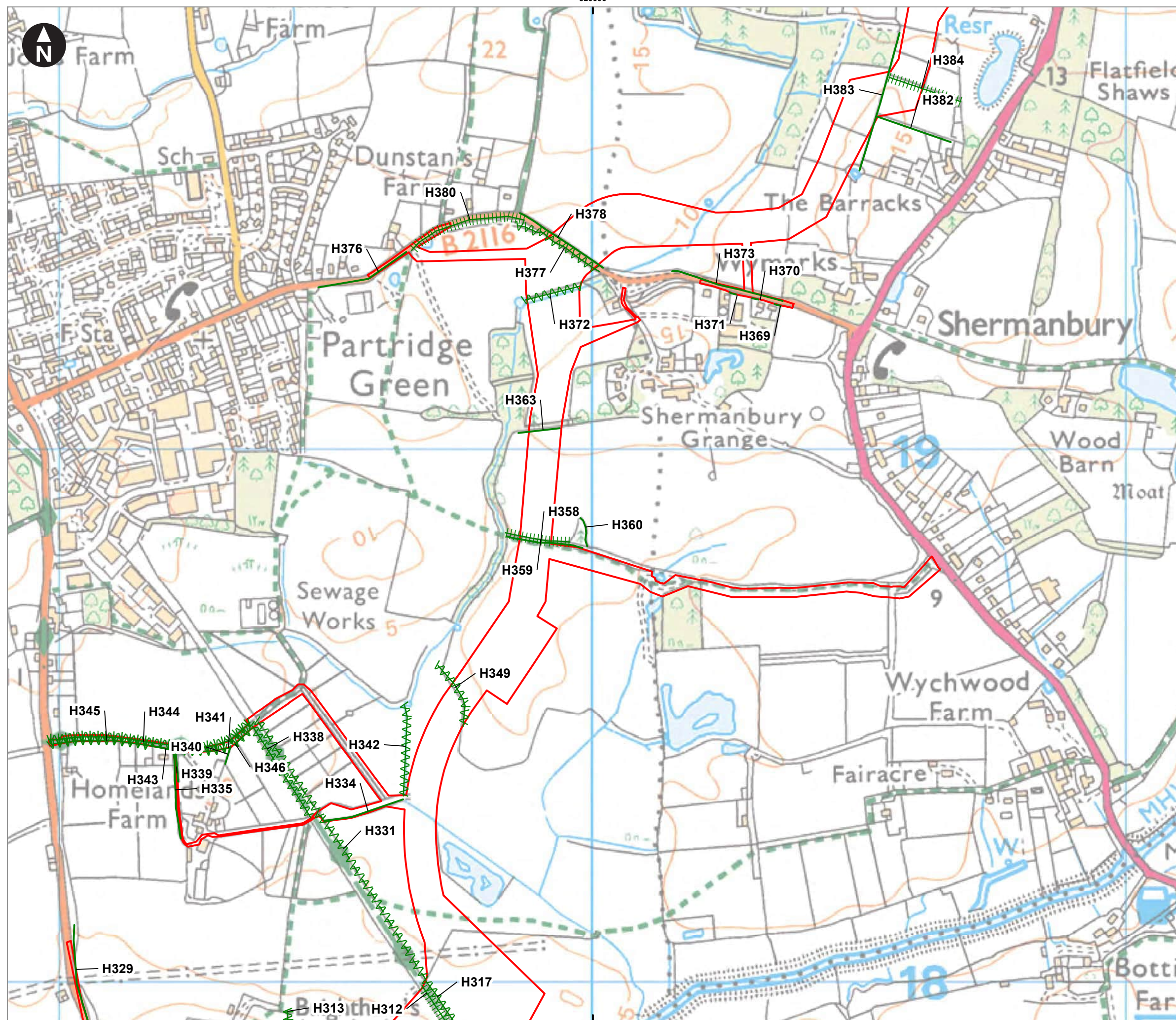
Page 14 of 18

Hedgerow Survey Report

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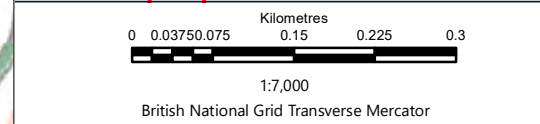


Key

Proposed DCO Order Limits

Hedgerow types

- J2.1.1: Intact hedge native species-rich
- J2.1.2: Intact hedge, native, species poor
- J2.2.1: Defunct hedge native species-rich
- J2.2.2: Defunct hedge native species-poor
- J2.3.1: Hedge and trees native species-rich
- J2.3.2: Hedge and trees native species-poor



Rampion Extension Development

Rampion 2 Offshore Wind Farm

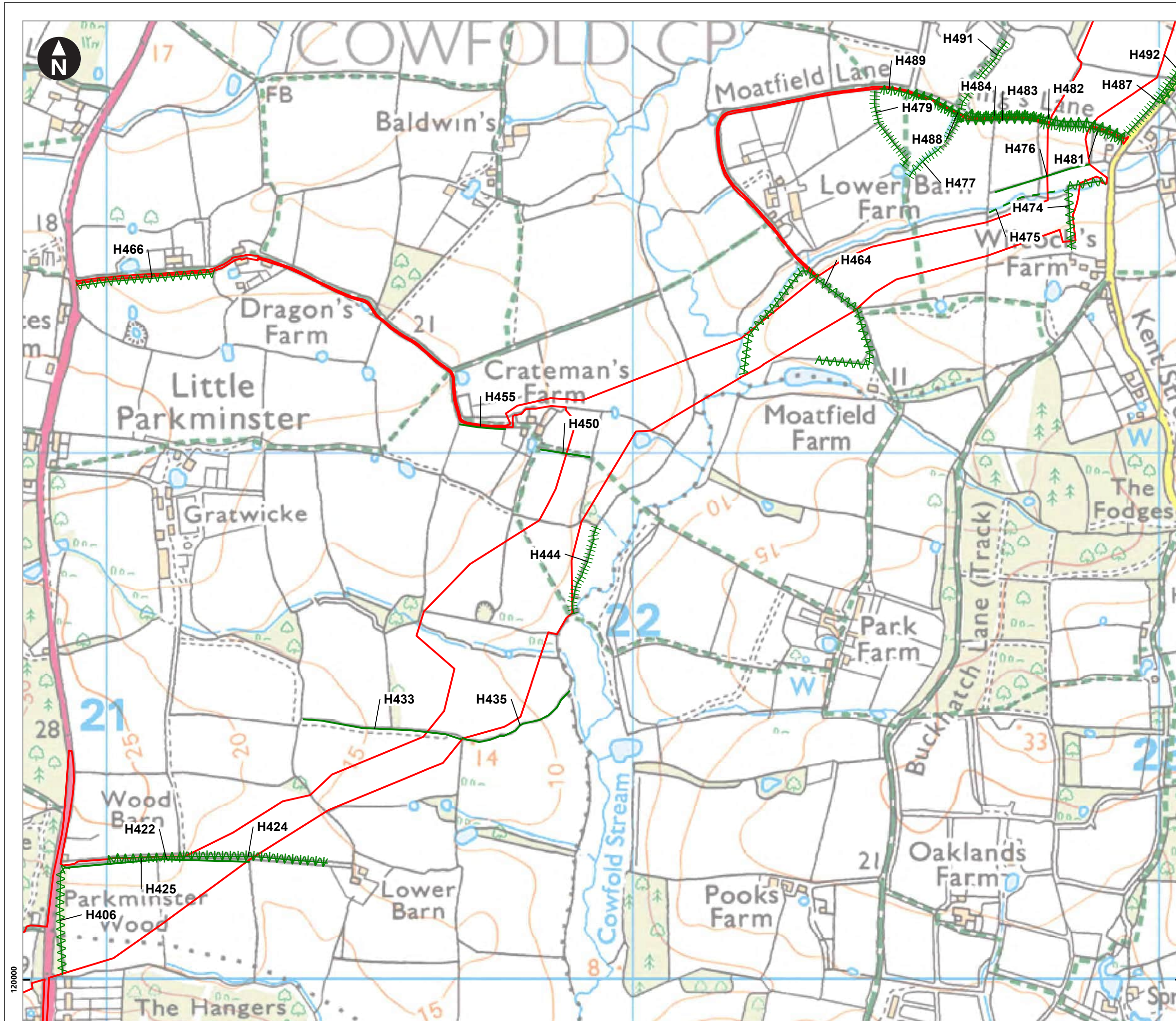
Figure 3.1 Hedgerows Identified

Page 15 of 18

Hedgerow Survey Report

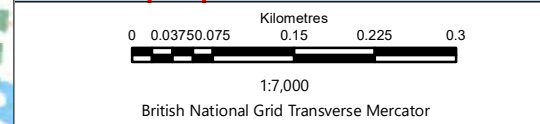
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Key

- Proposed DCO Order Limits
- Hedgerow types**
- J2.1.1: Intact hedge native species-rich
- J2.1.2: Intact hedge, native, species poor
- J2.2.1: Defunct hedge native species-rich
- J2.2.2: Defunct hedge native species-poor
- J2.3.1: Hedge and trees native species-rich
- J2.3.2: Hedge and trees native species-poor

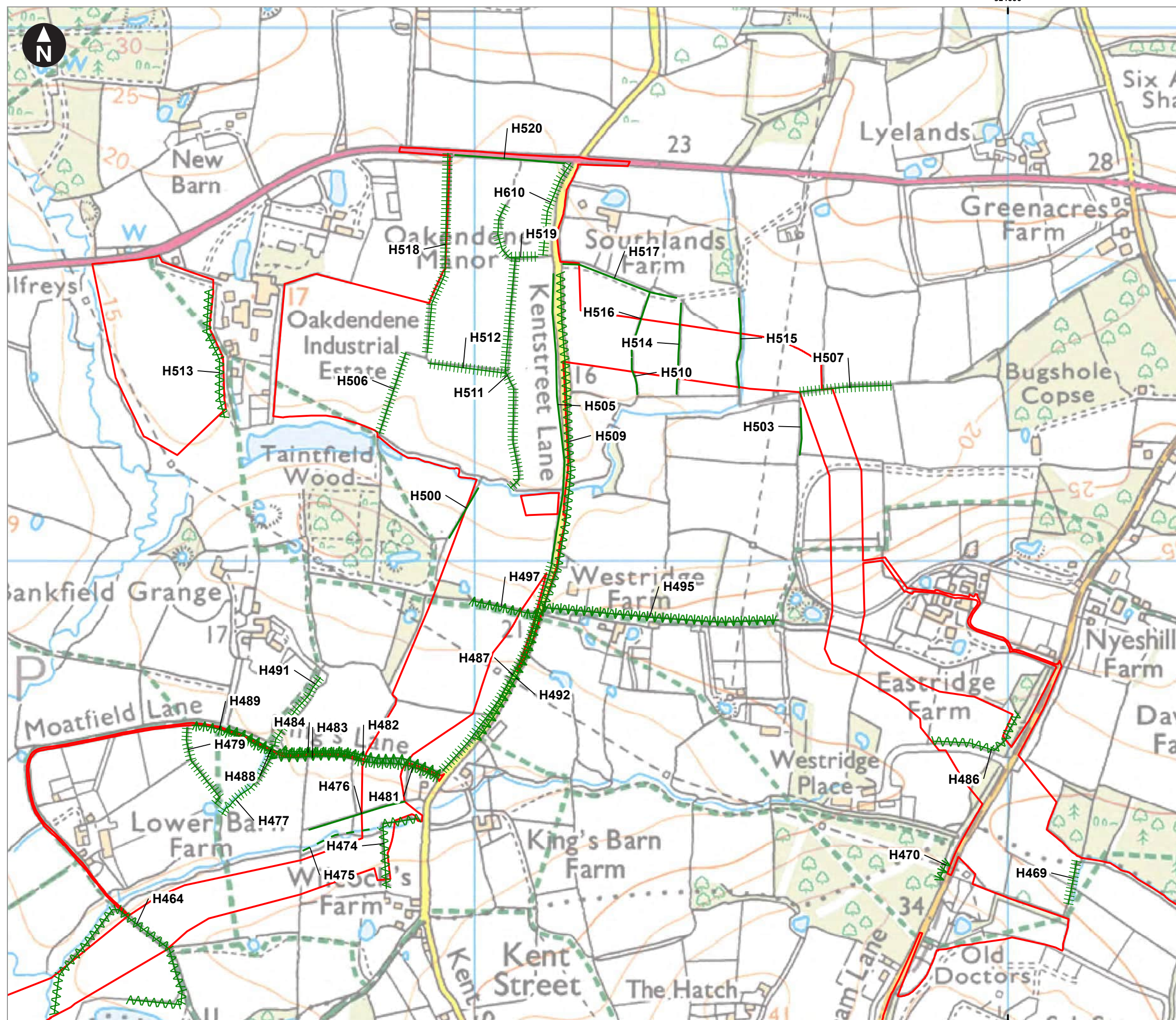


Rampion Extension Development

Rampion 2 Offshore Wind Farm
 Figure 3.1 Hedgerows Identified
 Page 16 of 18
 Hedgerow Survey Report

System Identifier: 42285-WSP-ES-ON-FG-OO-9434
 Version: 2.0

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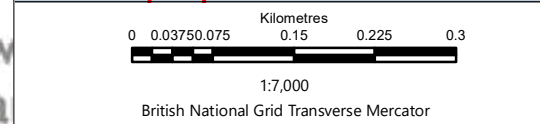


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Proposed DCO Order Limits

Hedgerow types

- J2.1.1: Intact hedge native species-rich
- J2.1.2: Intact hedge, native, species poor
- J2.2.1: Defunct hedge native species-rich
- J2.2.2: Defunct hedge native species-poor
- J2.3.1: Hedge and trees native species-rich
- J2.3.2: Hedge and trees native species-poor



Rampion Extension Development

Rampion 2 Offshore Wind Farm

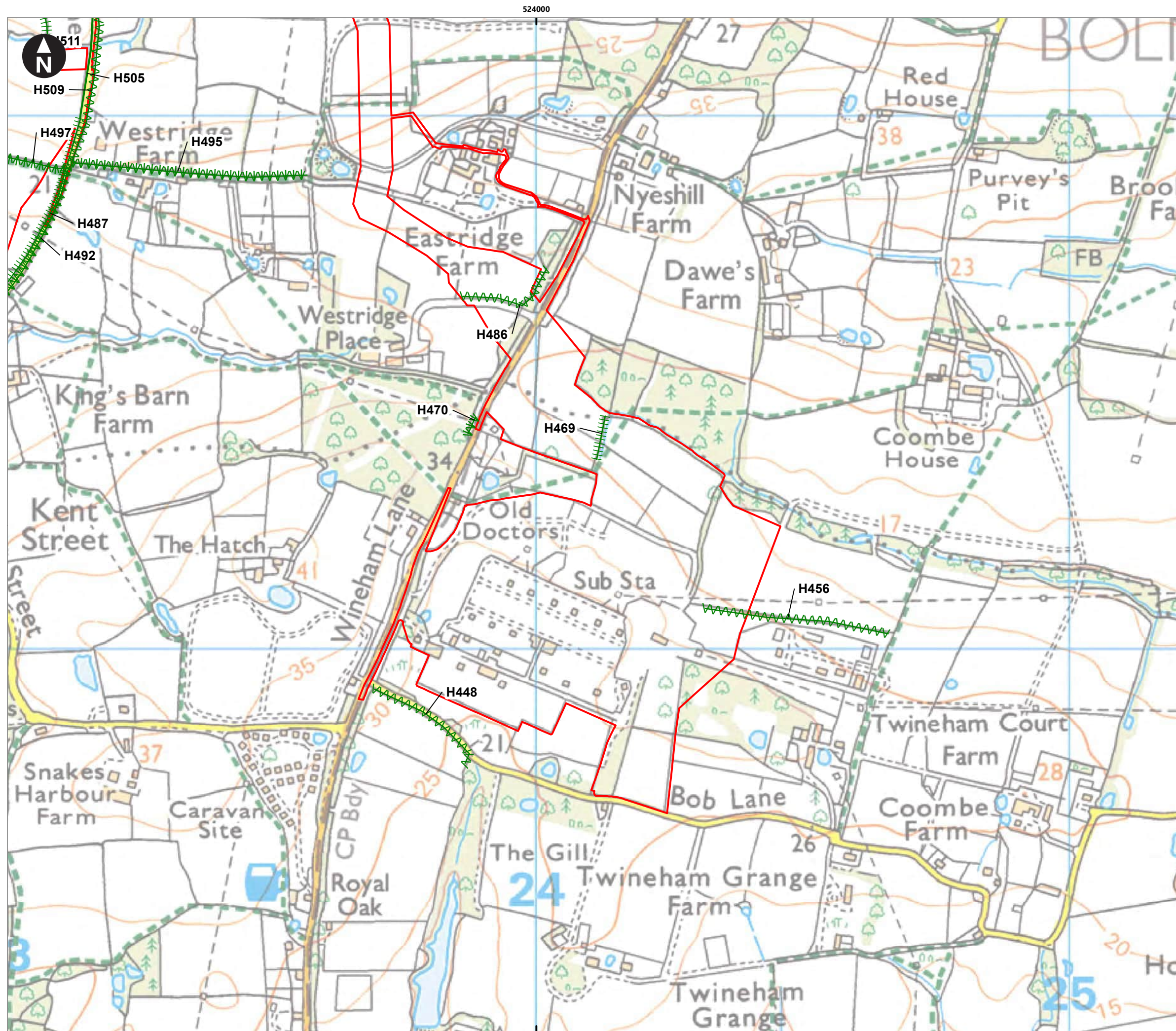
Figure 3.1 Hedgerows Identified

Page 17 of 18

Hedgerow Survey Report

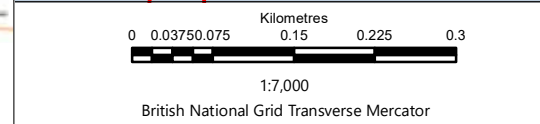
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Key

- Proposed DCO Order Limits
- Hedgerow types**
- ~~~~~ J2.1.1: Intact hedge native species-rich
- J2.1.2: Intact hedge, native, species poor
- - - - - J2.2.1: Defunct hedge native species-rich
- - - - - J2.2.2: Defunct hedge native species-poor
- ~~~~~ J2.3.1: Hedge and trees native species-rich
- ||||| J2.3.2: Hedge and trees native species-poor



Rampion Extension Development

Rampion 2 Offshore Wind Farm

Figure 3.1 Hedgerows Identified

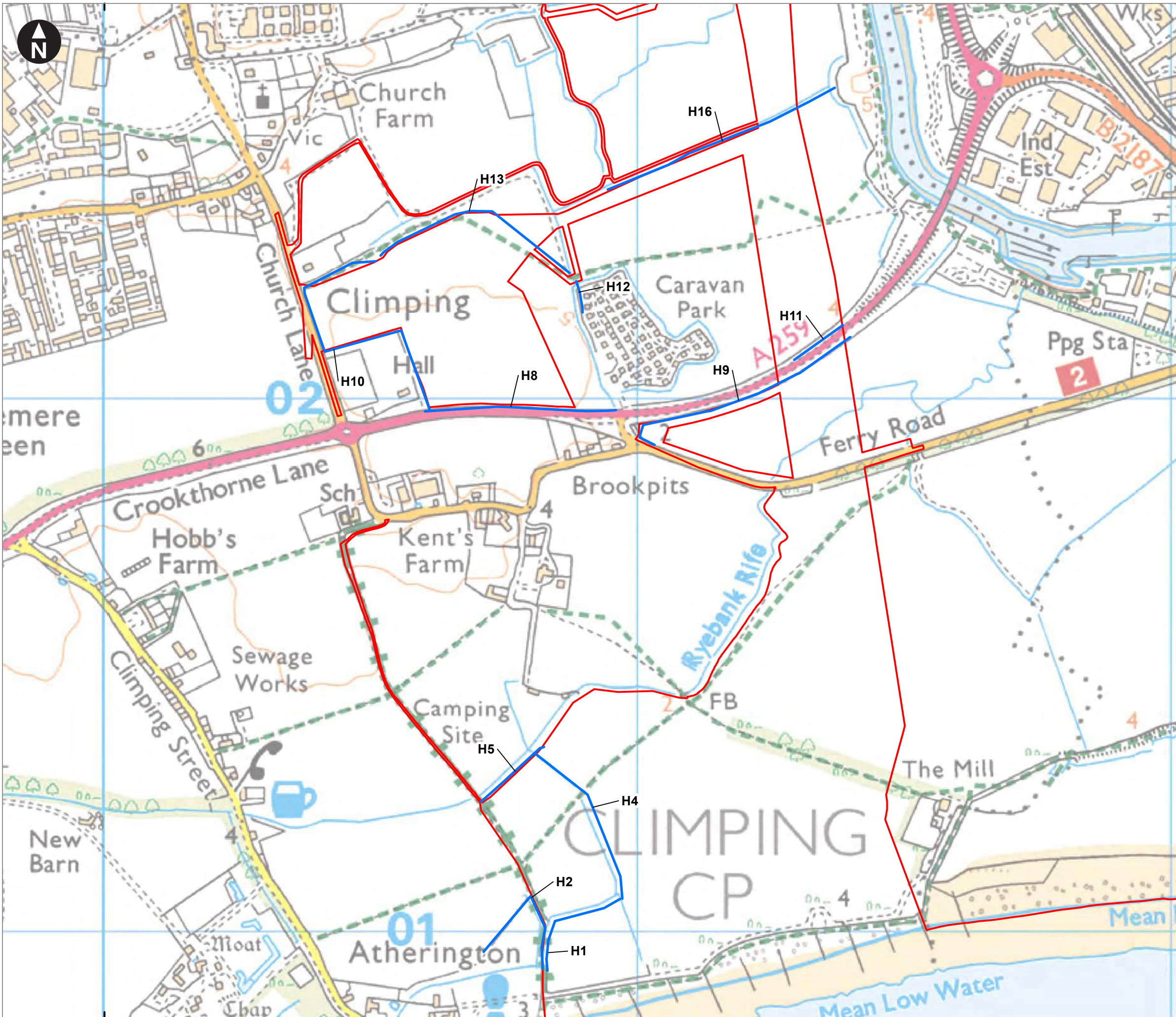
Page 18 of 18

Hedgerow Survey Report

| | | | | |
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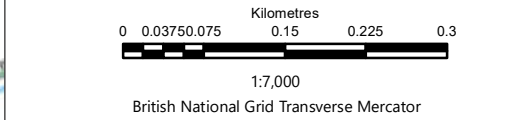
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Proposed DCO Order Limits

Hedge importance

Important

Not Important



Rampion Extension Development

Rampion 2 Offshore Wind Farm

Figure 3.2 Important Hedges

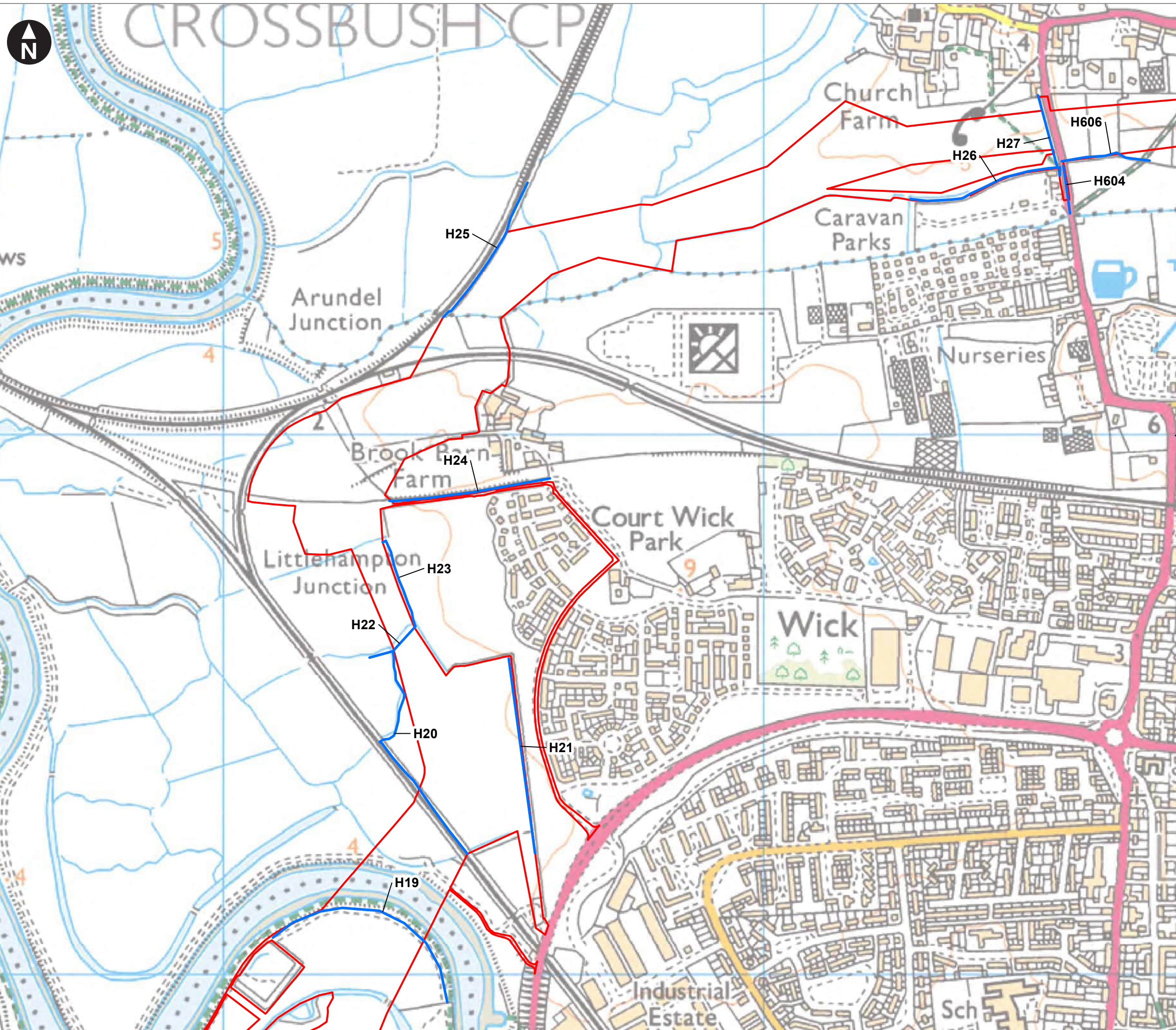
Page 1 of 18

Hedgerow Survey Report

System Identifier: 42285-WSPE-ES-ON-FG-OO-4685

Version: 2.0

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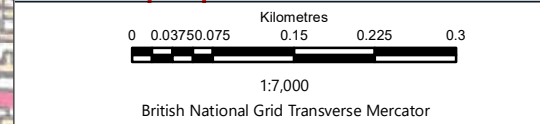
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Proposed DCO Order Limits

Hedge importance

— Important

— Not Important



Rampion Extension Development

Rampion 2 Offshore Wind Farm

Figure 3.2 Important Hedges

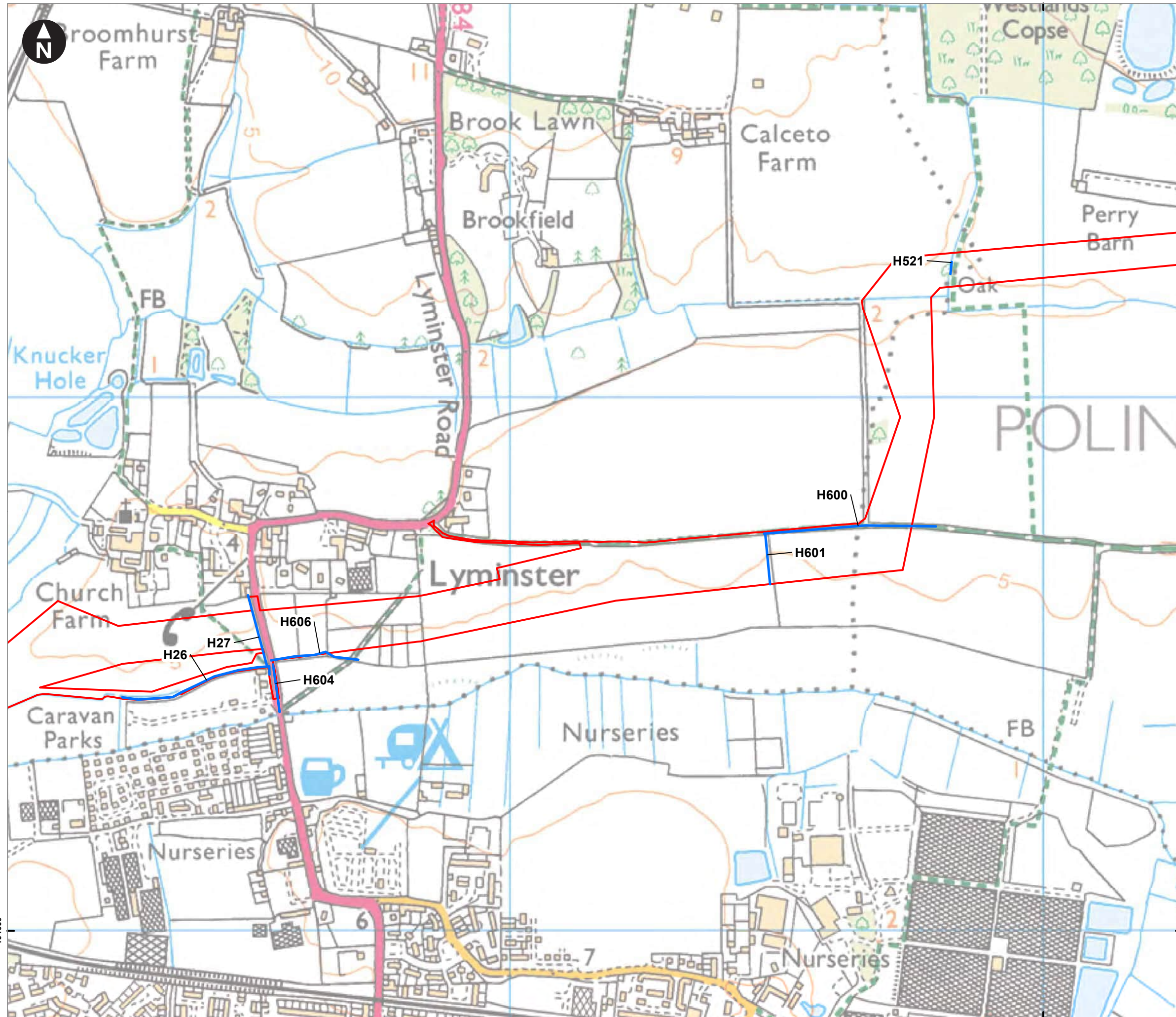
Page 2 of 18

Hedgerow Survey Report


| | | | | |
|---|--------------------|---------------------|---------------------------|------------------|
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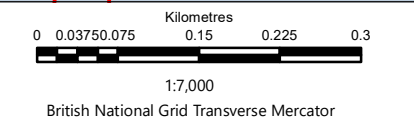
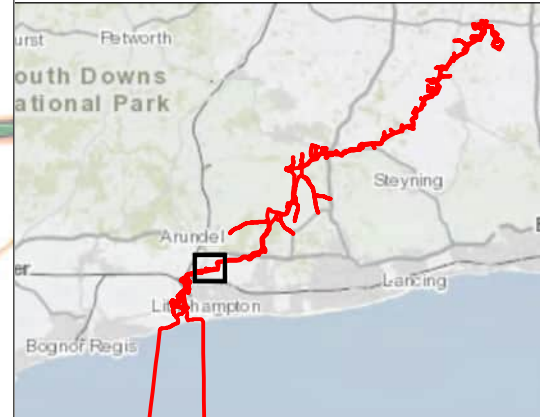
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 Proposed DCO Order Limits

Hedge importance

 Important

 Not Important



Rampion Extension Development



Rampion 2 Offshore Wind Farm

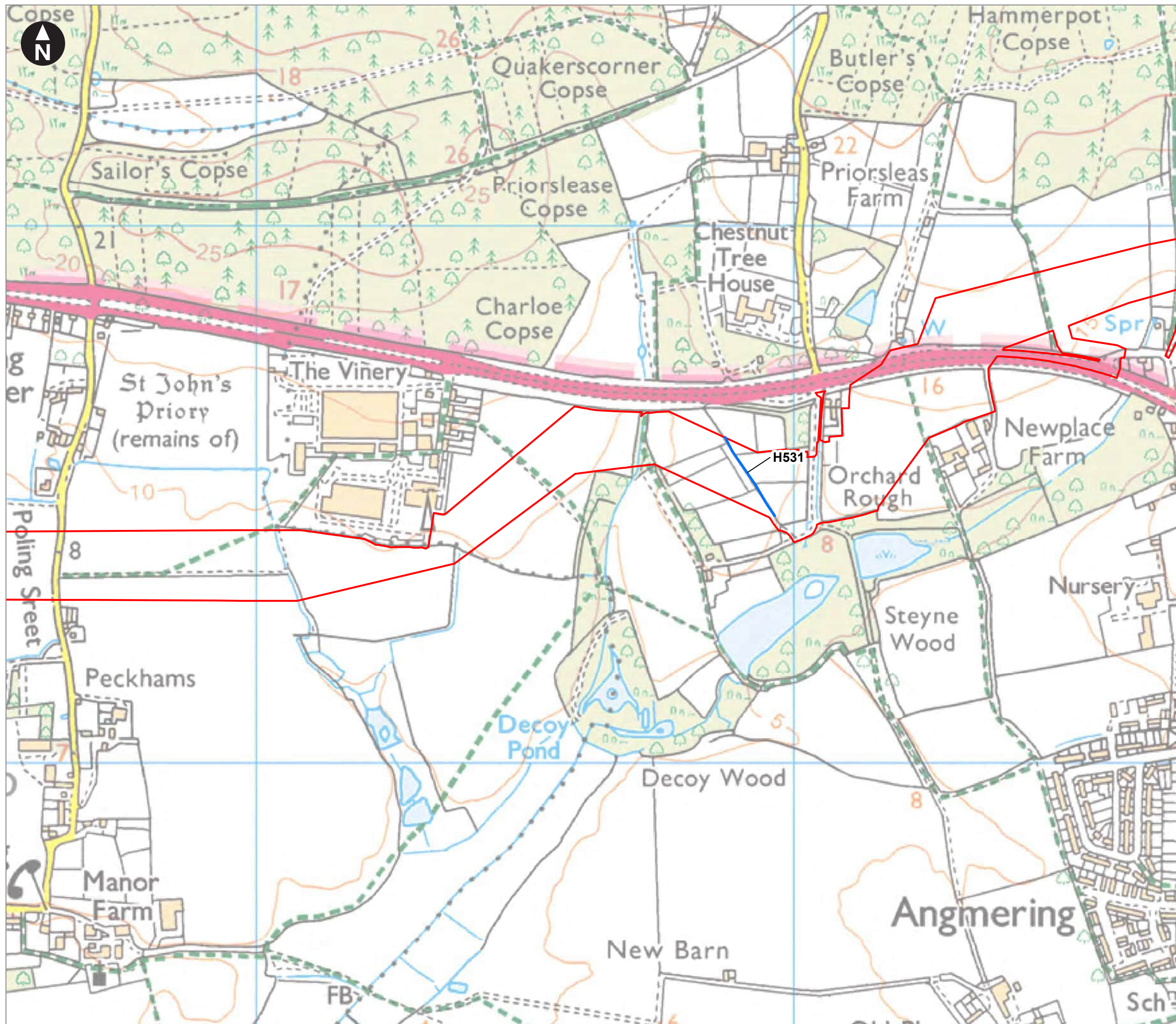
Figure 3.2 Important Hedges

Page 3 of 18

Hedgerow Survey Report

| | | | | |
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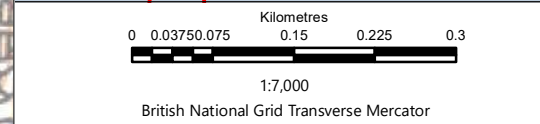
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Proposed DCO Order Limits

Hedge importance

Important

Not Important



Rampion Extension Development

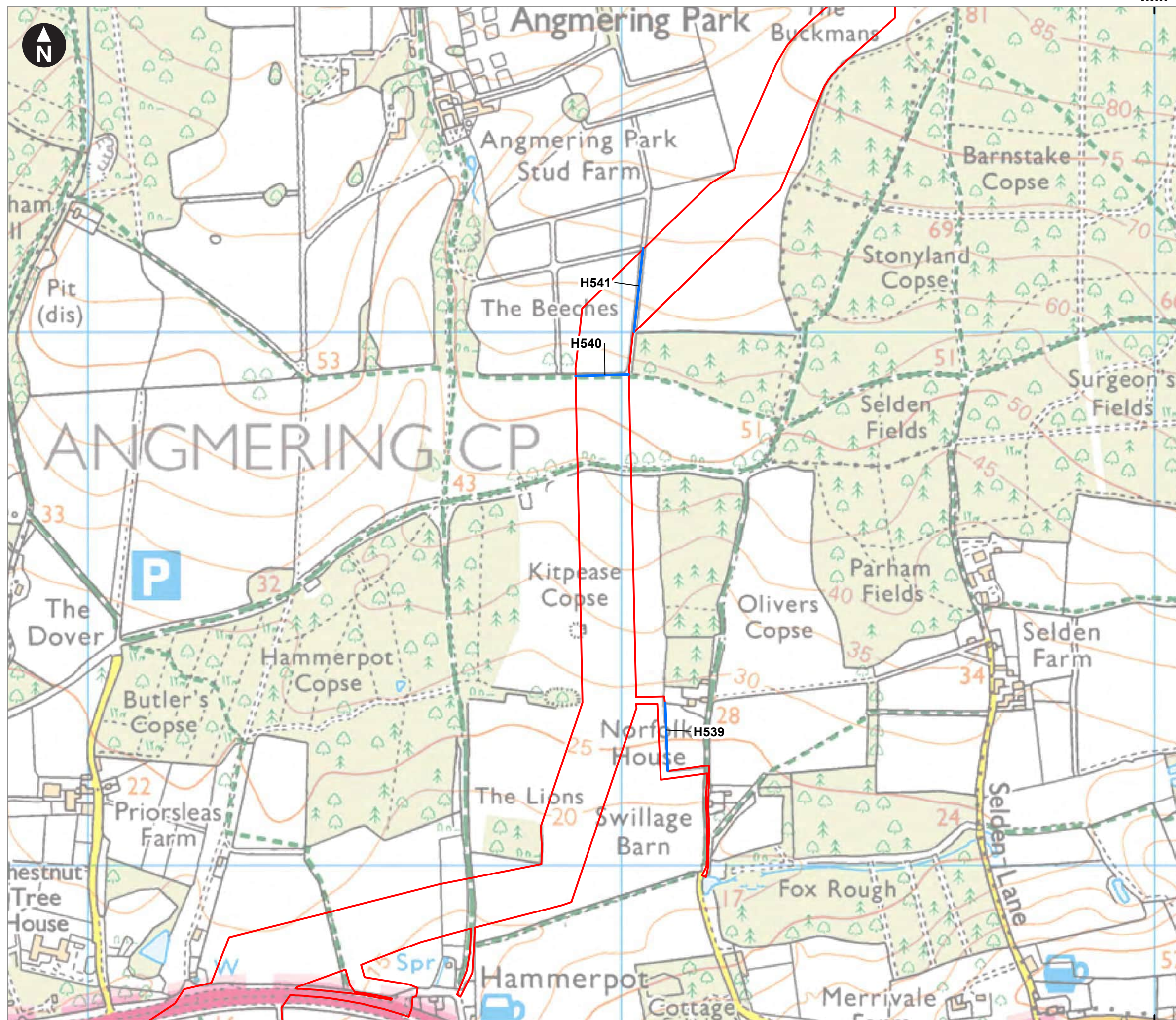
Rampion 2 Offshore Wind Farm

Figure 3.2 Important Hedges

Page 4 of 18

Hedgerow Survey Report

| | | | | |
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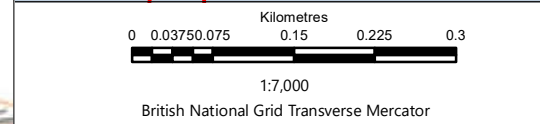
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Proposed DCO Order Limits

Hedge importance

Important

Not Important



Rampion Extension Development

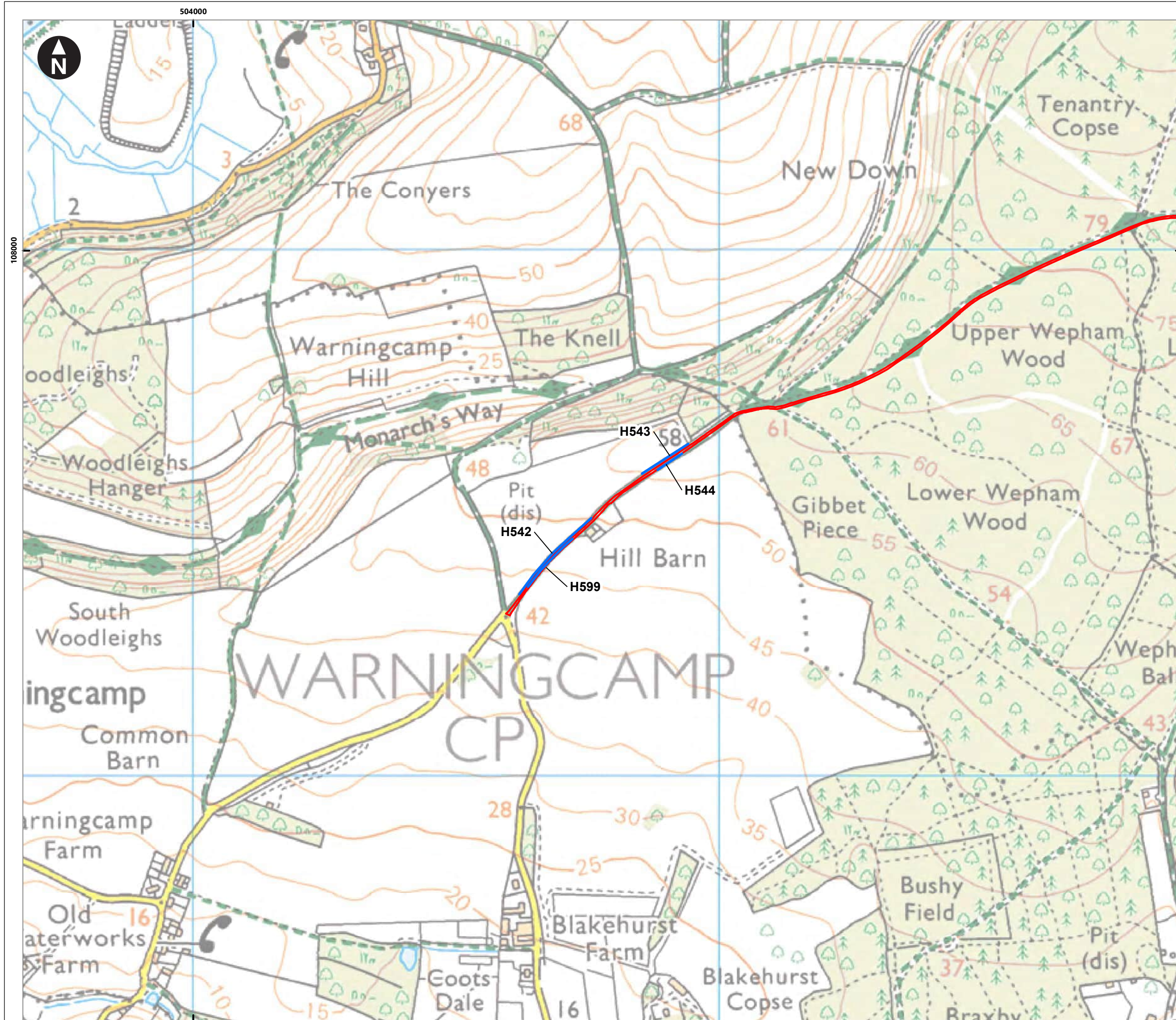
Rampion 2 Offshore Wind Farm

Figure 3.2 Important Hedges

Page 5 of 18

Hedgerow Survey Report

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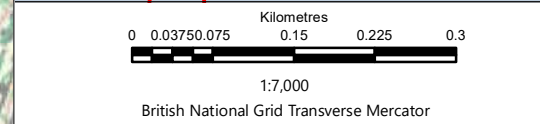
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Proposed DCO Order Limits

Hedge importance

— Important

— Not Important



Rampion Extension Development

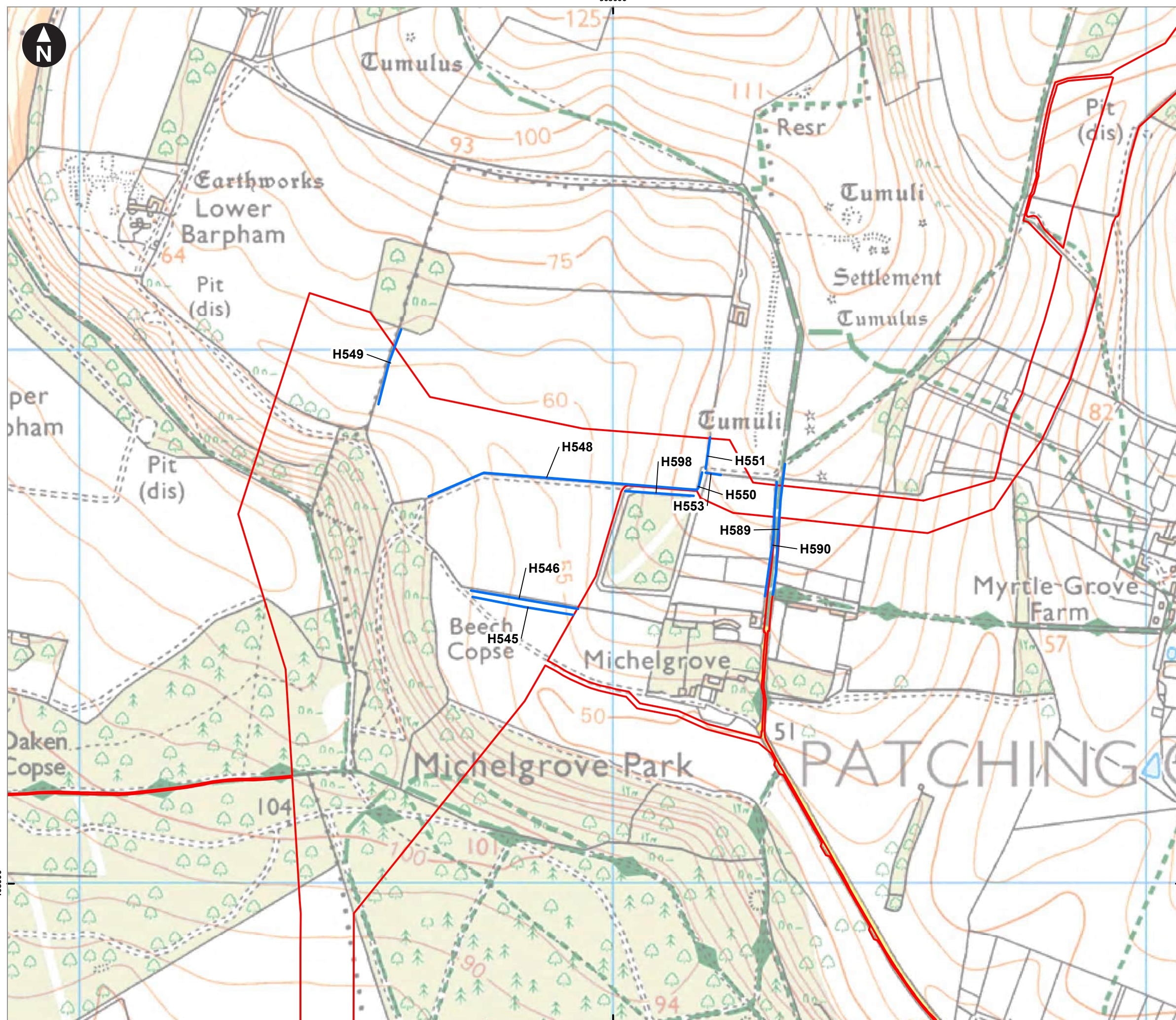
Rampion 2 Offshore Wind Farm

Figure 3.2 Important Hedges

Page 6 of 18

Hedgerow Survey Report

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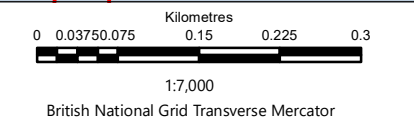
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Proposed DCO Order Limits

Hedge importance

Important

Not Important



Rampion Extension Development

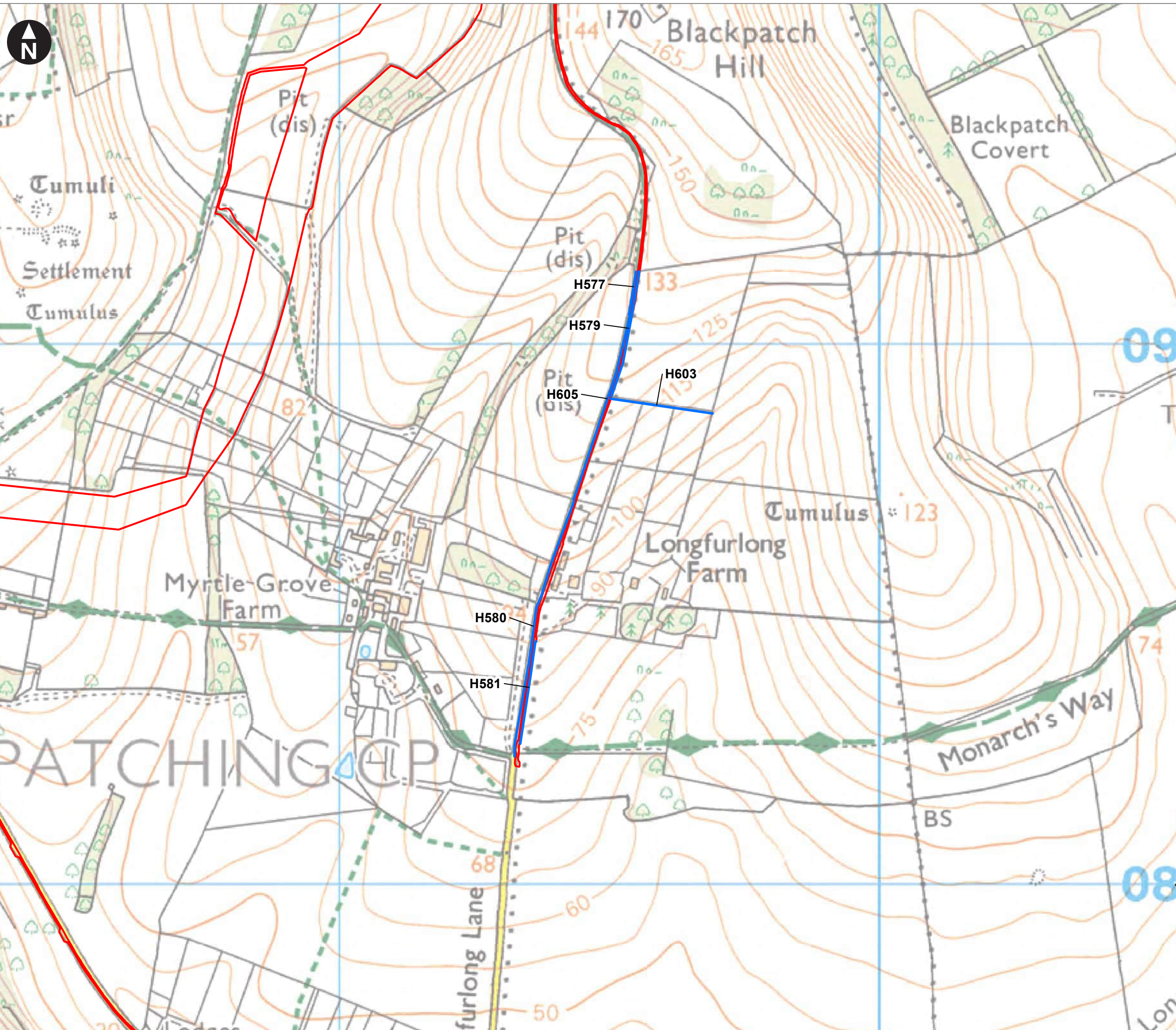
Rampion 2 Offshore Wind Farm

Figure 3.2 Important Hedges

Page 7 of 18

Hedgerow Survey Report

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| System Identifier: 42285-WSPE-ES-ON-FG-OO-4685 | | | | Version: 2.0 |
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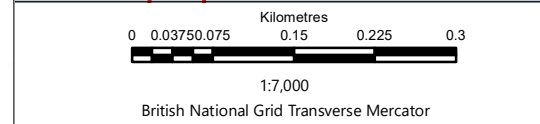
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Proposed DCO Order Limits

Hedge importance

— Important

— Not Important



Rampion Extension Development

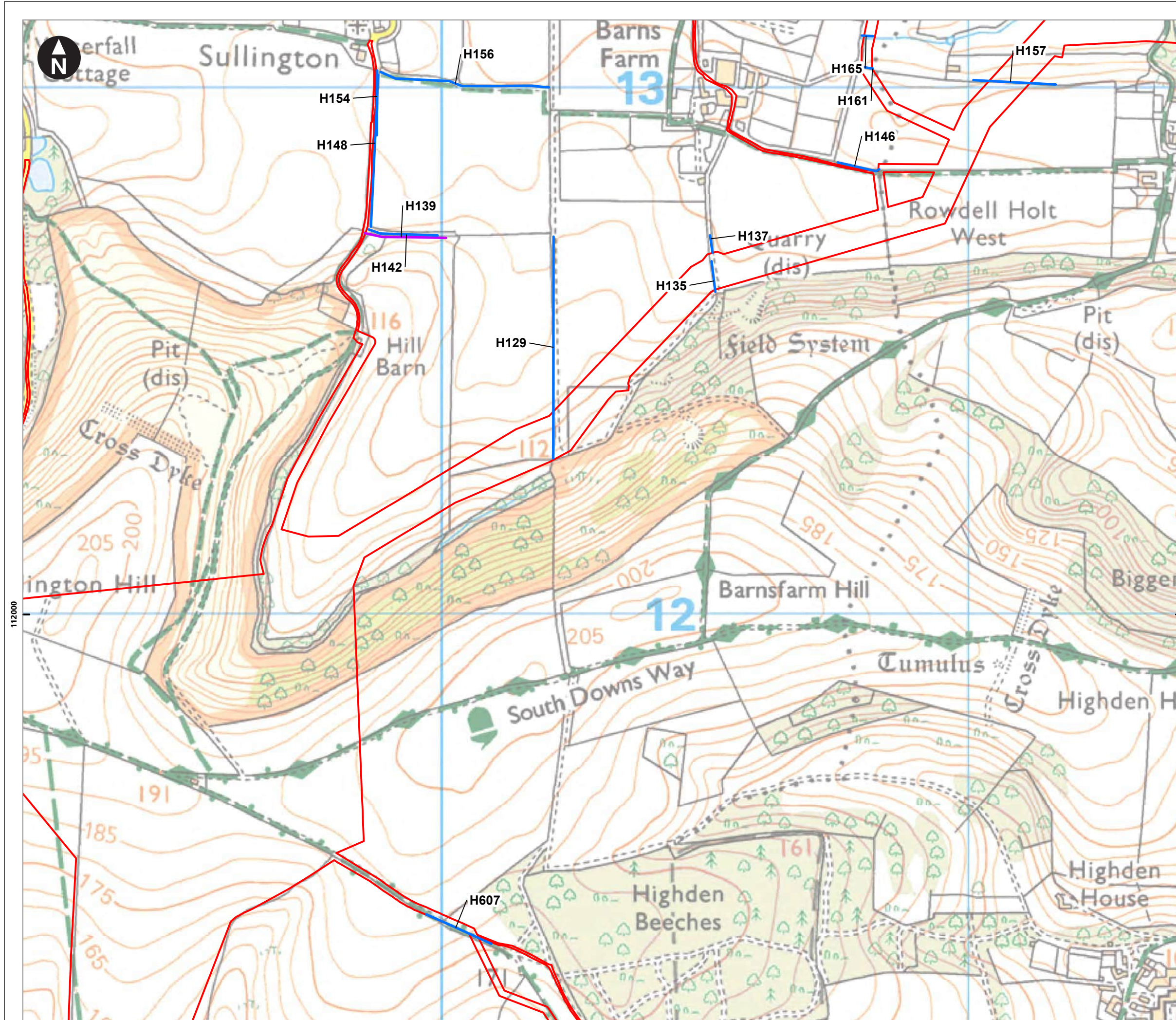
Rampion 2 Offshore Wind Farm

Figure 3.2 Important Hedges

Page 8 of 18

Hedgerow Survey Report

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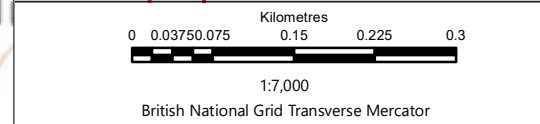
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Proposed DCO Order Limits

Hedge importance

— Important

— Not Important



Rampion Extension Development

Rampion 2 Offshore Wind Farm

Figure 3.2 Important Hedges

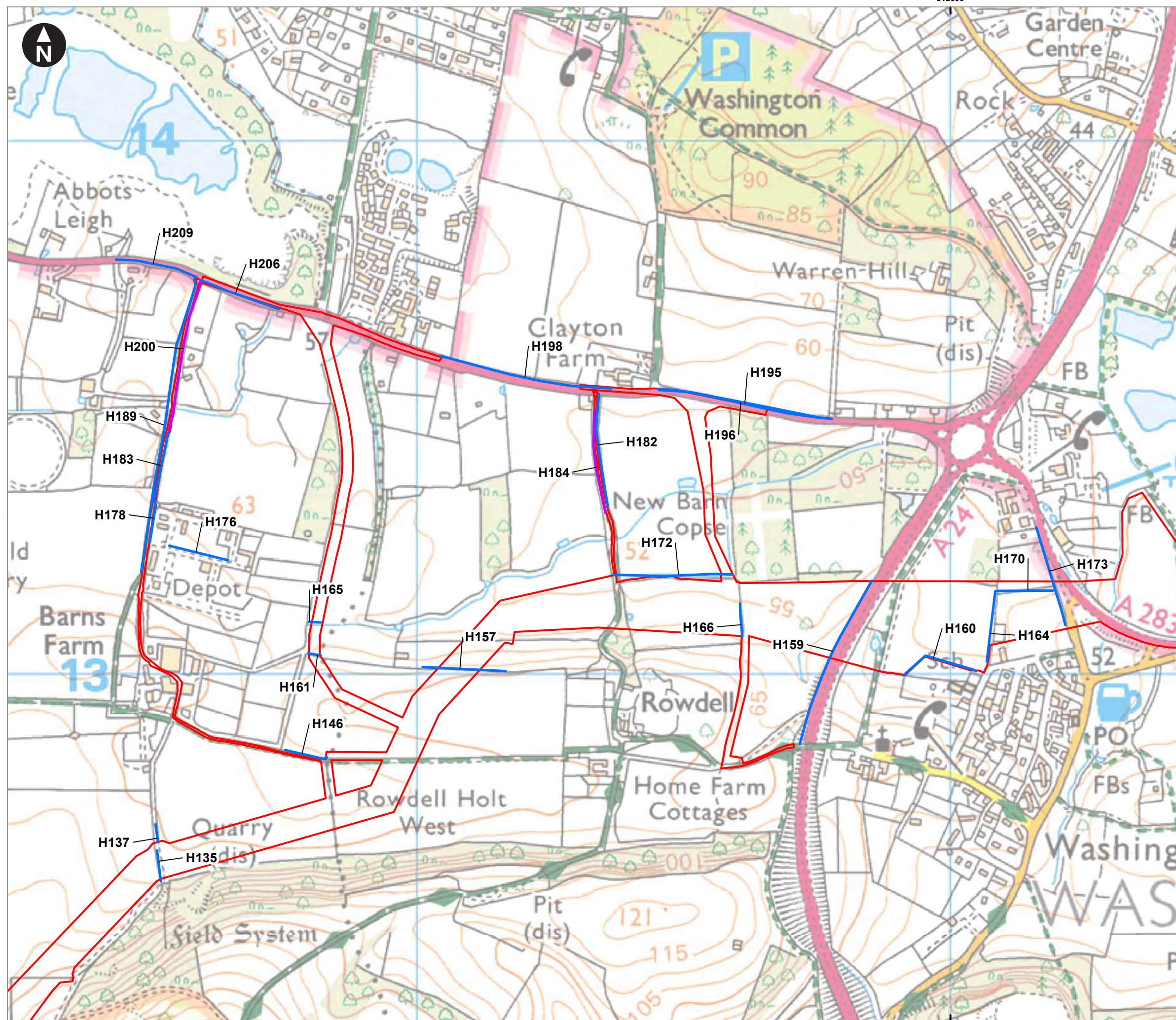
Page 9 of 18

Hedgerow Survey Report


| | | | | |
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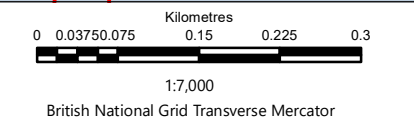
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 Proposed DCO Order Limits

Hedge importance

 Important

 Not Important



Rampion Extension Development



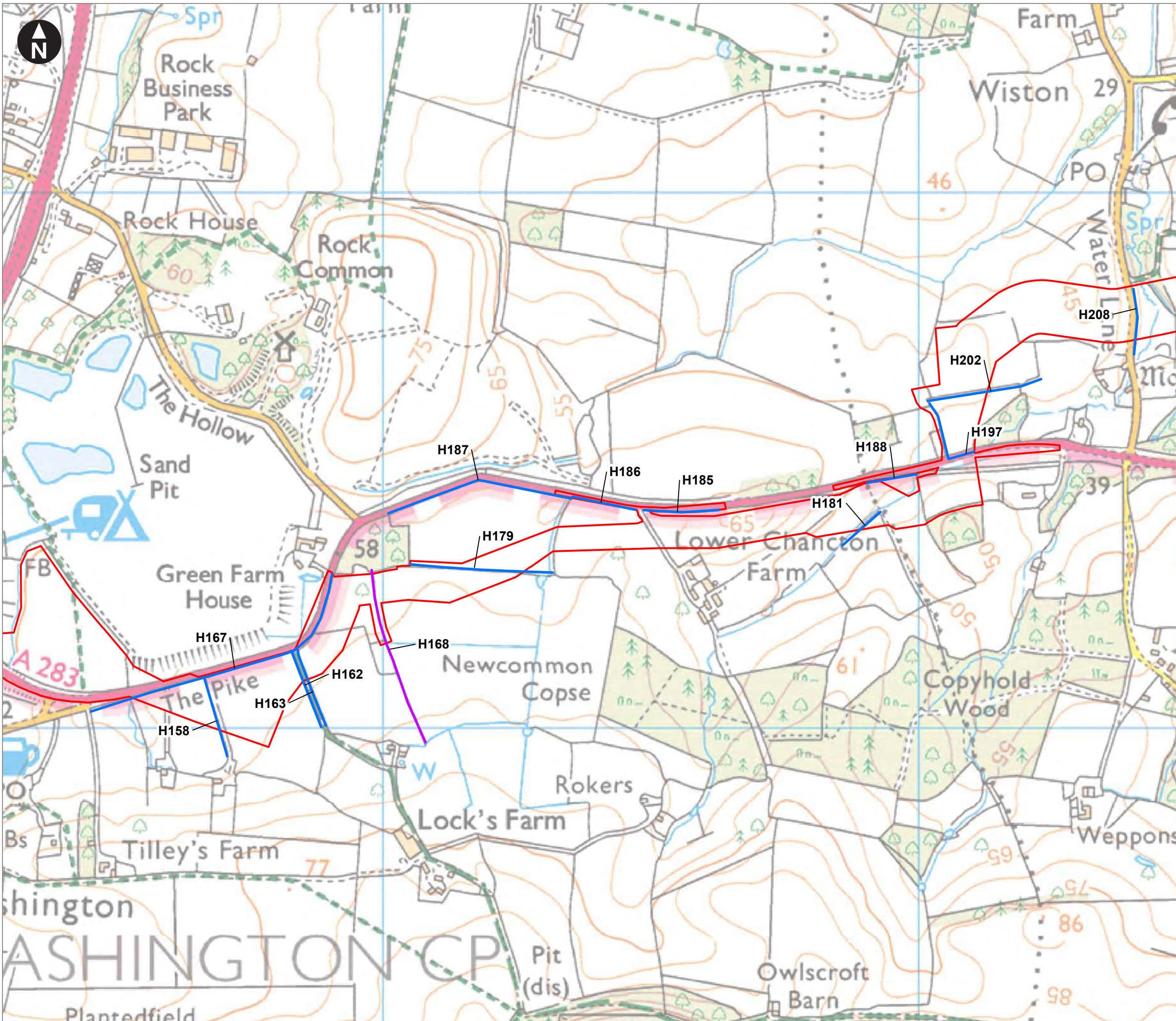
Rampion 2 Offshore Wind Farm

Figure 3.2 Important Hedges

Page 10 of 18

Hedgerow Survey Report

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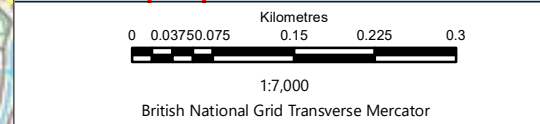
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Proposed DCO Order Limits

Hedge importance

— Important

— Not Important



Rampion Extension Development

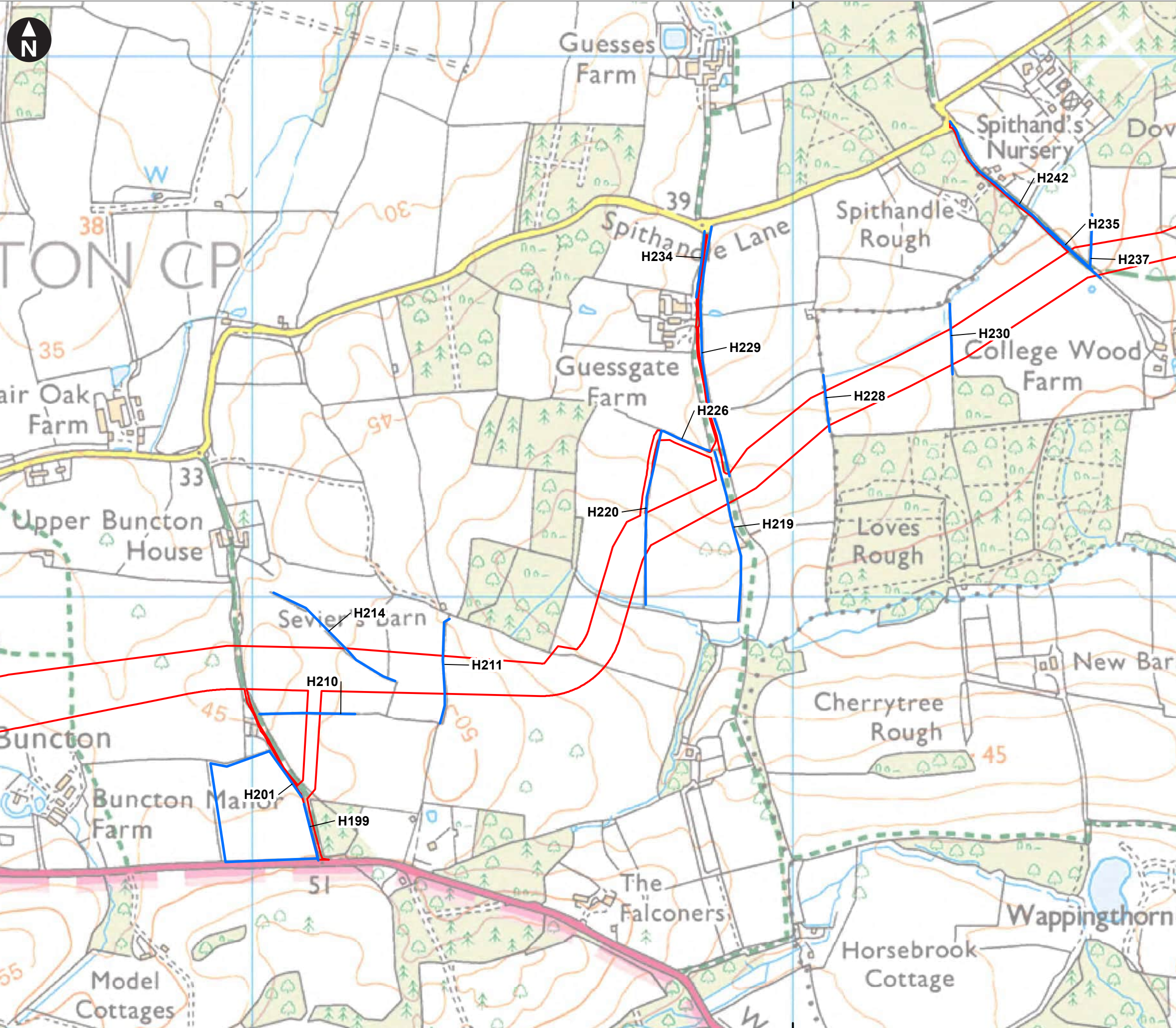
Rampion 2 Offshore Wind Farm

Figure 3.2 Important Hedges

Page 11 of 18

Hedgerow Survey Report

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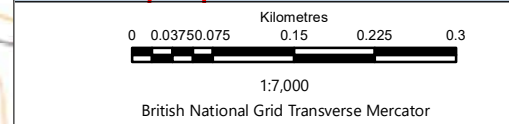
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Proposed DCO Order Limits

Hedge importance

— Important

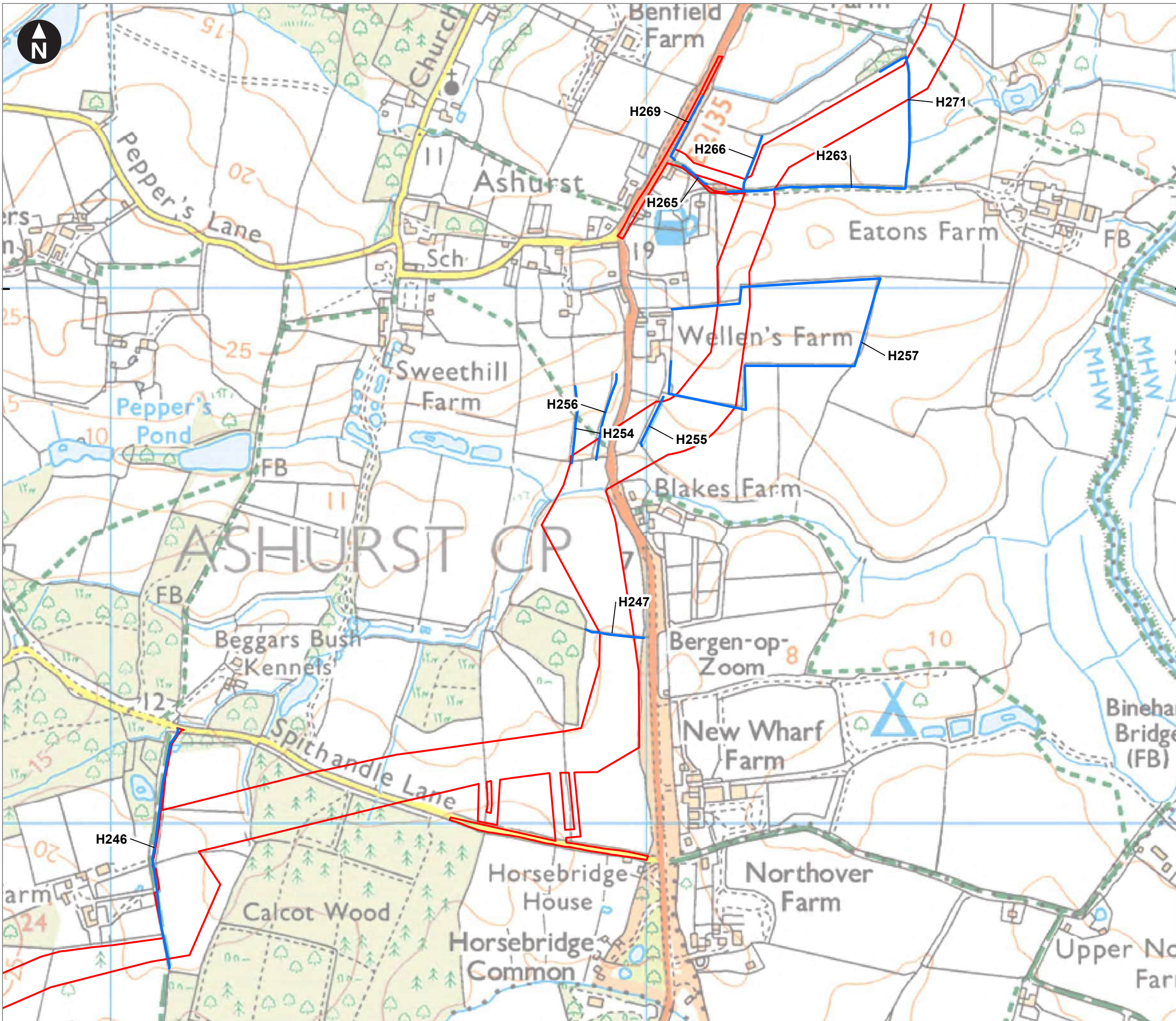
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Rampion Extension Development

Rampion 2 Offshore Wind Farm
Figure 3.2 Important Hedges
Page 12 of 18
Hedgerow Survey Report

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|--|--------------------|--------------------|---------------------------|------------------|
| System Identifier: 42285-WSP-ES-ON-FG-OO-4685 | | | | Version: 2.0 |
| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET | Drawn Date: 02/05/2023 | Status: Final |



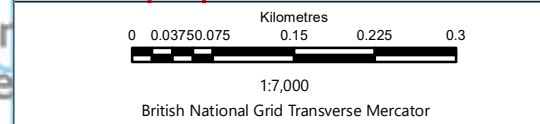
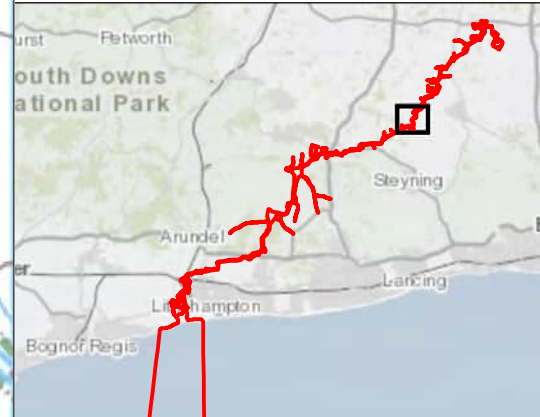
Key

Proposed DCO Order Limits

Hedge importance

Important

Not Important



Rampion Extension Development

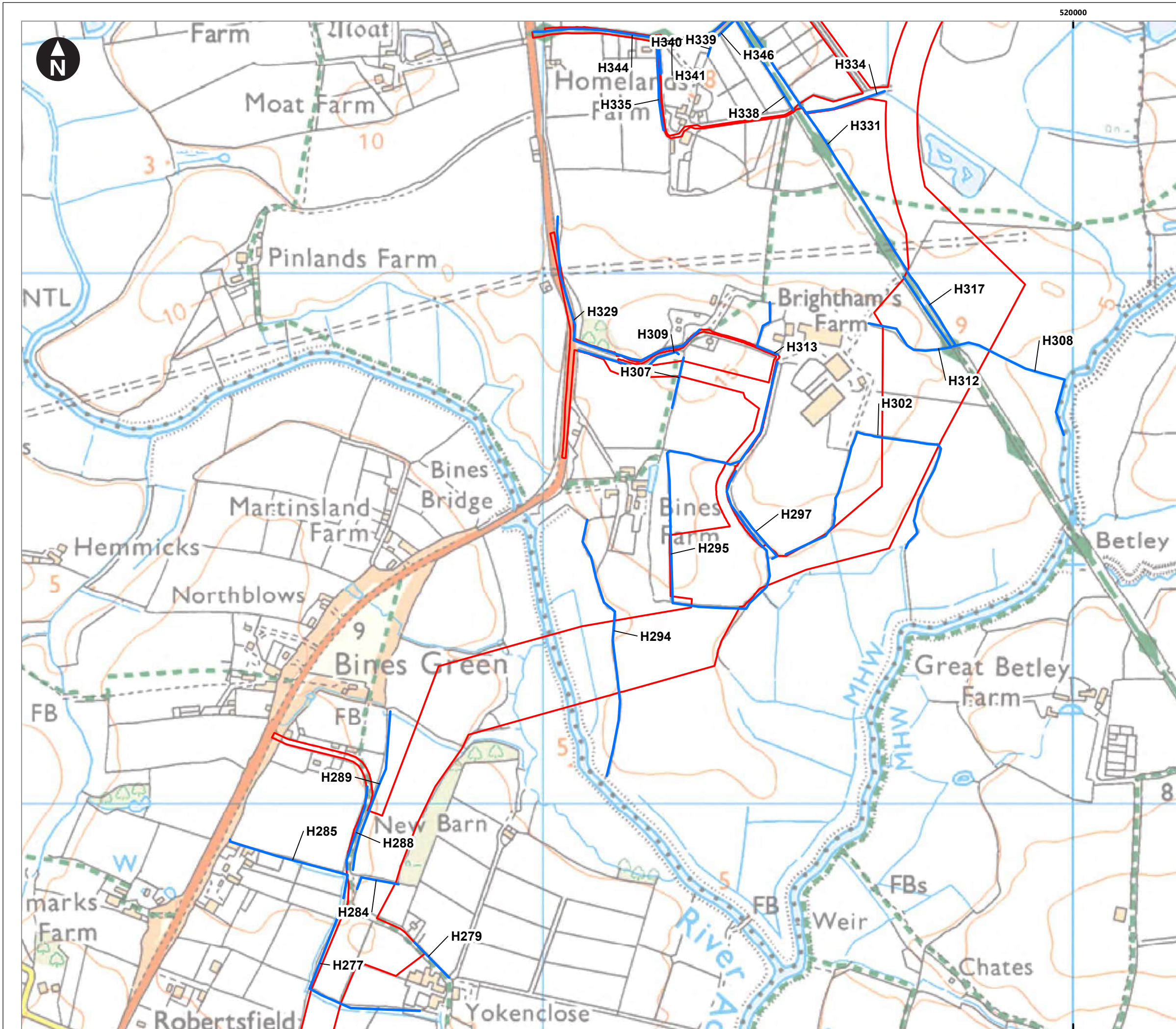
Rampion 2 Offshore Wind Farm

Figure 3.2 Important Hedges

Page 13 of 18

Hedgerow Survey Report

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|--|--------------------|---------------------|---------------------------|------------------|
| System Identifier: 42285-WSP-ES-ON-FG-OO-4685 | | | | Version: 2.0 |
| Company: WSP | Drawn By: HADJE | Chk/Prvrd: SUTET | Drawn Date: 02/05/2023 | Status: Final |



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Key

Proposed DCO Order Limits

Hedge importance

- Important
- Not Important

0 0.03750.075 0.15 0.225 0.3
 Kilometres
 1:7,000
 British National Grid Transverse Mercator

Rampion Extension Development

Rampion 2 Offshore Wind Farm

Figure 3.2 Important Hedges

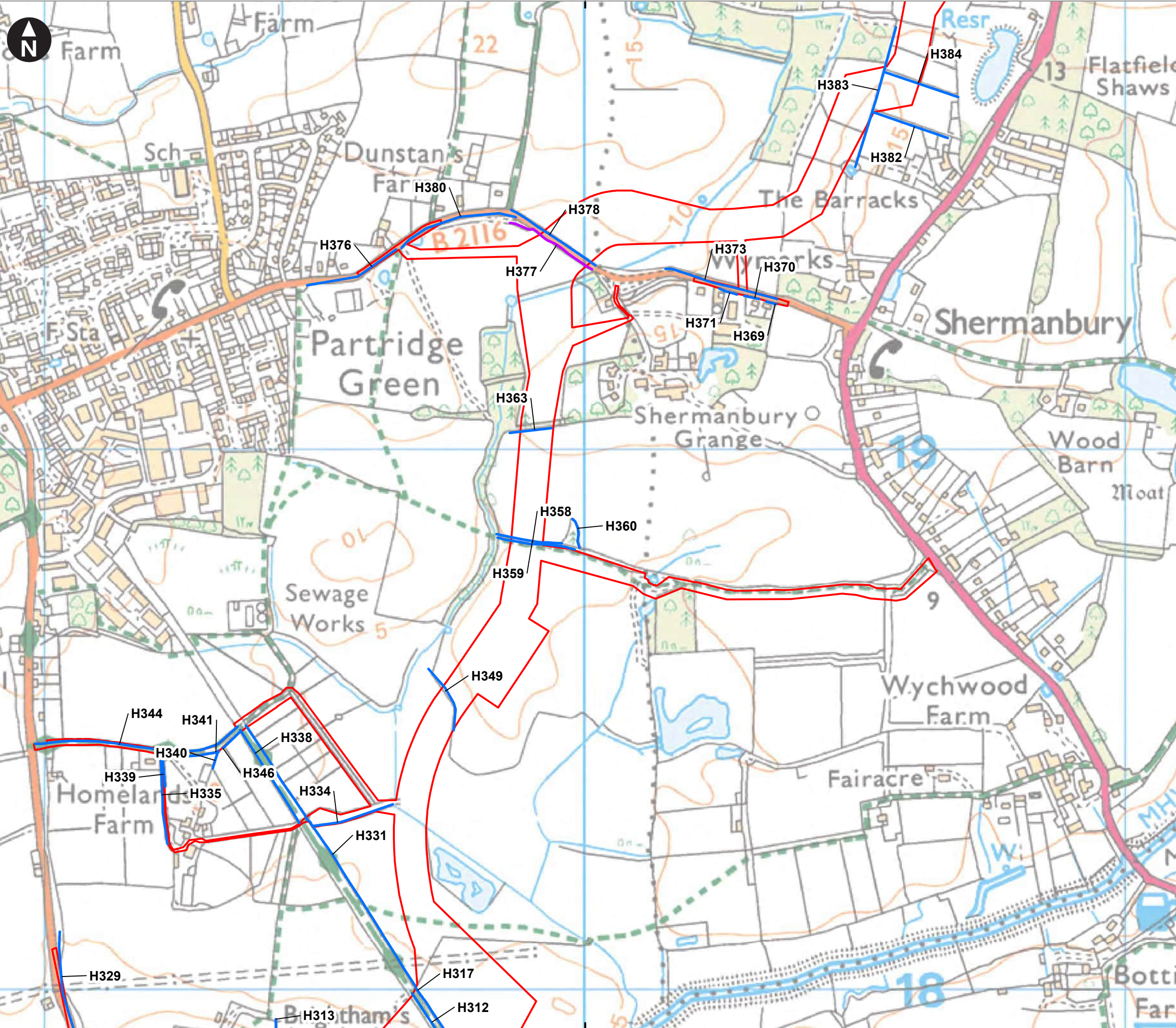
Page 14 of 18

Hedgerow Survey Report

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| System Identifier: 42285-WSPE-ES-ON-FG-OO-4685 | | | Version: 2.0 |
| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET | Drawn Date: 02/05/2023 |
| Status: Final | | | |

520000

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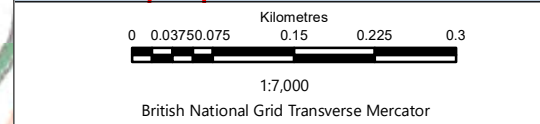


Key

Proposed DCO Order Limits

Hedge importance

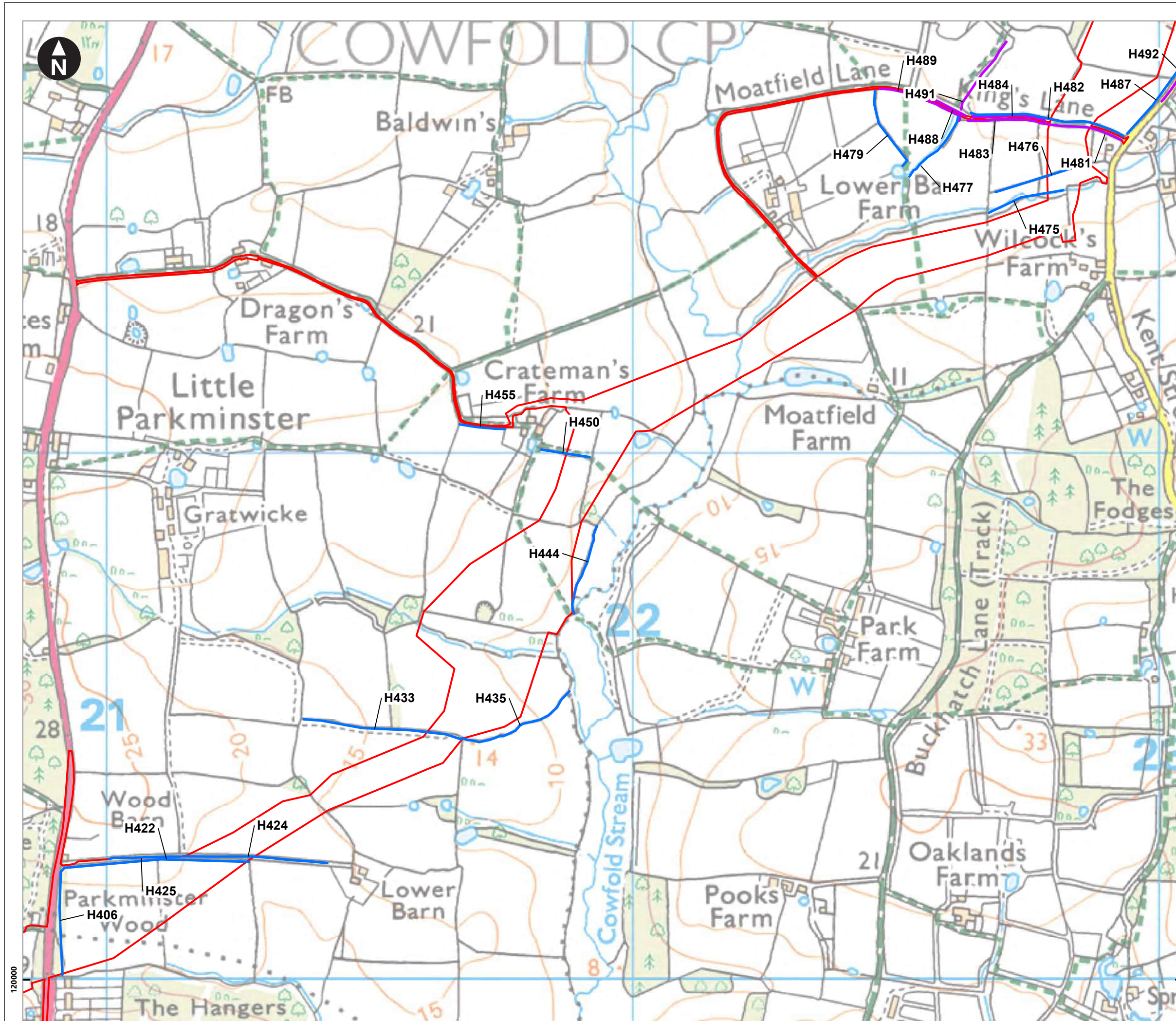
- Important
- Not Important



Rampion Extension Development

Rampion 2 Offshore Wind Farm
Figure 3.2 Important Hedges
Page 15 of 18
Hedgerow Survey Report

| | | | | |
|--|--------------------|--------------------|---------------------------|------------------|
| System Identifier: 42285-WSP-ES-ON-FG-OO-4685 | | | | Version: 2.0 |
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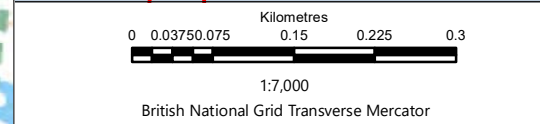
Key

Proposed DCO Order Limits

Hedge importance

— Important

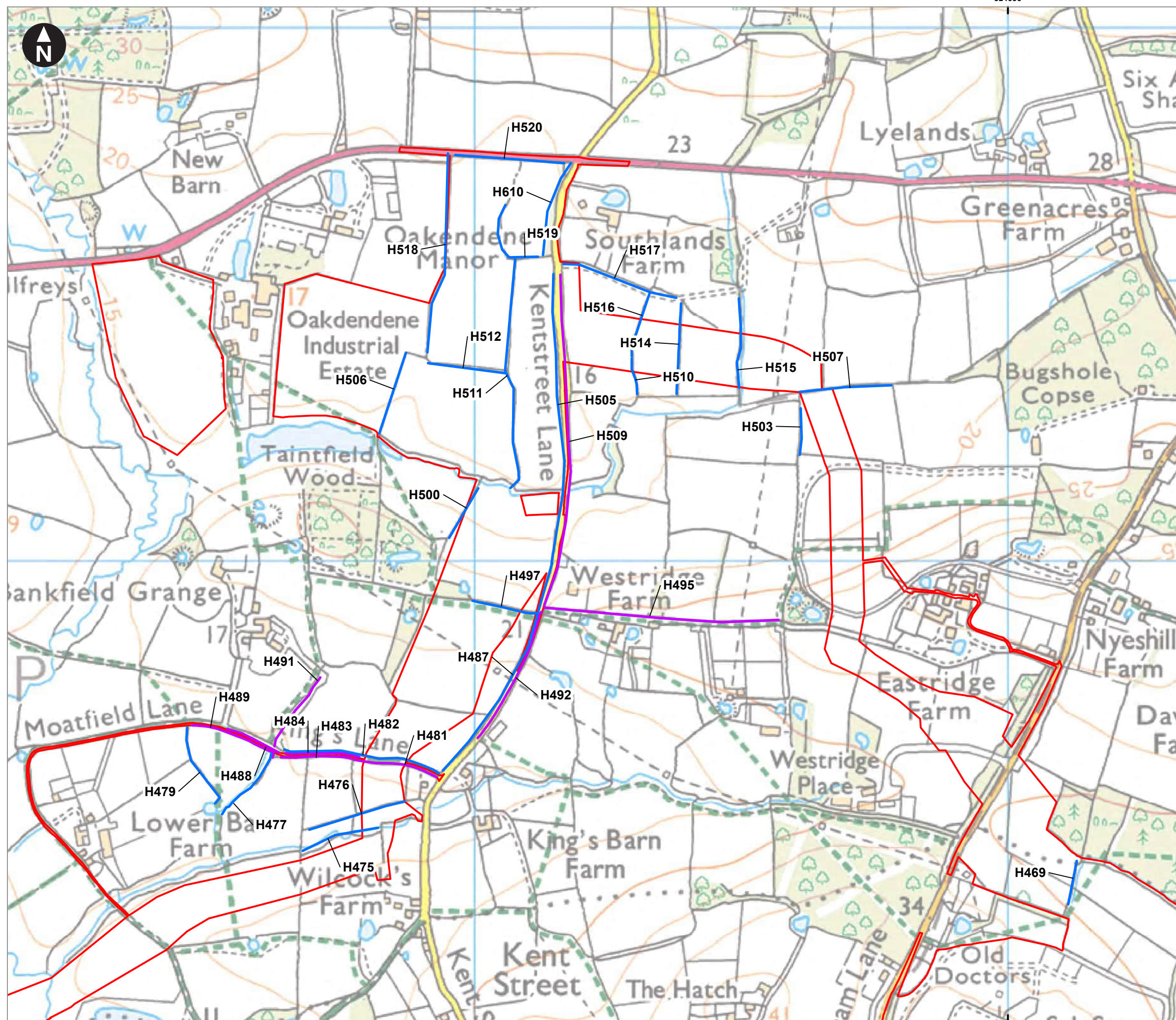
— Not Important




Rampion Extension Development

Rampion 2 Offshore Wind Farm
 Figure 3.2 Important Hedges
 Page 16 of 18
 Hedgerow Survey Report


| | | | | |
|---|--------------------|--------------------|---------------------------|------------------|
| System Identifier: 42285-WSPE-ES-ON-FG-OO-4685 | | | | Version: 2.0 |
| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET | Drawn Date: 02/05/2023 | Status: Final |




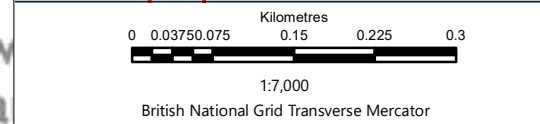
Key

 Proposed DCO Order Limits

Hedge importance

 Important

 Not Important



Rampion Extension Development



Rampion 2 Offshore Wind Farm

Figure 3.2 Important Hedges

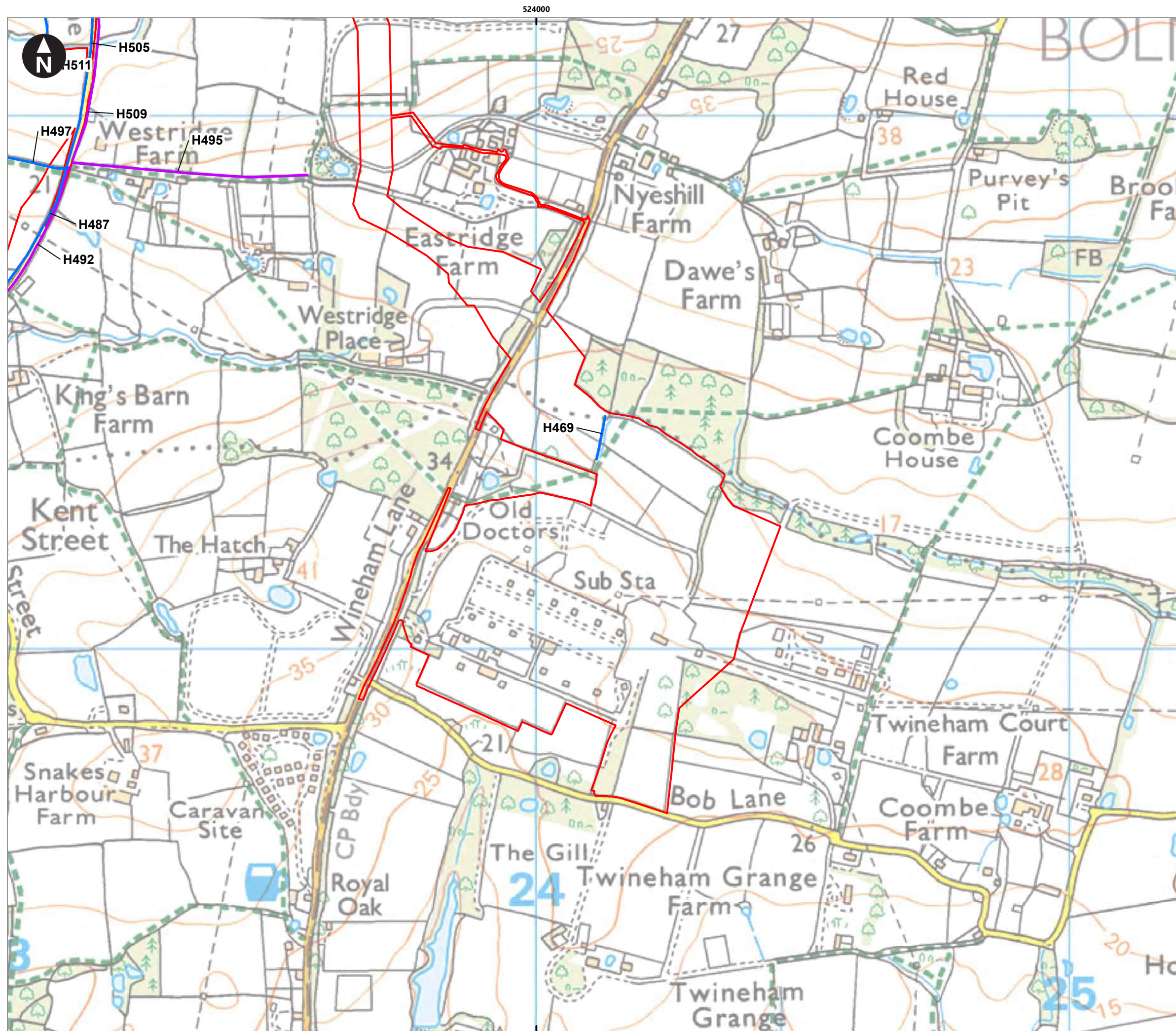
Page 17 of 18

Hedgerow Survey Report

System Identifier: 42285-WSP-ES-ON-FG-OO-4685

Version: 2.0

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| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET | Drawn Date: 02/05/2023 | Status: Final |
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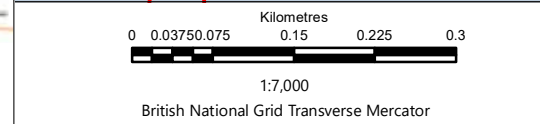
Key

Proposed DCO Order Limits

Hedge importance

— Important

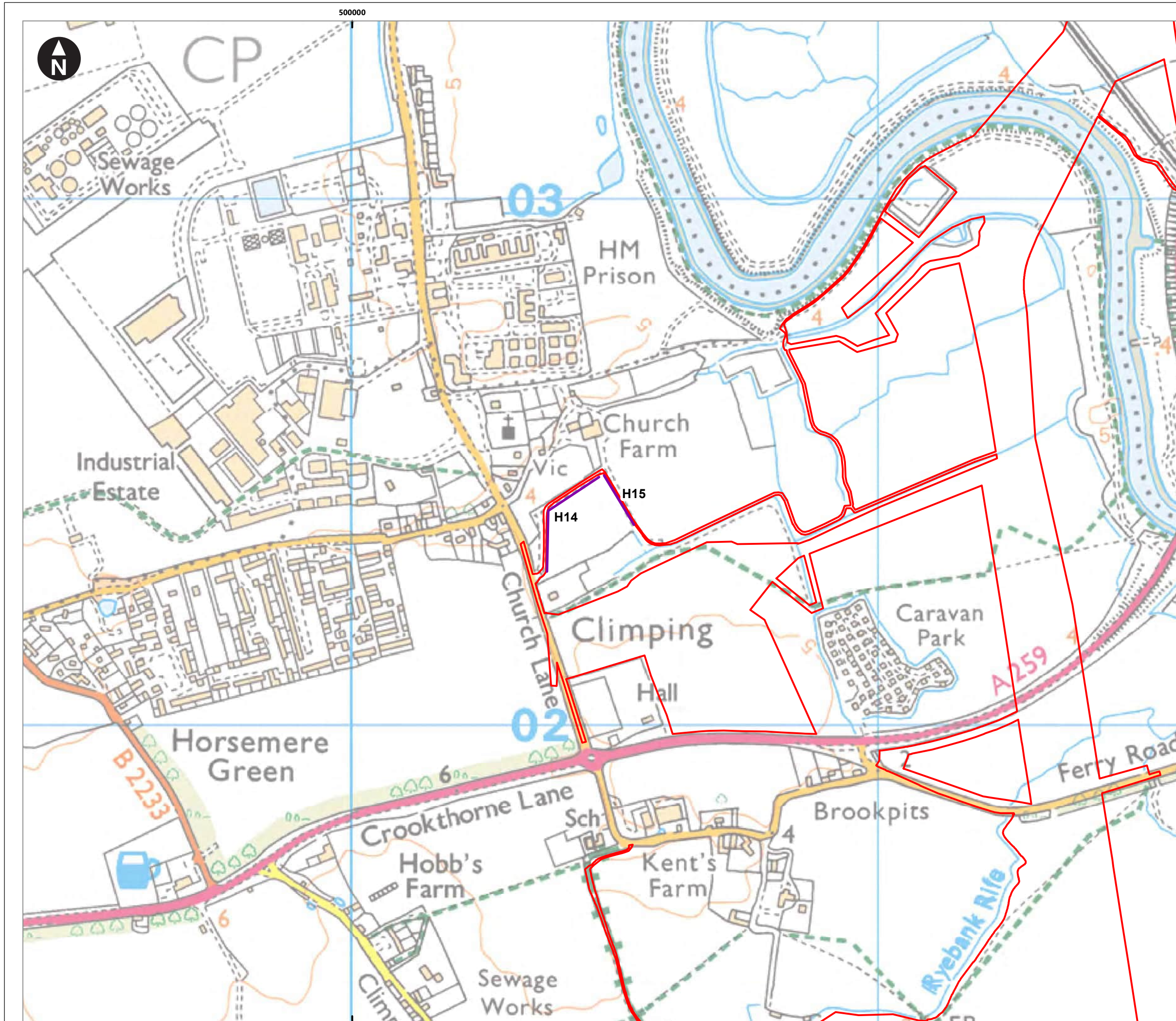
— Not Important



Rampion Extension Development

Rampion 2 Offshore Wind Farm
 Figure 3.2 Important Hedges
 Page 18 of 18
 Hedgerow Survey Report

| | | | | |
|--|--------------------|--------------------|---------------------------|------------------|
| System Identifier: 42285-WSP-ES-ON-FG-OO-4685 | | | | Version: 2.0 |
| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET | Drawn Date: 02/05/2023 | Status: Final |



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Key

- Proposed DCO Order Limits

Hedge importance

- Unknown - unlikely important
- Unknown - potentially important

0 0.03750.075 0.15 0.225 0.3
 1:7,000
 British National Grid Transverse Mercator

Rampion Extension Development

Rampion 2 Offshore Wind Farm

Figure 3.3 Other hedges

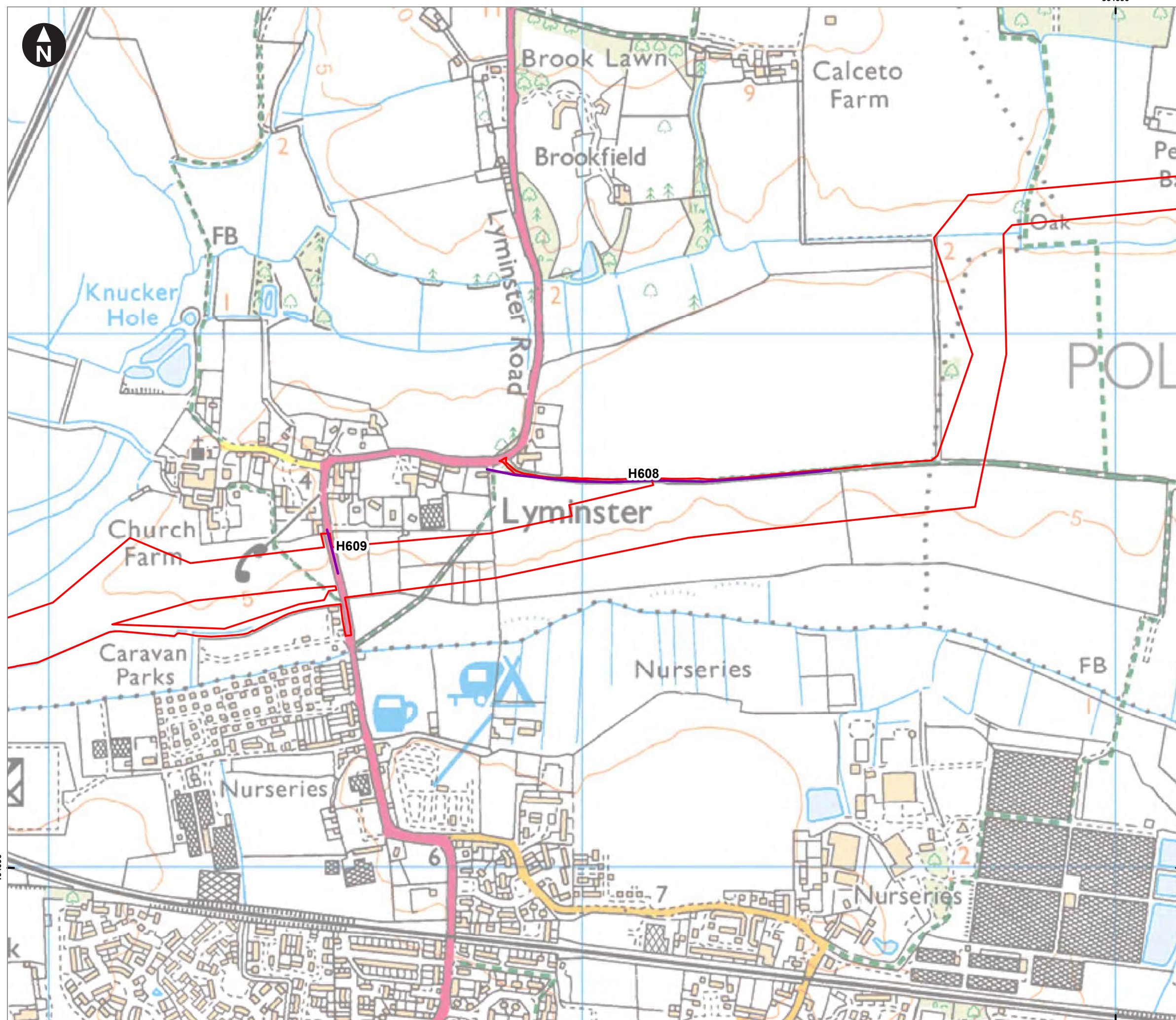
Page 1 of 10

Hedgerow Survey Report


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| System Identifier: 42285-WSPE-ES-ON-FG-OO-4050 | | Version: 2.0 |
| Company: WSP | Drawn By: HADJE | Chk/Aprvd: SUTET |
| Drawn Date: 05/05/2023 | Status: Final | |

504000


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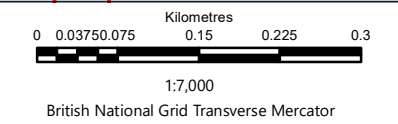
Key

 Proposed DCO Order Limits

Hedge importance

 Unknown - unlikely important

 Unknown - potentially important



Rampion Extension Development



Rampion 2 Offshore Wind Farm

Figure 3.3 Other hedges

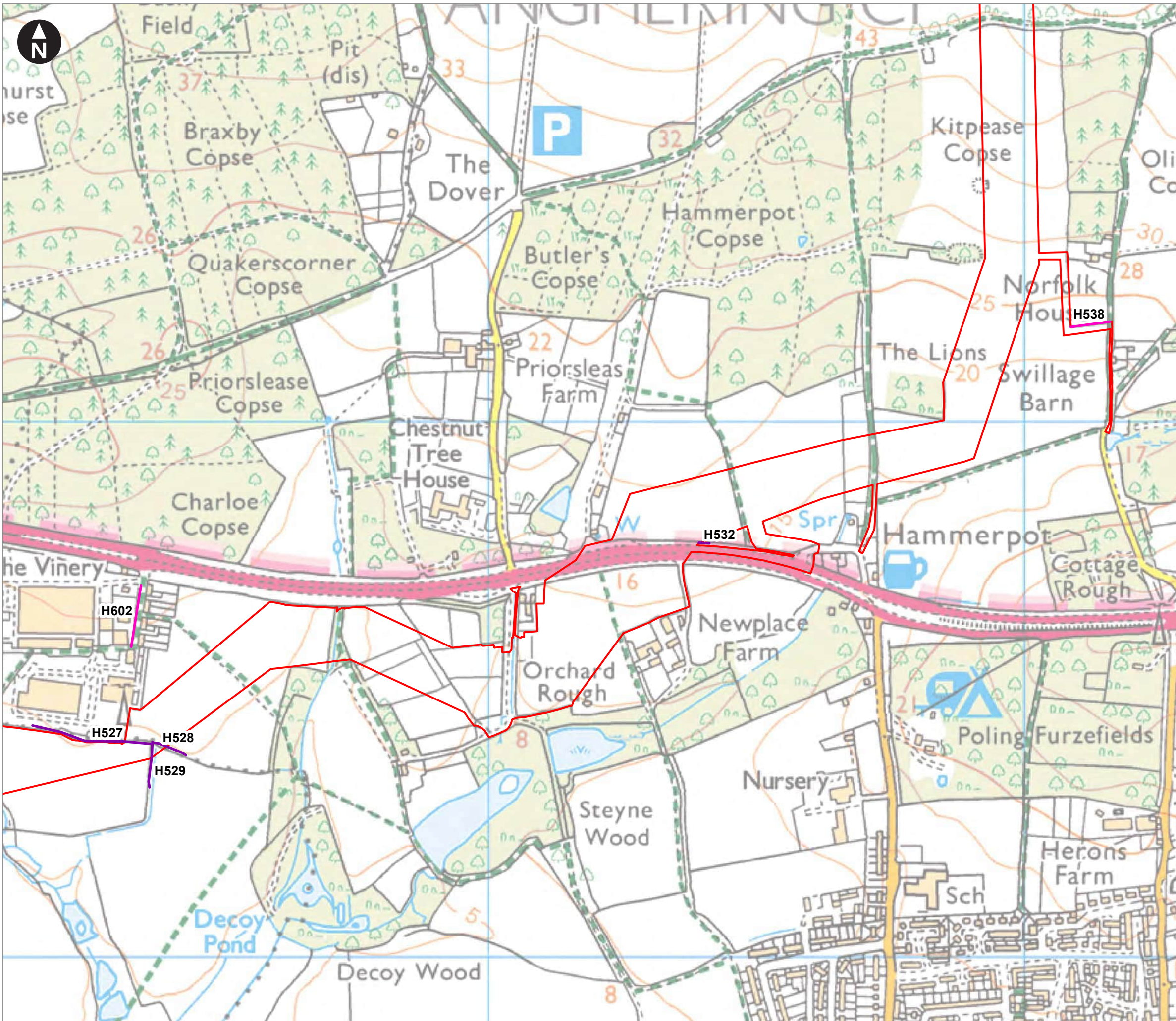
Page 2 of 10

Hedgerow Survey Report

System Identifier: 42285-WSPE-ES-ON-FG-OO-4050 Version: 2.0

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104000



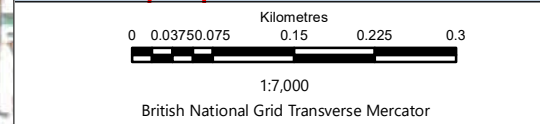
Key

Proposed DCO Order Limits

Hedge importance

Unknown - unlikely important

Unknown - potentially important



Rampion Extension Development

Rampion 2 Offshore Wind Farm

Figure 3.3 Other hedges

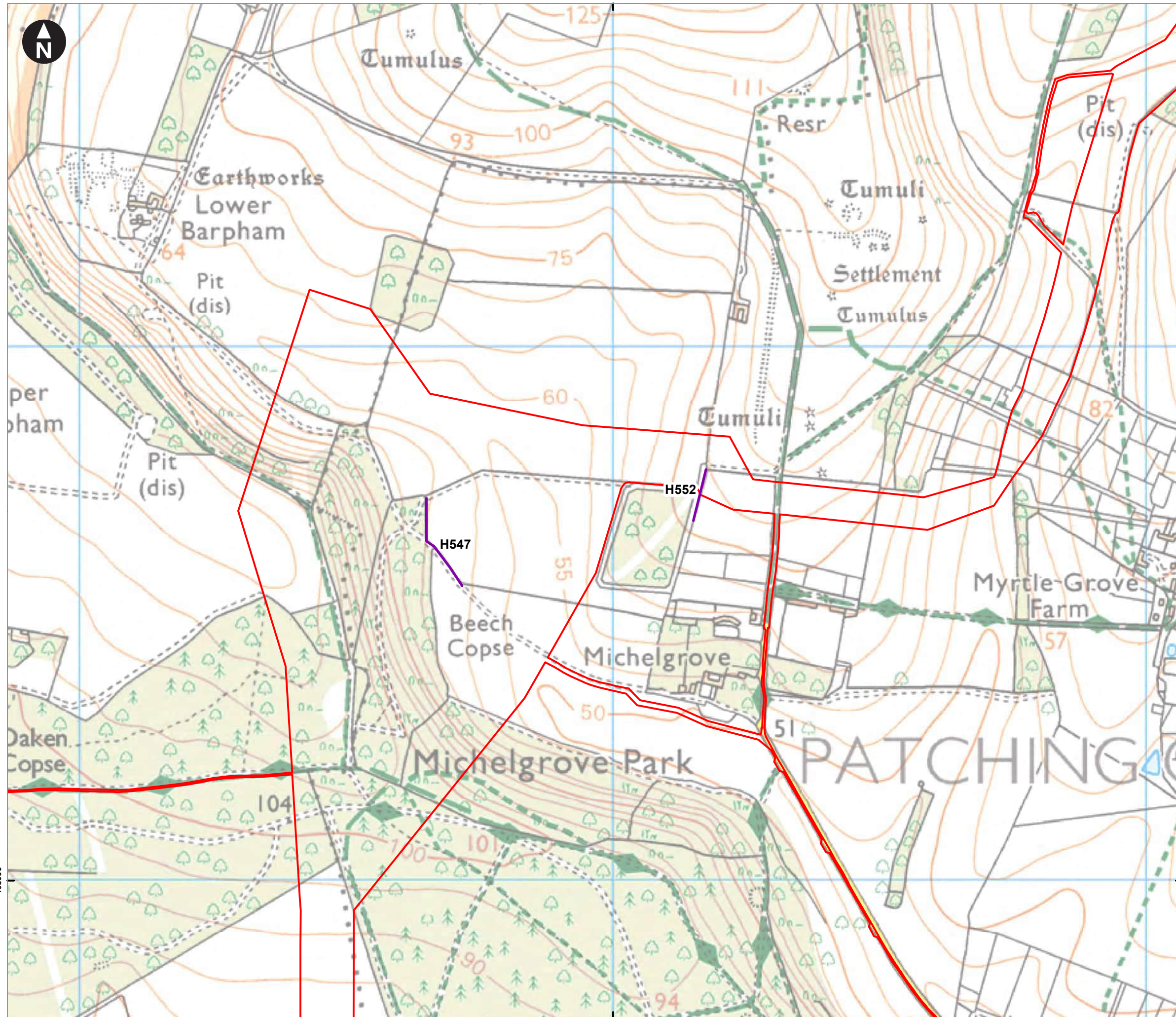
Page 3 of 10

Hedgerow Survey Report

| | | | | |
|--|--------------------|---------------------|---------------------------|------------------|
| System Identifier: 42285-WSP-ES-ON-FG-OO-4050 | | | | Version: 2.0 |
| Company: WSP | Drawn By: HADJE | Chk/Prvrd: SUTET | Drawn Date: 05/05/2023 | Status: Final |

508000

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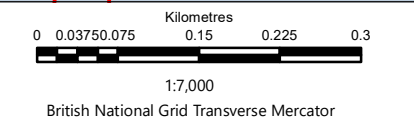


Key

- Proposed DCO Order Limits

Hedge importance

- Unknown - unlikely important
- Unknown - potentially important



Rampion Extension Development

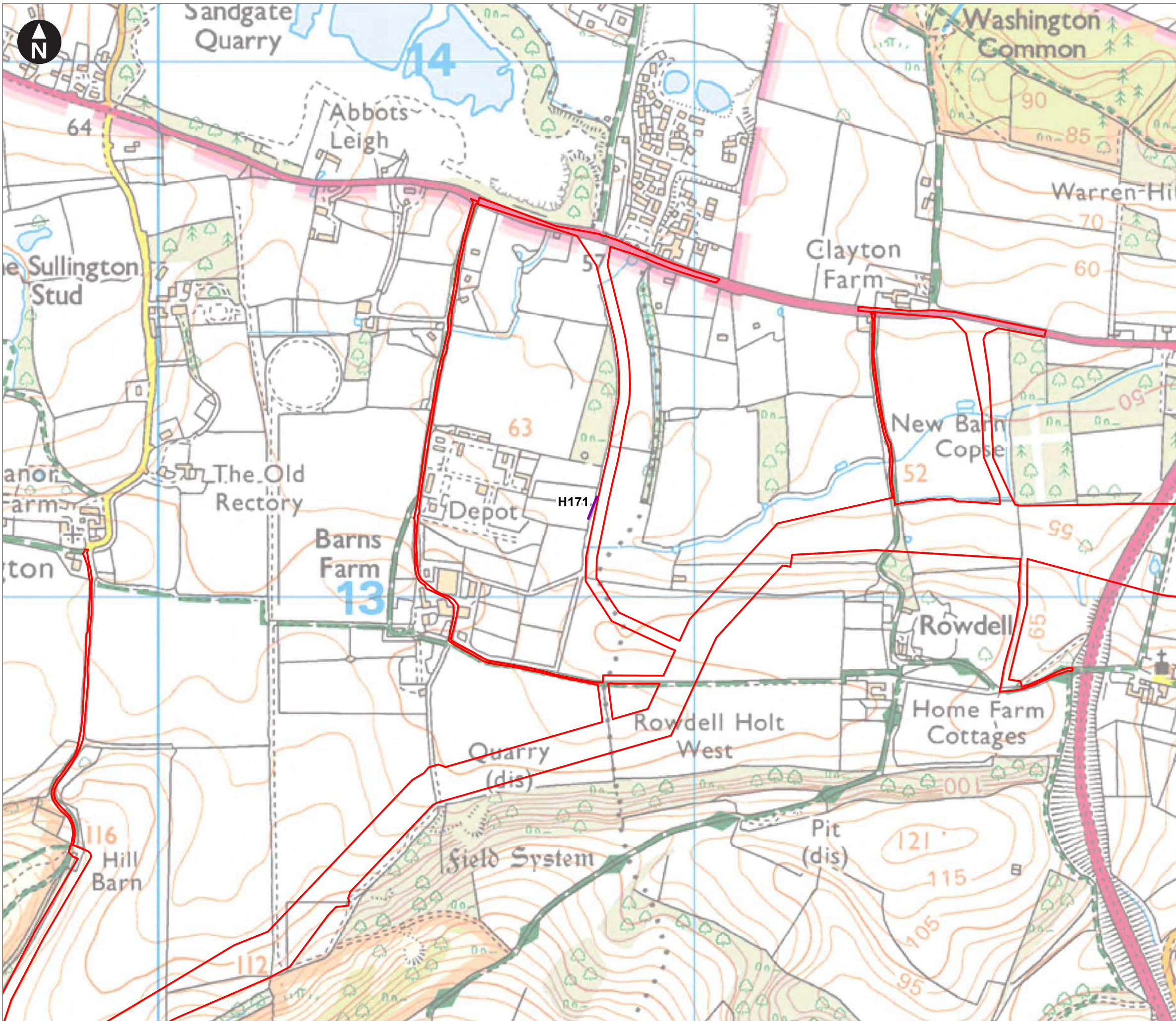
Rampion 2 Offshore Wind Farm

Figure 3.3 Other hedges

Page 4 of 10

Hedgerow Survey Report

| | | | | |
|---|--------------------|--------------------|---------------------------|------------------|
| System Identifier: 42285-WSPE-ES-ON-FG-OO-4050 | | | | Version: 2.0 |
| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET | Drawn Date: 05/05/2023 | Status: Final |



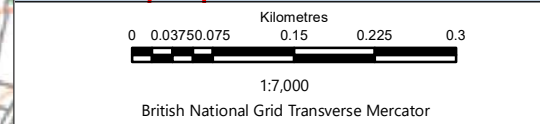
Key

Proposed DCO Order Limits

Hedge importance

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Unknown - potentially important



Rampion Extension Development

Rampion 2 Offshore Wind Farm

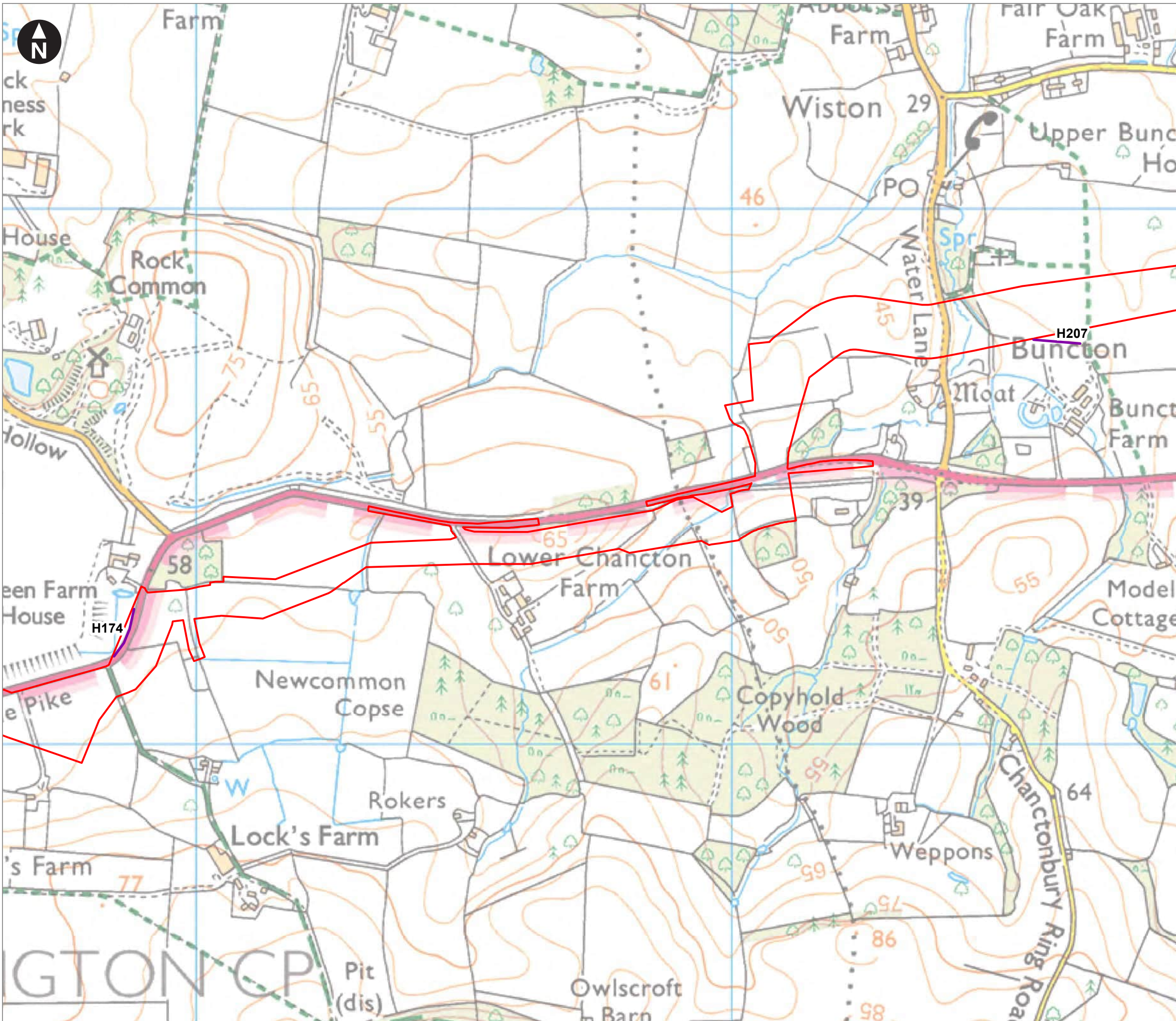
Figure 3.3 Other hedges

Page 5 of 10

Hedgerow Survey Report

System Identifier: 42285-WSPE-ES-ON-FG-OO-4050 Version: 2.0

| | | | | |
|--------------|-----------------|-----------------|------------------------|---------------|
| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET | Drawn Date: 05/05/2023 | Status: Final |
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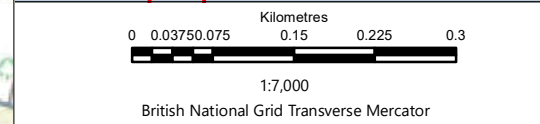


Key

- Proposed DCO Order Limits

Hedge importance

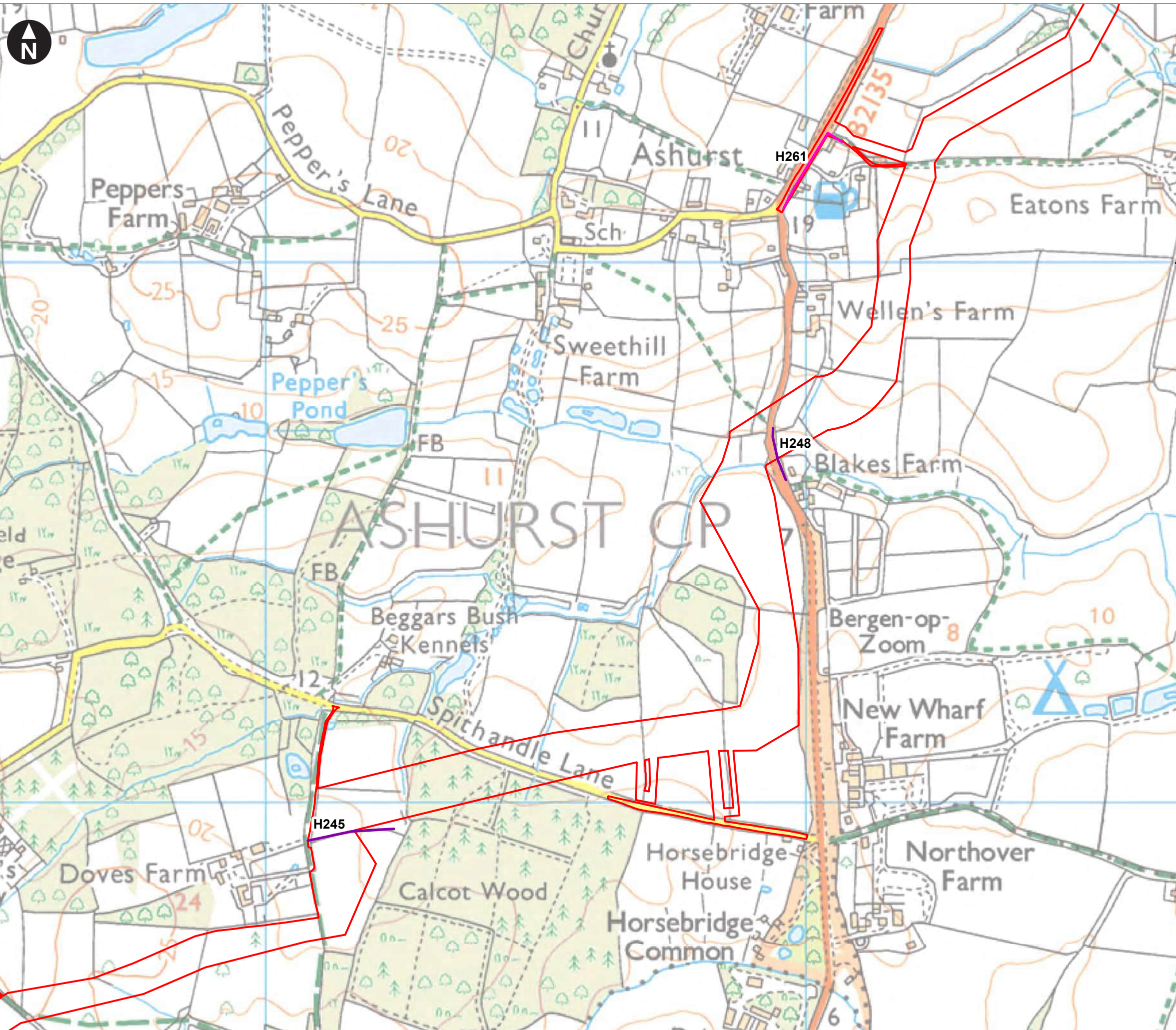
- Unknown - unlikely important
- Unknown - potentially important



Rampion Extension Development

Rampion 2 Offshore Wind Farm
Figure 3.3 Other hedges
Page 6 of 10
Hedgerow Survey Report

| | | | | |
|--|--------------------|--------------------|---------------------------|------------------|
| System Identifier: 42285-WSP-ES-ON-FG-OO-4050 | | | | Version: 2.0 |
| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET | Drawn Date: 05/05/2023 | Status: Final |



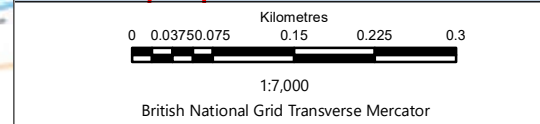
Key

Proposed DCO Order Limits

Hedge importance

Unknown - unlikely important

Unknown - potentially important



Rampion Extension Development

Rampion 2 Offshore Wind Farm

Figure 3.3 Other hedges

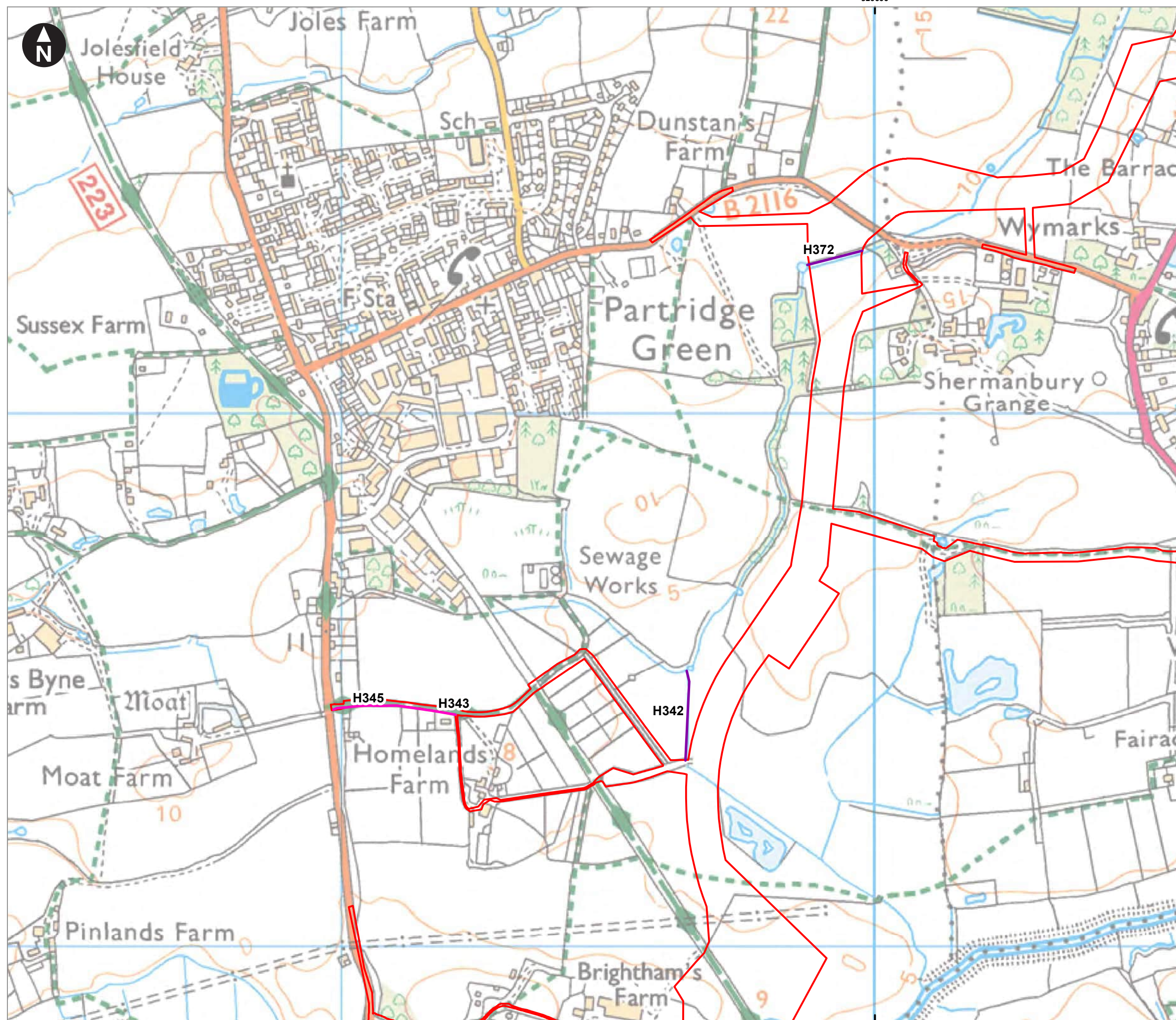
Page 7 of 10

Hedgerow Survey Report

| | | | | |
|--|--------------------|---------------------|---------------------------|------------------|
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| Company: WSP | Drawn By: HADJE | Chk/Prvrd: SUTET | Drawn Date: 05/05/2023 | Status: Final |

520000

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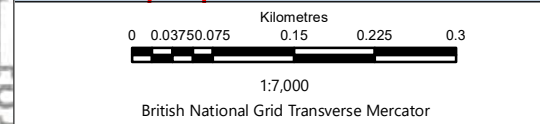
Key

Proposed DCO Order Limits

Hedge importance

Unknown - unlikely important

Unknown - potentially important



Rampion Extension Development

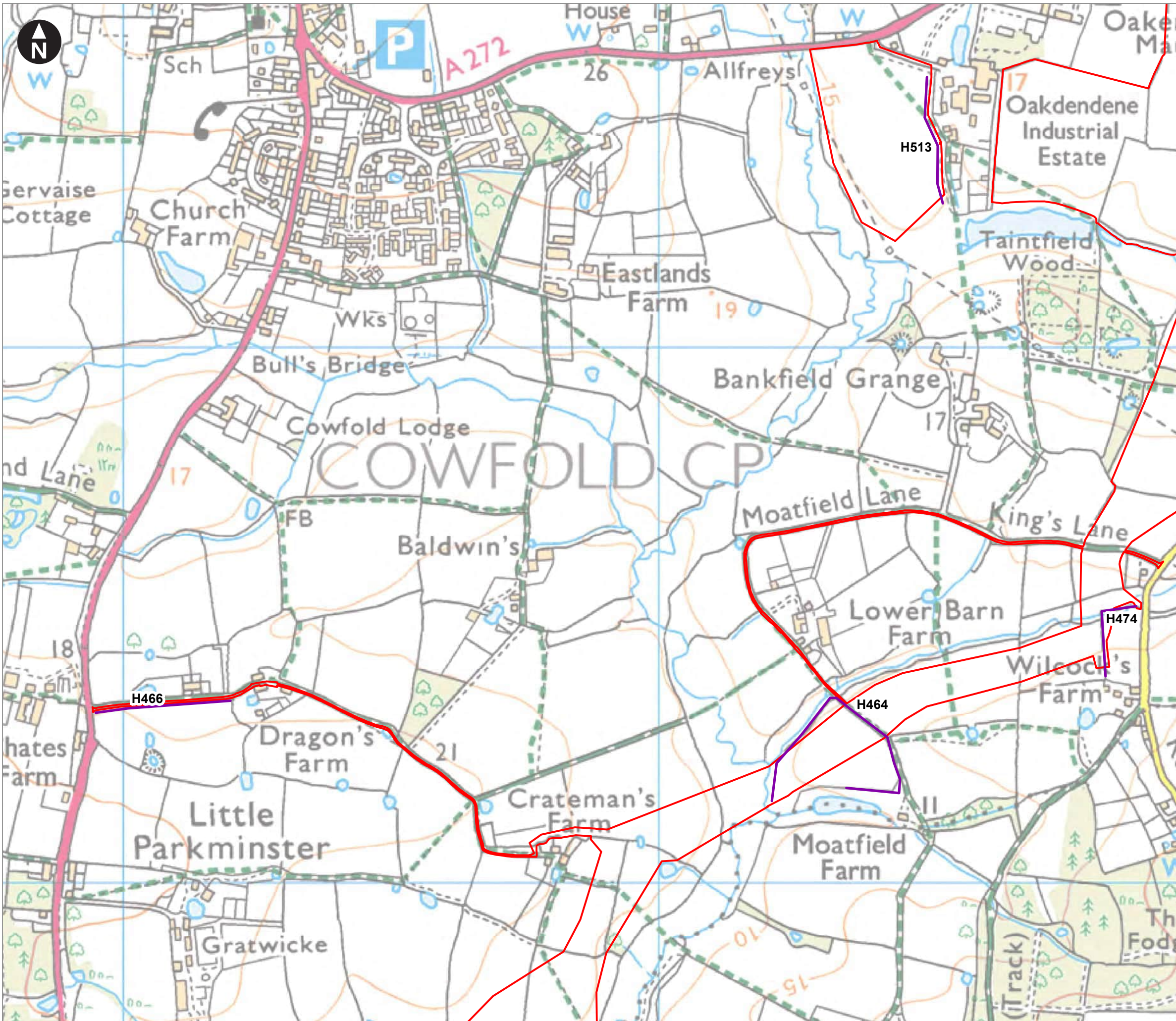
Rampion 2 Offshore Wind Farm

Figure 3.3 Other hedges

Page 8 of 10

Hedgerow Survey Report

| | | | | |
|--|--------------------|---------------------|---------------------------|------------------|
| System Identifier: 42285-WSP-ES-ON-FG-OO-4050 | | | | Version: 2.0 |
| Company: WSP | Drawn By: HADJE | Chk/Aprvd: SUTET | Drawn Date: 05/05/2023 | Status: Final |



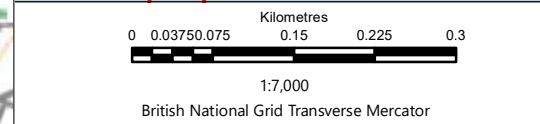
Key

Proposed DCO Order Limits

Hedge importance

Unknown - unlikely important

Unknown - potentially important



Rampion Extension Development

Rampion 2 Offshore Wind Farm

Figure 3.3 Other hedges

Page 9 of 10

Hedgerow Survey Report

| | | | | |
|--|--------------------|--------------------|---------------------------|------------------|
| System Identifier: 42285-WSP-ES-ON-FG-OO-4050 | | | | Version: 2.0 |
| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET | Drawn Date: 05/05/2023 | Status: Final |

524000

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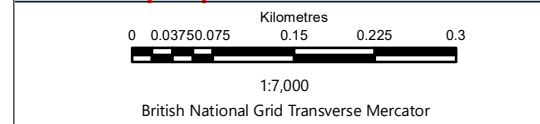
Key

Proposed DCO Order Limits

Hedge importance

Unknown - unlikely important

Unknown - potentially important



Rampion Extension Development

Rampion 2 Offshore Wind Farm

Figure 3.3 Other hedges

Page 10 of 10

Hedgerow Survey Report

| | | | | |
|---|--------------------|--------------------|---------------------------|------------------|
| System Identifier: 42285-WSPE-ES-ON-FG-OO-4050 | | | | Version: 2.0 |
| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET | Drawn Date: 05/05/2023 | Status: Final |

Annex B

'Important' Hedgerow Criteria

The Hedgerow Regulations 1997⁵

The Hedgerow Regulations 1997 provide important protection by prohibiting the removal of “important” hedgerows (or parts of them), without first notifying the local planning authority.

A hedgerow is defined as “a row of bushes forming a hedge, with the trees etc growing in it, a line of hedge”; but does not have to contain trees, but any trees growing in it form part of the hedgerow. Where a hedgerow has not been managed and has grown into a line of trees, it is not covered by the Regulations⁶.

The Regulations are aimed at countryside hedgerows; those within or marking a boundary of a dwelling house are not covered by the Regulations. The Regulations apply to the following hedgerows:

- hedgerows that are 20 metres or more long;
- hedgerows that are less than 20m long, if they are connected at each end to another hedgerow, thereby forming a continuous network of hedges; and
- the hedgerow contains species on part 1 of Schedule 1; Schedule 5; or Schedule 8 of the Wildlife and Countryside Act 1981, or other defined species including certain Red Data Book species.

The Regulation includes provision for gaps in the vegetation of 20 metres or less.

Criteria

The Regulations set out criteria that must be used to determine which hedgerows are “important”. A hedgerow is classed as “important” if it is at least 30 years’ old and meets at least one of the following criteria⁷:

The hedgerow includes one or more of the following:

- at least seven woody species;
- at least six woody species **plus** at least three Associated Features (see below);
- at least six woody species including a black poplar; large-leaved lime, small-leaved lime or wild service tree; and

⁵ D (1997). *The Hedgerow Regulations. A Guide to the Law and Good Practice*. [Online]: Accessed from:

https://hedgelink.org.uk/cms/cms_content/files/94_hedgerows_regs_1997_guide_law_%26_good_practice.pdf

⁶ But it *may* be protected separately.

⁷ Only ecological criteria are included here; further criteria pertaining to the land use and historical features are noted within the Regulations.

- at least five woody species and at least four Associated Features.

Associated Features are:

- a bank or wall for at least half the length;
- a ditch for at least half the length;
- gaps over no more than 10 percent of the length;
- at least one standard tree per 50m;
- at least three ground flora woodland species as defined in Schedule 2 of the Regulations within 1m of the hedgerow;
- connections scoring four or more points, where connection to a hedgerow counts as one, a broad-leaved woodland or pond counts as two⁸; and
- a parallel hedge within 15m⁸.

Woody species are defined in Schedule 3 of the Hedgerows Regulations as follows:

Table B1 Woody species

| English name | Scientific name |
|-----------------|---|
| Alder | <i>Alnus glutinosa</i> |
| Alder buckthorn | <i>Frangula alnus</i> |
| Ash | <i>Fraxinus excelsior</i> |
| Aspen | <i>Populus tremula</i> |
| Beech | <i>Fagus sylvatica</i> |
| Birch, silver | <i>Betula pendula</i> |
| Bird cherry | <i>Prunus padus</i> |
| Black poplar | <i>Populus nigra</i> sub-species <i>betulifolia</i> |
| Blackthorn | <i>Prunus spinosa</i> |
| Box | <i>Buxus sempervirens</i> |
| Broom | <i>Cytisus scoparius</i> |
| Buckthorn | <i>Rhamnus cathartica</i> |
| Butcher's-broom | <i>Ruscus aculeatus</i> |

⁸ These features do not count if a public right of way is being included in the criterion.

| English name | Scientific name |
|------------------|---------------------------------|
| Crab apple | <i>Malus sylvestris</i> |
| Dogwood | <i>Cornus sanguinea</i> |
| Downy birch | <i>Betula pubescens</i> |
| Downy currant | <i>Ribes spicatum</i> |
| Dwarf gorse | <i>Ulex minor</i> |
| Elder | <i>Sambucus nigra</i> |
| Elm | <i>Ulmus species</i> |
| Gooseberry | <i>Ribes uva-crispa</i> |
| Gorse | <i>Ulex europaeus</i> |
| Guelder rose | <i>Viburnum opulus</i> |
| Hawthorn | <i>Crataegus monogyna</i> |
| Hazel | <i>Corylus avellana</i> |
| Holly | <i>Ilex aquifolium</i> |
| Midland hawthorn | <i>Crataegus laevigata</i> |
| Western gorse | <i>Ulex gallii</i> |
| Wild cherry | <i>Prunus avium</i> |
| Wild cotoneaster | <i>Cotoneaster integerrimus</i> |

Ground flora woodland species are defined as follows:

Table B2 Woodland ground flora species

| English name | Scientific name |
|--------------------------|----------------------------------|
| Forbs | |
| Barren strawberry | <i>Potentilla sterilis</i> |
| Bluebell | <i>Hyacinthoides non-scripta</i> |
| Broad-leaved helleborine | <i>Epipactis helleborine</i> |
| Bugle | <i>Ajuga reptans</i> |

| English name | Scientific name |
|----------------------------------|------------------------------|
| Common cow-wheat | <i>Melampyrum pratense</i> |
| Common dog violet | <i>Veronica riviniana</i> |
| Dog's mercury | <i>Mercurialis perennis</i> |
| Early dog-violet | <i>Viola reichenbachian</i> |
| Early purple orchid | <i>Orchis mascula</i> |
| Enchanter's nightshade | <i>Circaea lutetiana</i> |
| Goldilocks buttercup | <i>Ranunculus auricomus</i> |
| Great bell-flower | <i>Campanula latifolia</i> |
| Heath bedstraw | <i>Galium saxatile</i> |
| Herb Paris | <i>Paris quadrifolia</i> |
| Herb-Robert | <i>Geranium robertianum</i> |
| Lords-and-ladies | <i>Arum maculatum</i> |
| Moschatel | <i>Adoxa moschatellina</i> |
| Nettle-leaved bell-flower | <i>Campanula trachelium</i> |
| Oxlip | <i>Primula elatior</i> |
| Pignut | <i>Conopodium majus</i> |
| Primrose | <i>Primula vulgaris</i> |
| Ramsons | <i>Allium ursinum</i> |
| Sanicle | <i>Sanicula europaea</i> |
| Small cow-wheat | <i>Melampyrum sylvaticum</i> |
| Sweet violet | <i>Viola odorata</i> |
| Toothwort | <i>Lathraea squamaria</i> |
| Tormentil | <i>Potentilla erecta</i> |
| Wild strawberry | <i>Fragaria vesca</i> |
| Wood anemone | <i>Anemone nemorosa</i> |
| Wood avens/Herb bennet | <i>Geum urbanum</i> |

| English name | Scientific name |
|-----------------------------------|--------------------------------|
| Wood horsetail | <i>Equisetum sylvaticum</i> |
| Wood sage | <i>Teucrium scorodonia</i> |
| Wood sorrel | <i>Oxalis acetosella</i> |
| Wood speedwell | <i>Veronica montana</i> |
| Wood spurge | <i>Euphorbia amygdaloides</i> |
| Woodruff | <i>Galium odoratum</i> |
| Yellow archangel | <i>Lamiastrum galeobdolon</i> |
| Yellow pimpernel | <i>Lysimachia nemorum</i> |
| Ferns | |
| Broad buckler fern | <i>Dryopteris dilatata</i> |
| Common polypody | <i>Polypodium vulgare</i> |
| Hard fern | <i>Blechnum spicant</i> |
| Hard shield fern | <i>Polystichum aculeatum</i> |
| Hart's tongue | <i>Asplenium scolopendrium</i> |
| Lady fern | <i>Athyrium filix-femina</i> |
| Male fern | <i>Dryopteris filix-mas</i> |
| Narrow buckler-fern | <i>Dryopteris carthusiana</i> |
| Scaly male-fern | <i>Dryopteris affinis</i> |
| Soft shield fern | <i>Polystichum setiferum</i> |
| Grasses, sedges and rushes | |
| Giant fescue | <i>Festuca gigantea</i> |
| Greater wood-rush | <i>Luzula sylvatica</i> |
| Hairy brome | <i>Bromus ramosus</i> |
| Hairy woodrush | <i>Luzula pilosa</i> |
| Wood false-brome | <i>Brachypodium sylvaticum</i> |
| Wood meadow-grass | <i>Poa nemoralis</i> |

| English name | Scientific name |
|---------------------|------------------------|
| Wood melick | <i>Melica uniflora</i> |
| Wood millet | <i>Millium effusum</i> |
| Wood sedge | <i>Carex sylvatica</i> |

CONFIDENTIAL

Annex C

Survey data: Not important hedges

CONFIDENTIAL

Table C.1 Hedgerow survey data- not 'Important' hedgerows

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H1 | 2-4 | 2-6 | 225 | ≤4 | ü | ü | ü | x | x | x | ü | 1 | x | x | Hedgerow adjacent to two ditches with reed beds. Ground flora included ribwort plantain, madder, common ragwort, bristle ox tongue, common reed, Yorkshire fog, perennial rye grass. High nitrification run off from adjacent arable land use. |
| H2 | 2-4 | 2-6 | 280 | ≤4 | ü | ü | ü | x | x | ü | ü | 1 | 1 | x | Hedgerow adjacent to two ditches with reed beds. Ground flora included ribwort plantain, madder, common ragwort, bristle ox tongue, common reed, Yorkshire fog, perennial rye grass. High nitrification run off from adjacent arable land use. |

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|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H3 | 3-6 | 5 | 286 | ≤4 | x | ü | x | x | x | x | ü | 1 | 1 | x | Ditch with reed bed, small arable margin tussock grassland. |
| H4 | 3-4 | 3 | 330 | ≤4 | x | ü | x | x | x | x | x | 1 | x | x | Adjacent ditch with reed beds. |
| H5 | 3 | 2 | 157 | ≤4 | ü | ü | x | x | x | x | x | 2 | x | x | Significantly degraded hedgerow. Recent conifer planting to the east of hedge. No management evident. |
| H8 | 4 | 1 | 359 | ≤4 | ü | x | x | ü | x | x | ü | 2 | x | x | Hawthorn dominated. Mature and semi mature oak, ash. Trees up to 10-12m. Very little ground flora, mainly ivy and nettles. |
| H9 | 5 | 3 | 483 | ≤4 | x | ü | x | x | x | ü | ü | 1 | 1 | X | Defunct hedge, very dense bramble taking over ditch. Grasses, common reed, false oat grass, Yorkshire fog. |

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|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|------|---|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PROW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H10 | 4 | 2 | 577 | ≤4 | x | x | ü | ü | x | x | x | 1 | x | x | Hedgerow with conifer planting and ornamental species. |
| H11 | 3-5 | 4 | 113 | ≤4 | ü | ü | x | x | x | ü | ü | 1 | 1 | x | Poplar, alder, hazel planted in past ten years no other management. Mature hawthorn suggests hedgerow older than 40 years. Dense bramble at hedge gaps. Parallels hedge adjacent main road. |
| H12 | 1.5 | 1 | 60 | 3 | x | x | x | x | x | x | x | x | x | x | Young, planted hedge at field boundary. Blackthorn, alder, hawthorn. Poor semi-improved grassland at base. No management obvious. |
| H13 | 2-5 | 3 | 417 | 5 | ü | x | x | x | x | x | ü | 2 | x | x | Recently planted hedgerow. Dominant willow and dog wood. PROW for part of hedge length. False oat grass, perennial rye |

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|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | grass, cock's foot. cleavers, common nettle. |
| H16 | 2-4 | 3 | 467 | ≤4 | ü | ü | x | x | x | x | ü | 1 | 1 | x | No evidence obvious due to mature hawthorn trees. Dense bramble at hedgerow gaps. False oat grass, perennial rye grass, cock's foot, nettle, teasel. |
| H17 | 4 | 10 | 132 | 3 | ü | x | ü | x | x | x | x | 1 | x | x | Connection at Eastern end; no gaps. Aspen, brambles frequent, sycamore, elder occasional, conifers rare. Understorey nettles, ivy abundant. |
| H19 | 1.5 | 0.5 | 436 | ≤4 | x | ü | ü | x | x | x | x | x | 1 | x | Recently planted hedgerow. Single hedge thick (0.5m width). Other than recent planting no management to control bramble from taking over immature hedge. |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H20 | 2 | 2 | 458 | ≤4 | ü | ü | x | x | x | x | ü | 1 | x | x | Adjacent railway. Where hawthorn has gaps dense bramble and rose has taken over. Common reed, false oat grass, Yorkshire fog, cock's foot, teasel, creeping thistle, nettle, dove's-foot crane's-bill. |
| H21 | 4 | 3 | 363 | ≤4 | x | ü | ü | x | x | x | x | 2 | x | x | Intensively managed grass footpath to the east, arable field to the west. Hedgerow consists of hawthorn with occasional bramble. |
| H22 | 1.5 - 3 | 4 | 107 | ≤4 | x | ü | x | x | x | x | x | 2 | x | x | No recent management has allowed hawthorn to grow into small trees. Leggy hedgerow evidence of livestock damage. Poaching at ditch. Cock's foot, perennial rye grass, Yorkshire fog, cleavers, ground ivy, nettle. |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H23 | 2-4 | 4 | 175 | ≤4 | x | ü | ü | x | x | x | x | 1 | x | x | Mature hawthorn due to lack of management, the base does not have gaps due to bramble, but the canopy does have multiple gaps. Cocks foot, Yorkshire fog, bread wheat, nettle. |
| H24 | 1-5 | 3 | 301 | ≤4 | ü | x | x | x | x | x | x | 1 | x | x | Dense bramble in places, signs of nitrification. |
| H25 | 2-4 | 3 | 297 | ≤4 | ü | ü | x | x | x | x | x | x | x | x | Poached field right up to hedgerow. There is a fence between hedgerow and field preventing livestock damaging directly under hedge. |
| H26 | 2-4 | 2 | 303 | 2 | x | x | x | x | x | x | x | 1 | x | x | Defunct hedge. Elm, conifer, hawthorn and ivy with gaps colonised by bramble; on edge of arable field. Butterfly bush present |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | | Description and context |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H27 | 2-4 | 2 | 135 | 1 | ü | x | x | x | x | x | ü | 1 | x | x | Bordering arable field and road. Field elm dominant, occasional bramble; ground flora of nettles and burdock. |
| H129 | 2 | 2 | 421 | 2 | x | x | x | x | x | x | x | x | 1 | x | Connected to line of trees at North and woodland to south. 2 percent gaps. Blackthorn dominant, occasional elder. understory bramble, tall fescue and nettles abundant. Hedge woundwort and hedge bindweed frequent. |
| H135 | 1.5 | 1.5 | 58 | ≤4 | x | x | x | x | x | x | x | x | 1 | x | Leggy hedgerow lack of management possible damaged from livestock. Due to connectivity to woodland good opportunities for enhancement. Hawthorn turning leggy & surrounding herbs/ grass look |

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|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H137 | 1.5 | 1.5 | 33 | ≤4 | ü | ü | ü | x | x | x | ü | 1 | x | x | scorched from high nutrient run off. Hedgerow either side of tractor access tack. possible replanted due to young hawthorn. Hawthorn turning leggy & surrounding herbs/ grass look scorched from high nutrient run off. |
| H142 | 4 | 2 | 133 | 5 | ü | x | x | x | x | x | ü | 1 | x | x | Connected to intact species poor hedgerow at East end, path and bank adjacent. 20 percent gaps. Hawthorn abundant, field maple frequent, holly, dogwood occasional, hazel, dog rose rare, understory bramble, false wood brome abundant. |

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|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|---|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H146 | 1.5 | 2 | 81 | ≤4 | ü | ü | ü | x | x | x | x | 1 | x | x | Defunct hedgerow adjacent proW. Coarse grassland directly to hedge base. |
| H148 | 2 | 3 | 289 | ≤4 | ü | ü | x | x | x | x | x | 1 | x | x | Abundant elm and elder, frequent dogwood occasional blackthorn, clematis sp. 15 percent gap. bramble and common nettle understory. Associations of adjacent path and hedge to the east. |
| H154 | 2 | 3 | 123 | 4 | ü | x | ü | x | x | x | x | 1 | x | x | Abundant elder, elm, frequent dogwood, occasional blackthorn. Adjacent path and hedge associations. |
| H156 | 3 | 2 | 325 | 3 | x | ü | ü | x | x | x | x | 1 | 2 | x | Associated with woodland adjacent at two points, dry ditch and connected to intact species poor hedgerow at West end. No |

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|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | gaps. Hawthorn dominant, elder and dogwood occasional. Understorey ivy, hogweed, docks and common nettle abundant. |
| H157 | 2 | 10 | 157 | ≤4 | x | ü | x | x | x | x | x | 2 | x | x | Very steep bank, coarse grassland directly to hedgerow base. |
| H158 | 1 | 1 | 153 | 1 | ü | x | x | x | x | x | ü | 1 | x | x | Hawthorn dominant, ground flora smooth meadow grass dominant and occasional creeping thistle. |
| H159 | 3 | 2 | 153 | ≤4 | ü | x | ü | ü | x | x | x | 2 | x | x | Recent planting evident. Lack of other management i.e. hedge species are tall with no evidence they are flailed, heavily poached field no fencing for part of hedge to protect from livestock. Perennial rye grass, cocks' foot, |

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| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | ivy, cow parsley, creeping buttercup. |
| H160 | 2 | 1 | 152 | ≤4 | x | x | ü | x | x | x | ü | 1 | x | x | Livestock use of field. No fencing at hedgerow to protect. Lack of recent cutting management. |
| H161 | 1 | 2 | 23 | ≤4 | ü | ü | ü | x | x | x | x | 1 | x | x | Dense hedgerow recently planted. |
| H162 | 1.5 | 1.5 | 153 | 2 | ü | x | ü | ü | x | x | ü | 2 | x | x | Adjacent farmer access. Dense and well managed, gaps five percent connected to treeline at south and intact hedge at North. No associations. Hawthorn dominant with occasional buckthorn. Ground flora great willowherb, brambles, nettles, creeping thistle frequent, mugwort. |

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| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PROW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H163 | 1.5m | 1m | 151 | 2 | ü | ü | ü | x | x | x | ü | 2 | x | x | Hawthorn dominant with occasional buckthorn. Ground flora great willowherb, brambles, nettles, creeping thistle frequent, mugwort. Adjacent farmer access. Dense and well managed, gaps five percent. connected to treeline at south and intact hedge at North. |
| H164 | 3m | 2 | 133 | ≤4 | x | ü | ü | ü | x | x | x | 1 | 1 | x | Adjacent improved grassland used of livestock. No fencing to protect hedgerow from poaching and browsing. Lack of management. |
| H165 | ~2 | ~2 | 21 | 2 | x | x | x | x | x | x | x | 1 | x | x | Not accessed. Satellite imagery review suggests highly fragmented remnant hedge. |

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| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H166 | 3m | 2m | 61 | ≤4 | x | x | ü | x | x | x | x | 1 | x | x | Defunct leggy hedgerow. Bramble has replaced much of the hedge. Poached field with livestock to hedgerow base. |
| H167 | 1.5 | 1.5 | 560 | ≤4 | ü | ü | ü | x | x | x | x | 2 | x | x | Hedgerow adjacent to road. Well maintained, evidence of management. Field for livestock no fencing to protect hedgerow from poaching and browsing. |
| H170 | 1.5 | 1.5 | 106 | ≤4 | x | ü | ü | ü | x | x | x | 1 | 1 | x | Directly adjacent to amenity grassland. Narrow ditch at base. Adjacent allotments. Non-native planting present including pine and laurel. |
| H172 | 3 | 3 | 224 | ≤4 | x | ü | ü | ü | x | x | x | 2 | 1 | x | Poached field directly to hedgerow. No evidence of stick proofing hedge. Nettle, perennial |

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| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | rye grass, broad leaved dock, bramble. |
| H173 | 2 | 1 | 191 | 1 | x | ü | x | ü | x | x | x | 1 | 1 | x | Associated with dry ditch. connected to woodland at South end and intact hedge partway along length. Hawthorn dominant, ivy abundant. Heavily managed. ground flora: perennial rye grass dominant, ground ivy and bramble occasional. Oak standards. |
| H176 | 1.5 | 1 | 114 | ≤4 | ü | x | ü | x | x | x | ü | 1 | x | x | Amenity grassland to hedgerow boundary. |
| H178 | 1 | 0.5 | 70 | ≤4 | ü | x | ü | x | x | x | ü | 2 | x | x | Leggy hedgerow with gaps. Gaps colonised with bramble and rose. Cow parsley, cock's foot. |

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| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H179 | 3 | 2 | 267 | ≤4 | x | ü | x | ü | x | x | x | 2 | 1 | x | Dry ditch on southern field side. No associations. Links into treeline to east and woodland to west. Recently planted hawthorn hedge with bramble and nettle growth at base. |
| H181 | 3 | 2 | 94 | 1 | x | x | x | x | x | x | x | 2 | X | x | Hawthorn dominant defunct hedge with occasional elder and nettle at base; joins into other hedgerows east and west. three oak standards. |
| H182 | 4 | 4 | 122 | 2 | ü | ü | ü | x | x | x | x | x | x | x | No connections, adjacent to hardstanding track and dry ditch. No gaps. Blackthorn dominant, hawthorn occasional. Ground flora: brambles dominant, abundant willowherb species, hogweed, common nettle, hedge bindweed, hemp agrimony. |

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| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H183 | 1.5 | 1 | 139 | ≤4 | ü | x | x | x | x | x | ü | 2 | x | x | Leggy hedgerow with gaps. Gaps colonised with bramble and rose. Cow parsley, cock's foot. |
| H185 | 2 | 3 | 140 | 2 | x | x | ü | x | x | x | x | x | x | x | No associations or connections. No gaps. Hawthorn dominant, rare field elm and holly. ground Flora bracken, ivy abundant, nettles, ground ivy frequent, creeping thistle occasional. Oak standards rare. |
| H186 | 3 | 2 | 120 | 1 | x | x | x | x | x | x | x | 1 | 1 | x | Hawthorn dominant with nettles at base. Stock fence at base. Connects to woodland at West and hedgeline with trees to the east. No associations. |
| H187 | 1.5 | 2 | 356 | ≤4 | x | ü | ü | x | x | x | x | 1 | 1 | x | Hawthorn dominant with nettles at base. Stock fence at base. |

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| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | connects to woodland at West and hedgeline with trees to the east. No associations. |
| H188 | 3 | 2 | 94 | ≤4 | x | x | ü | x | x | x | x | x | x | x | 5 percent gaps, connected to treeline at East, no associations. Field maple dominant, occasional Hawthorn, field elm and elder; ground flora nettles, bracken, ground ivy. |
| H189 | 4m | 3m | 559 | 6 | ü | ü | ü | ü | x | x | ü | 4 | x | x | Forms part of garden boundary in sections. Presence of coppiced hazel, raise bank and ferns suggestive of historical hedgerow. However, was much degraded due to residential development. |
| H195 | 5 | 2 | 332 | ≤4 | x | x | ü | x | x | x | x | x | x | x | No gaps, no connections. Treeline runs adjacent. |

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| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H196 | 5 | 3 | 311 | ≤4 | x | x | ü | x | x | x | x | 1 | x | x | No gaps or associations; joined to intact hedge west end. Hawthorn and field maple abundant. Occasional guelder rose, blackthorn and elm. Ash rare. Ground flora: nettles and ivy abundant, ground ivy and spear thistle occasional. |
| H197 | 3 | 1.5 | 161 | ≤4 | x | x | x | x | x | ü | x | 3 | 1 | x | Holly, hazel, hawthorn, ash and dog wood: one break (10 percent), two canopy breaks (10 percent), one node, understory species (bramble and nettle), |

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| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H198 | 4 | 4 | 328 | ≤4 | x | x | ü | x | x | x | x | 2 | x | x | ash standard. Connected to one woodland and three hedges. |
| H199 | 2 | 3 | 107 | ≤4 | x | x | x | x | x | x | x | 2 | x | x | Hazel hedge, occasional silver birch standards. No associations; connects to hedgerows to the north and south. Lords and ladies, bracken, and bramble at base. |
| H201 | 5 | 2.5 | 586 | 4 | x | x | x | x | x | ü | x | x | 2 | x | Hawthorn dominant hedge with five oak standards, also grey willow, blackthorn sections with |

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| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | occasional hazel. Connects to woodland southeast and woodland to northeast, bramble and nettle at base. 2m wide set aside field margin. |
| H202 | 5 | 2.5 | 216 | 3 | x | x | x | x | x | x | x | x | x | x | Hazel, understory gap 1m, species bramble/bracken, break 10 percent, field maple standard, ash standards. |
| H206 | 1.5 | 1.5 | 159 | <4 | x | x | ü | ü | x | x | x | 2 | x | x | Hazel, honeysuckle, bramble, ivy taking over, laurel planting. |
| H208 | 2.5 | 2 | 123 | 5 | x | x | x | x | x | ü | ü | 2 | 1 | x | Field maple, hawthorn, goat willow, sycamore, hazel. Understory nettle, bramble, and Himalayan balsam. Hedge opposite, connected to two hedges and one woodland. |

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| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H209 | 2 | 1 | 157 | ≤4 | ü | ü | ü | x | x | ü | ü | 3 | x | x | Flailed this year (2021). Cocks foot, perennial rye grass, cleavers, cow parsley, ground ivy, ivy, lords and ladies. Scots pine. |
| H210 | 5 | 2 | 177 | ≤4 | x | ü | ü | x | x | x | x | x | 1 | x | No gaps. Hazel dominant with frequent blackthorn, occasional field maple, Hawthorn, rare honeysuckle. Bracken and bramble dominant ground flora. Associations of adjacent woodland and ditch. |
| H211 | 2.5 | 3 | 200 | ≤4 | x | ü | ü | ü | x | ü | x | 2 | 1 | x | Connected to woodland at North and dense scrub at south. Associated with dry ditch, no gaps. Elder and blackthorn abundant, field maple and privet rare, rare oak and goat willow |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|---|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | standards. Ground flora brambles, nettles. |
| H214 | 4 | 2 | 283 | ≤4 | x | x | x | ü | x | x | x | x | x | x | Ash and field maple standards. Hazel dominant with frequent field maple, blackthorn, hawthorn, occasional willow, dogwood, oak, dog rose. Ground flora nettle, bramble with hedge bindweed and herb Robert. |
| H219 | 1.5 | 2 | 318 | ≤4 | x | x | ü | ü | x | x | ü | 2 | x | x | Hedgerow with links to hedgerow to north and northwest, hedge opposite. No gaps more than 10 percent, hawthorn and oak standards. |
| H220 | 1.5m | 1m | 324 | ≤4 | x | ü | ü | ü | x | x | x | 1 | x | x | Hedgerow with recent management evident with hawthorn trees coppiced to hedgerow height. Hedgerow in |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | poor condition with heavy poaching at base and lack of field margin. Blackthorn dominant, occasional elder, dog rose, field maple and oak standards. |
| H226 | 1.5m | 2m | 94 | ≤4 | x | ü | ü | ü | x | x | x | 2 | x | x | Hawthorn dominant hedgerow with standards (mature oak). Bracken and bramble, dog rose present. No associations |
| H228 | 1 | 1 | 106 | 1 | x | x | x | x | x | x | x | x | x | x | Less than 1m tall for most of length. Bracken, bramble and blackthorn abundant. |
| H229 | 3 | 3 | 469 | 2 | ü | x | x | x | x | x | x | 2 | x | x | Hawthorn and blackthorn with dog rose and bramble; bracken, nettle. Connections to intact hedgerow at North and tree line to south and hedgerow |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|---|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | connection in middle. Occasional ash, oak, white poplar standards. No associations, access track. |
| H230 | 2 | 2 | 130 | 1 | x | ü | ü | x | x | ü | x | 2 | 1 | x | No gaps. Stream along north side. Connected to woodland at south and two hedges at north. Blackthorn dominant, bramble abundant. Ground flora false wood brome and tall fescue abundant, Juncus species frequent, hemp agrimony, bracken. |
| H234 | 3 | 3 | 124 | 2 | x | ü | x | x | x | ü | x | 2 | 1 | x | Hawthorn and blackthorn with dog rose and bramble. Bracken, nettle. Connections to intact hedgerow at north and tree line to south and hedgerow connection in Middle. Occasional |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | ash, oak standards. No associations, access track. |
| H235 | <2 | <2 | 113 | 3 | x | ü | x | x | x | x | x | x | x | x | Holly, hawthorn, blackthorn, goat willow. Shallow dry ditch with pendulous sedge and soft rush patches. |
| H237 | <2 | <2 | 96 | 4 | x | x | x | ü | x | x | x | x | x | x | Hawthorn, blackthorn and hazel with oak standards. |
| H242 | <2 | <2 | 408 | 3 | x | x | x | ü | x | x | x | x | x | x | Hawthorn, goat willow, blackthorn with bramble and oak standards |
| H246 | <2 | <2 | 457 | 2 | x | x | x | x | x | x | x | x | 1 | x | Dense hedge dominated by blackthorn, with frequent bramble and hawthorn, stand of hazel at southern end. Connected directly to broadleaved woodland. |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PROW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | Understorey is meadow foxtail, fleabane, smooth meadow grass, sweet vernal grass, thistle species. |
| H247 | 2.5 | 2 | 110 | 1 | x | x | x | x | x | x | ü | x | 2 | x | Hawthorn hedgerow. Connected to woodland on either end. No ditch or bank three oaks within hedge line. Ground-flora: speedwell, false brome. |
| H254 | <2 | <2 | 144 | 2 | x | x | x | ü | x | x | x | x | x | x | Leggy and sparse hawthorn and blackthorn hedge, with oak standards. |
| H255 | 4 | 4 | 102 | 4 | x | ü | x | ü | x | x | ü | x | x | 2 | Blackthorn dominant with elder and hawthorn. Pussywillow, ash and oak standards. Associated ditch and treeline at either end, two ponds and two treelines. |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | | Description and context |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H256 | <2 | <2 | 165 | 3 | x | x | x | ü | x | x | x | x | x | x | Mainly blackthorn and hawthorn hedge, with elm and elder and oak standards. Hedgerow not managed and is leggy with variable height and width |
| H257 | 5 | 4 | 108 | 4 | x | ü | ü | x | x | x | x | 1 | x | x | Zero percent gaps. hedge comprises, blackthorn dominant with occasionally hawthorn, hazel, elder. Sub canopy species, bramble, nettle. Associations, dry ditch under hedge. Hedge continues to the south and ends at residences. |
| H261 | 3 | 2 | 194 | / | ü | x | x | x | x | x | ü | 3 | x | x | Assumed, as part of garden boundary; not accessed. |
| H263 | <2 | <2 | 332 | 4 | x | x | x | x | x | x | x | x | x | x | Hawthorn, elder, elm, blackthorn. |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | | Description and context |
|-----------|------------|-----------|-----------|---------------------|--------------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/ bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H265 | <2 | <2 | 56 | 1 | x | x | x | x | x | x | x | x | x | x | Dominated by hawthorn. dense and well managed. understory species poor, ivy, cleavers, nettle, ground ivy. |
| H266 | <2 | <2 | 109 | 2 | x | x | ü | x | x | x | x | x | x | x | Blackthorn and hawthorn dominated. 10 percent gap across whole length. |
| H269 | <2 | <2 | 137 | 1 | x | x | x | x | x | x | x | x | x | x | Hawthorn and ivy. One large oak present |
| H271 | <2 | <2 | 302 | ≤4 | x | x | ü | ü | x | x | ü | x | x | x | Hawthorn hedge along field boundary. |
| H277 | 4 | 3 | 383 | 4 | x | ü | ü | ü | x | x | x | x | x | x | Dry ditch running along hedgerow, continuation at Eastern node, termination into treeline at northern node. Occasional mature oak standards. 5 percent breaks. |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-------------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | Hedgerow comprised of blackthorn and hawthorn and elder. |
| H279 | 2 | 4 | 93 | 3 | ü | x | x | x | x | x | x | x | x | x | Blackthorn, hawthorn and elder. Associated path. |
| H284 | 5 | 2.5 | 95 | 4 | x | x | x | x | x | x | x | x | 1 | x | Hazel dominant with hawthorn, blackthorn and elder. Connected to woodland. |
| H285 | 5 | 2 | 279 | 5 | x | ü | ü | ü | x | x | x | x | x | x | Dry ditch running along hedgerow. 10 percent breaks. occasional oak standards. Joins treeline at Eastern node. Hedge comprised of hawthorn, blackthorn, holly, field maple, elder, hazel. Subcanopy species include ivy, bramble, nettles. |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H288 | 5 | 3 | 163 | 4 | x | x | ü | x | x | x | x | x | x | x | Hazel dominant with blackthorn, elder, hawthorn, pussy willow, field maple, oak standards. |
| H289 | 5 | 3 | 310 | 4 | x | ü | ü | x | x | x | x | x | x | x | Hazel dominant with blackthorn, elder, hawthorn pussywillow, field maple, oak standards. Associated ditch. |
| H294 | 3 | 2.5 | 505 | 4 | ü | ü | ü | x | x | x | x | x | x | x | No connections ends at tree group at South. No gaps. footpath and river at South node. Hedge species blackthorn and hawthorn and occasional oak. oak stands. Understorey nettle, bramble, broad leaved dock. |
| H295 | <2 | <2 | 1073 | 4 | x | x | x | x | x | x | x | x | x | x | Connected hedgerow with four nodes. Four gaps for gates. Hedge comprised of, hawthorn, blackthorn and occasional field |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H297 | 2 | 2 | 119 | 2 | x | ü | ü | x | x | x | ü | 2 | x | x | maple and oak standards. Subcanopy bramble, nettle, ryegrass. Leggy hedgerow. Narrow course grassland strip. No evidence of stock proofing. |
| H302 | 2 | 3 | 661 | 3 | x | x | x | x | x | x | x | x | x | x | Hedge comprised of hawthorn, blackthorn, oak, understorey bramble, nettle, bindweed, x3 breaks at 3m width. |
| H307 | 2 | 2-3 | 98 | ≤4 | x | ü | ü | x | x | x | x | 2 | x | x | Improved grassland directly to hedgerow base. Leggy hedge. |
| H308 | <2 | <2 | 333 | ≤4 | x | x | ü | x | x | x | x | x | x | x | One node at NW point. No breaks. Hedge species, blackthorn, hawthorn, field maple. oak standards. SE node terminates at river. Understorey |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H309 | 2 | 2 | 203 | ≤4 | ü | x | ü | x | x | x | ü | 2 | x | x | comprised of nettles, bramble and bindweed. Dense hedgerow not leggy. Recent broadleaved tree planting on southern side of hedge however looks to be for a woodland plantation. |
| H312 | <2 | <2 | 338 | 3 | ü | x | x | x | x | x | x | x | x | x | Species-poor hedgerow connects to overgrown tree line at east. Hedge species blackthorn, hawthorn and oak standards; sub canopy layer nettle and bramble. Track at east end. |
| H313 | 3 | 3 | 134 | 3 | ü | x | x | x | x | x | x | x | x | x | Connects at north to tree line. East node ends with hard standing. Well managed hedgerow bordering camping |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|---|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | ground. Hedge comprises of hawthorn, ivy, blackthorn, oak, sub canopy lords and ladies, brambles. |
| H317 | <2 | <2 | 167 | 3 | x | x | x | x | x | x | ü | 2 | x | x | Hawthorn blackthorn, willow, elder, oak, connects to 2 hedges, one opposite. |
| H329 | 3 | 2.5 | 499 | 4 | x | x | x | ü | x | x | ü | 2 | x | x | Seven nodes (five are beyond the proposed DCO Order Limits). Hedgerow circles field. Comprised of hawthorn, blackthorn, elder, oak. Sub canopy nettle, bramble, bindweed. Oak standards |
| H331 | <2 | <2 | 577 | 3 | x | x | x | x | x | x | ü | 3 | x | x | Elder, hawthorn, blackthorn; ground flora hogweed thistle, with alder, bramble and oak. |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|---|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H334 | 2 | 2 | 154 | ≤4 | x | ü | ü | x | x | x | x | 2 | x | x | Connected to three hedges, one opposite. Fencing to protect hedgerow from livestock. Ditch with running water. Not flailed in current year but has in the past been well managed. Nettle, cleavers, cock's foot. |
| H335 | 1.5 | 1 | 167 | ≤4 | ü | x | ü | x | x | x | ü | 1 | x | x | Recently planted, heavily managed hedgerow. No stock proofing on field side. |
| H338 | <2 | <2 | 204 | ≤4 | x | x | ü | x | x | x | ü | 3 | x | x | Many standards. Previously hedgerow. Blackthorn oak, hawthorn, ivy, sycamore bramble elder, willow, hogweed. Connected to three hedges, one opposite |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H339 | 1.5 | 1 | 65 | ≤4 | ü | ü | ü | ü | x | x | ü | 1 | x | x | Adjacent road leading to stables and private garden. No evidence of non-native species. |
| H340 | <2 | <2 | 34 | ≤4 | x | x | x | x | x | x | x | 1 | x | x | Hawthorn and blackthorn visible. Boundary to residence in part. |
| H341 | <2 | <2 | 88 | ≤4 | ü | x | x | ü | x | x | ü | 1 | x | x | Blackthorn, hazel, hawthorn, ivy. Very dense with some mature trees which may offer bat potential. Understorey comprises cocksfoot, fleabane, hogweed, Yorkshire fog, bedstraw, Timothy, nettle and occasional lord and ladies. Boundary to residence in part. |
| H344 | 2 | 2 | 391 | ≤4 | x | x | x | x | x | x | x | x | x | x | Hawthorn, blackthorn, field maple, hazel and oak within hedgerow. Dense and fairly unmanaged, ivy. Semi improved |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-------------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|---|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | grassland species including Yorkshire fog, nettle, cock's foot, false oat grass, creeping thistle, Timothy, bedstraw, knapweed, dense bracken. |
| H346 | <2 | <2 | 43 | 3 | x | x | x | x | x | x | x | x | x | x | Hawthorn, blackthorn and hazel. One large oak within this stretch. Common nettle, mayweed, perennial ryegrass, hogweed, greater willowherb, fat hen understorey |
| H349 | 4 | 5 | 131 | 5 | x | ü | ü | ü | x | x | x | 2 | x | x | No stock proofing. Improved grassland to hedgerow base. Landowner wanting to manage with new planting this year. |
| H358 | <2 | <2 | 19 | 3 | x | x | x | ü | x | x | x | x | x | x | Hawthorn and blackthorn with some bramble. Partially managed. Mature oaks. |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | | Description and context |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H359 | <2 | <2 | 123 | 1 | x | x | x | x | x | x | x | x | x | x | Hawthorn and bramble. Continues beyond extent of survey area. |
| H360 | <2 | <2 | 58 | 1 | x | x | x | x | x | x | x | x | 1 | x | Dominant snowberry with occasional elder on woodland edge. |
| H363 | 1 | 1 | 78 | 3 | x | x | x | x | x | x | x | x | 1 | x | Hawthorn grading into blackthorn. Edge of woodland heavily managed. some elder mixed in. |
| H369 | <2 | <2 | 19 | 1 | x | x | x | x | x | x | x | x | x | x | Hawthorn and snowberry and cypress |
| H370 | <2 | <2 | 28 | 1 | x | x | x | x | x | x | x | x | x | x | Laurel, cypress, snowberry, blackthorn |
| H371 | <2 | <2 | 35 | 3 | x | x | x | x | x | x | x | x | x | x | Box, hawthorn, elder. |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | | Description and context |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PROW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H373 | <2 | <2 | 215 | 2 | x | x | x | ü | x | x | x | x | x | x | Hawthorn with oak standards. |
| H378 | <2 | <2 | 186 | 3 | x | x | x | ü | x | x | x | x | x | x | Hawthorn, blackthorn with oak standards. |
| H380 | <2 | <2 | 299 | 2 | x | x | x | x | x | x | x | x | x | x | Dominant blackthorn with occasional holly, dense patches of bramble. understory is well developed; Yorkshire fog being dominant, frequent broadleaved Dock, meadow foxtail, hogweed, cock's foot, brome, cleavers, occasional nettle and lords and ladies. |
| H382 | 3-4 | 1-2 | 145 | 2 | x | x | ü | x | x | x | x | 2 | x | x | Dominant - hawthorn, abundant - elm, frequent - plum, occasional - willow. Connected to hedgerow on one end, 5m away from hedgerow on opposite end. No |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H383 | 4 | 3 | 269 | ≤4 | x | x | ü | x | x | x | x | 2 | x | x | gaps. Ground flora - nettles, cinquefoil, dock. Livestock field to hedgerow. Stock fencing to protect hedge of both sides. |
| H384 | 2 | 1 | 142 | ≤4 | x | x | ü | x | x | x | x | x | x | x | Dominant - blackthorn, abundant - bramble, frequent - hawthorn, occasional - aspen, rare - oak. No gaps. Ground flora – lords and ladies, thistle |
| H406 | 3 | 2 | 206 | ≤4 | ü | x | x | ü | x | x | x | 1 | 1 | x | Mature hedge alongside line of trees on Henfield Road. |
| H422 | 3m | 2m | 349 | 3 | ü | x | ü | x | x | ü | ü | 3 | 1 | x | Hedge comprising hawthorn, elder, oak. Ground flora of hogweed, docks, cow parsley, creeping buttercup, cleavers, creeping thistle, bird's foot trefoil, |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | | Description and context |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| | | | | | | | | | | | | | | | lords and ladies, nettle, bramble, wild strawberry, dove's foot crane's-bill. |
| H424 | 1.5 | 1 | 475 | ≤4 | x | x | ü | x | x | x | x | x | x | x | Hawthorn, blackthorn, field maple with mature oak every 50m. Leggy hedgerow. Recent management flailed but no evidence of planting or laid |
| H425 | 1.5 | 1 | 136 | ≤4 | x | x | ü | x | x | x | x | x | x | x | Hawthorn, blackthorn, field maple with mature oak every 50m. Leggy hedgerow. Recent management flailed but no evidence of planting or laid. |
| H433 | 2 | 1.5 | 303 | 2 | x | ü | ü | x | x | ü | x | 3 | 2 | x | Species poor hedge comprising hawthorn and elder; located along field boundary, connecting to a woodland strip and three hedges. Ground flora of lords |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|---|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | and ladies, cleavers, docks, nettles. |
| H435 | <2 | <2 | 238 | 2 | x | ü | x | x | x | x | x | 3 | x | x | Hawthorn, blackthorn, immature oak. With dry ditch. Leggy. |
| H444 | 2-4 | 2-4 | 176 | ≤4 | x | x | x | x | x | ü | x | 3 | 1 | x | Oak, ash with dense hawthorn and blackthorn. False oat grass, broadleaved dock, lesser celandine, ground ivy, dog's mercury. |
| H450 | 2 | 2 | 93 | ≤4 | x | x | ü | x | x | ü | x | 3 | x | 1 | Short hedge dividing fields, connected to hedges to north and south at western end and to south at western end. |
| H455 | 2-4 | 2-4 | 88 | 3 | x | x | ü | x | x | x | x | x | x | x | No gaps, line of trees parallel. Blackthorn dominant, occasional Hawthorn and field maple, apple and oak standards rare. Ground |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | flora brambles, privet frequent, bird's-foot trefoil, docks, creeping thistle. |
| H469 | 2-4 | 2-4 | 82 | 3 | x | x | x | ü | x | x | x | x | x | x | Mature oak, field maple and ash trees. Hedge composed of hawthorn and field maple and dogwood. |
| H475 | 1 | 1 | 146 | 2 | x | x | x | x | x | x | x | x | x | x | Oak and hawthorn abundant. |
| H476 | 2-3 | 2 | 187 | 2 | x | x | x | x | x | x | x | x | x | x | Hawthorn and blackthorn dominant. |
| H477 | 4 | 2-3 | 150 | 1 | x | x | x | x | x | x | x | x | x | x | Blackthorn dominant, hawthorn. Quite leggy. Occasional semi mature oak. |
| H479 | 4 | 2-3 | 165 | ≤4 | x | x | x | x | x | x | x | x | x | x | Blackthorn dominant. Quite bushy and outgrown especially to north. |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | | Description and context |
|-----------|------------|-----------|-----------|---------------------|----------------------------|----------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H482 | 2 | 2 | 298 | ≤4 | x | ü ⁹ | ü | ü | x | x | x | x | x | x | Dogwood, field maple, blackthorn, hawthorn, hazel, oak. Mature oak in hedgerow. Dry ditch to south with grassy verge of bramble, false oat grass, meadow foxtail, hogweed. Set on a small bank. No gaps. Ground flora, primrose. |
| H487 | <2 | <2 | 446 | ≤4 | x | x | x | x | x | x | x | x | x | x | Hazel, Hawthorn, dogwood, blackthorn, field maple. |
| H497 | 2 | 1.5 | 121 | ≤4 | x | x | x | x | x | x | x | x | x | x | Field boundary hedge comprising blackthorn, hazel, dog wood, bramble, hawthorn dominant. Likely to be managed during the year. Base of hedgerow dominated by bramble |

⁹ Both ditch and bank present.

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|---|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PROW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | with grasses forming a 1.5m margin. |
| H500 | 1.5 | 1.5 | 108 | 3 | x | x | x | x | x | x | x | x | x | x | Hazel, blackthorn dominant, ash. Ground flora comprises grassland species and bramble. |
| H503 | 2 | 1.5 | 88 | 3 | x | ü | x | x | x | x | x | x | x | x | Blackthorn dominant, hawthorn occasional. 20 percent gaps. Adjacent to dry ditch and treeline. Flora, docks, cleavers, nettles, stitchwort, brambles. |
| H505 | <2 | <2 | 546 | 2 | x | x | x | x | x | x | x | x | x | x | Blackthorn, hawthorn, field maple. |
| H506 | 1.5 | 2 | 159 | 2 | x | x | x | x | x | x | x | x | x | x | Blackthorn dominant, bramble, ash, semi mature oak at northern end. |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | | Description and context |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H507 | <2 | <2 | 172 | 3 | x | ü | ü | x | x | x | x | x | x | x | Hawthorn and blackthorn abundant. Oak frequent. 10 percent gaps. Associated ditch with stream. Flora nettle, water dropwort dominant, wood dock, forget me nots. |
| H510 | 2 | 4 | 69 | 3 | x | ü | ü | x | x | x | x | x | x | x | Same as hedgerow to North separated by 10m gap. Length 50m. Associated with pond. No hedgerow connections. |
| H511 | 1.5 | 2 | 445 | ≤4 | x | ü | x | ü | ü | x | ü | 3 | x | 1 | Oak, hawthorn, blackthorn, elder; three 10m gaps. Associated with pond. three hedgerow connections. |
| H512 | 1 | 1 | 147 | ≤4 | x | ü | ü | ü | x | x | x | 1 | x | x | Blackthorn, hawthorn, oak. |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | | Description and context |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|------|---|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H514 | 3 | 4 | 170 | 3 | x | x | x | ü | x | x | x | x | x | x | Hawthorn and blackthorn with oak standards. False oat grass dominates ground flora. |
| H515 | <2 | <2 | 169 | 3 | x | ü | ü | x | x | x | x | x | x | x | Blackthorn dominant, dog rose, goat willow frequent. Hawthorn, maple and oak trees occasional. Associated to wet ditch. Ground flora: stitchwort, bluebells, common vetch, brambles, speedwell, bracken, bindweed, horsetail. |
| H516 | 4 | 3 | 123 | 3 | x | ü | x | x | x | x | x | 1 | x | x | Blackthorn dominant with occasional oak trees and Hawthorn. Associated with wet ditch and hedge at North end. Flora, speedwell, docks, ground ivy, cleavers, Lords and ladies, wood avens, common vetch |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | | Description and context |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|------|---|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H517 | <2 | <2 | 223 | 2 | x | x | x | x | x | x | x | x | x | x | Unmanaged blackthorn dominant hedge with occasional oak trees and hawthorn. Creeping cinquefoil, oxeye daisy and forget me nots at base. |
| H518 | 4 | 5 | 379 | ≤4 | x | ü | ü | ü | ü | x | x | 1 | x | x | Oak, hawthorn, blackthorn, elder, oak standards to 20m in height. Bramble, docks, ground ivy, nettles, Lords and ladies, juncus species, cow parsley, herb Robert, ivy, primrose. |
| H519 | 1.5 | 1.5 | 161 | ≤4 | x | ü | ü | ü | ü | x | x | 1 | 2 | x | Oak, hawthorn, blackthorn, elder, oak standards to 20m in height. Bramble, docks, ground ivy, nettles, Lords and ladies, juncus species, cow parsley, herb Robert, ivy, primrose. |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | | Description and context |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H520 | 2 | 1.5 | 205 | ≤4 | ü | x | ü | x | x | x | ü | 1 | 2 | x | Oak, hawthorn, blackthorn, elder, oak standards to 20m in height. Bramble, docks, ground ivy, nettles, Lords and ladies, juncus species, cow parsley, herb Robert, ivy, primrose. |
| H521 | <2 | <2 | 22 | ≤4 | x | ü | x | x | x | x | x | x | x | x | Short intact species poor hedgerow, adjacent to ditch containing shallow flowing water (drainage). Plants at base consist of nettles, bramble, red campion, cow parsley, broad leaved dock, thistle. |
| H531 | 3 | 2 | 173 | 2 | x | x | x | x | x | x | x | 2 | 1 | x | Intact species poor hawthorn hedgerow with mature oak trees and willow species. Gap present of more than 5m containing bramble. Ground vegetation dominated by nettles, bramble, |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | creeping buttercup, thistle. Central column unmanaged, potentially trimmed on occasion. |
| H539 | <2 | <2 | 127 | 2 | x | x | x | x | x | x | x | x | x | x | Intact species poor hawthorn hedgerow with occasional elder and bramble. Ground flora contains cleavers, dwarf thistle, red dead nettle, buttercup. |
| H540 | <2 | <2 | 100 | 3 | x | x | x | ü | x | ü | x | 2 | 2 | x | Intact species poor hedgerow dominated by beech with occasional hawthorn and small oak trees. Ground flora consists of bramble, hawthorn saplings, cow parsley, ivy. |
| H541 | <2 | <2 | 158 | 2 | x | x | x | ü | x | ü | x | 3 | 1 | x | Intact species poor hedgerow dominated by beech with occasional small ash trees. Ground floors consists of |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|---|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | bramble, ragwort, cleaver, nettles, broadleaved dock, ivy. Cherry laurel present within hedge. |
| H542 | <2 | <2 | 200 | 1 | x | x | x | ü | x | x | ü | x | x | x | Intact species poor hedge of hawthorn. Ground flora consists of bramble, cleaver, dead nettle, buttercup, cow parsley, prickly ox tongue, cinquefoil, dandelion, ivy. Heavily damaged from traffic. |
| H543 | <2 | <2 | 104 | 1 | x | x | x | ü | x | x | x | x | x | x | Intact species poor blackthorn hedgerow covered in bramble. surrounding plants are cow parsley, cleaver, cinquefoil, ivy, dead nettle, old man's beard, dandelion, one gap for field access. |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H544 | <2 | <2 | 56 | 3 | x | x | x | ü | x | x | ü | x | x | x | Intact species poor hedgerow containing dog rose, blackthorn and mature oak trees. Ground flora contains cleavers, dead-nettle, cinquefoil, bramble, cow parsley, clematis, ground ivy. |
| H545 | <2 | <2 | 192 | 1 | x | x | x | x | x | x | ü | 1 | x | x | Intact species poor Hawthorn hedgerow, quite young. Ground flora contains nettles, cock's foot, common hogweed |
| H546 | <2 | <2 | 204 | 1 | x | x | x | ü | x | x | ü | 1 | x | x | Defunct species poor Hawthorn hedgerow with a single mature oak tree. Very gappy and leggy, large gaps of more than 5m. Ground flora contains nettles, bramble, buttercup, white dead nettle |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | | Description and context |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H548 | <2 | <2 | 512 | 2 | x | x | x | x | x | x | x | 2 | x | x | Intact species poor hedgerow with hawthorn and hazel and occasional old man's beard. Ground flora contains cow parsley, ground ivy, cock's foot, nettles |
| H549 | 3 | 2 | 147 | 2 | x | x | x | x | x | x | x | 1 | 1 | x | Hawthorn, elder. In between arable fields |
| H550 | <2 | <2 | 34 | 2 | x | x | x | x | x | x | x | 1 | x | x | Intact species poor hedgerow containing Hawthorn and hazel with occasional old man's beard. Ground flora contains nettles, bramble, cock's foot, ground ivy, cow parsley |
| H551 | ~2 | ~2 | 59 | 1 | x | x | x | x | x | x | x | 2 | x | x | Intact species poor hawthorn hedgerow with single ash tree, base consists of bramble, |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|---|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PROW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| H553 | <2 | <2 | 29 | 1 | x | x | x | x | x | x | x | x | x | x | nettles, cockspur foot, clover, ground ivy. |
| H577 | <2 | <2 | 80 | 2 | x | x | x | x | x | x | x | x | x | x | Intact species poor hedgerow comprising hawthorn and occasional elder, very damaged by flailing and vehicles. Ground flora contains cow parsley, bramble, silverweed, cleavers, yarrow. |
| H579 | <2 | <2 | 237 | 2 | x | x | x | x | x | x | x | x | x | x | Highly fragmented hedgerow, fence line in between horse grazed fields and track. Contains |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|---|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | occasional bramble, clematis, blackthorn and isolated hawthorn trees. |
| H580 | 3 | 1.5 | 488 | 3 | ü | x | x | x | x | x | ü | 1 | x | x | Between grazed field and road; Hawthorn, dogwood blackthorn hedge with occasional viburnum sp. and ash, bramble and ivy. |
| H581 | <2 | <2 | 192 | 2 | ü | x | x | x | x | x | ü | x | x | x | Remnant hedge on fence line in between arable/grazed field and road. Some single Hawthorn trees. |
| H589 | <2 | <2 | 246 | ≤4 | x | x | ü | ü | x | x | ü | x | x | x | Intact species poor hedgerow containing hazel, hawthorn and holly, blackthorn and dogwood hedge with field maple and elder. One gap about 6m wide. Ground flora contains nettles, cow |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | Description and context | |
|-------------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|-------------------------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | | Pond |
| | | | | | | | | | | | | | | | parsley, white dead nettle, bramble |
| H590 | <2 | <2 | 216 | 2 | ü | x | x | x | x | x | ü | x | x | x | Intact species poor hedge, hawthorn and hazel. |
| H598 | <2 | <2 | 129 | ≤4 | x | x | x | ü | x | x | ü | 1 | x | x | Species poor intact hedge ground flora consisting of nettle, bramble, Cocks foot, cow parsley, thistle ragwort, buttercup, old man's beard. |
| H599 | ~2 | ~2 | 125 | ≤4 | ü | x | x | ü | x | x | ü | 1 | x | x | Intact species-poor hawthorn hedgerow comprising hawthorn with occasional oak and ash. Parallel to hawthorn hedgerow on other side of road. Ground flora contains nettles, bramble, cleavers, cow parsley, buttercup, prickly ox-tongue, ground ivy. Damaged by cars/tractors. |

| Hedge Ref | Dimensions | | | Associated Features | | | | | Connections | | | | | | Description and context |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|------|--|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H600 | ~2 | ~2 | 323 | 2 | ü | x | x | x | x | x | x | 1 | x | x | Woody species: hawthorn and oak. Ground flora present: ivy, cleavers, dandelion, brambles, nettles, perennial rye grass, cock's foot, hogweed. |
| H601 | ~2 | ~2 | 93 | 2 | ü | x | x | x | x | x | x | 1 | x | x | Woody species: hawthorn and oak. Ground flora present: ivy, cleavers, dandelion, brambles, nettles, perennial rye grass, cock's foot, hogweed. |
| H603 | 1 | 1 | 191 | ≤4 | x | x | x | x | x | x | x | x | x | x | Hawthorn, dogwood, hawthorn, elder. |
| H604 | ~2 | ~2 | 90 | ≤4 | x | x | x | x | x | x | x | x | x | x | Intact hedge, with common reed, hawthorn only hedge. |
| H605 | ~2 | ~2 | 358 | ≤4 | ü | x | x | x | x | x | x | 2 | x | x | Ash, viburnum, blackthorn, clematis, hawthorn and bramble. |

| Hedge Ref | Dimensions | | | Associated Features | | | | Connections | | | | | | | Description and context |
|-----------|------------|-----------|-----------|---------------------|----------------------------|--------------|--------------------|---------------|---------------------------------|-----------------------|----------------|-------|----------|------|---|
| | Height (m) | Width (m) | Length(m) | Woody Species | Road/track/bridleway/ PRoW | Bank / Ditch | Gaps less than 10% | Trees per 50m | 3 Woodland ground flora species | Connections scoring 4 | Parallel hedge | Hedge | Woodland | Pond | |
| H606 | ~2 | ~2 | 167 | ≤4 | x | x | x | x | x | x | x | 2 | x | x | Gappy remnant hedge. Can't fully assess. Bramble and elder present. Understorey contains nettle as dominant species. Photo taken from east looking west. |
| H607 | ~2 | ~2 | 134 | 3 | x | x | x | x | x | x | x | x | x | x | Blackthorn, hawthorn and elder hedge, defunct. |
| H610 | 3 | 3 | 183 | ≤4 | ü | x | x | ü | x | x | x | 2 | x | x | Mature hedge along western edge of woodland along Kent Street. Oak, hawthorn, blackthorn, elder. Ground flora: primrose, water dropwort, nettle, ivy, forget me not, lords and ladies, docks, dog's mercury, marshwort, coltsfoot, juncus sp., cleavers |

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4.22.7



Volume 4, Appendix 22.7

Great Crested Newt survey report



Contents

| | | |
|-----------|--|-----------|
| 1. | Introduction | 3 |
| 1.1 | Background | 3 |
| 1.2 | Purpose of this Appendix | 3 |
| 1.3 | Structure of this Appendix | 3 |
| 2. | Methods | 5 |
| 2.1 | Desk study | 5 |
| 2.2 | Habitat Suitability Index assessment | 5 |
| 2.3 | eDNA sampling | 7 |
| 2.4 | Survey limitations | 7 |
| 3. | Results | 8 |
| 3.1 | Desk study | 8 |
| 3.2 | Habitat Suitability Index assessment | 8 |
| 3.3 | eDNA sampling | 10 |
| 4. | Summary | 12 |
| 5. | Glossary of terms and abbreviations | 13 |
| 6. | References | 14 |

| | | |
|-----------|-----------------------------------|----|
| Table 3-2 | Summary of HSI assessment results | 9 |
| Table 3-3 | eDNA sampling results | 10 |

| | |
|------------|--|
| Figure 1.1 | Study boundary |
| Figure 1.3 | Waterbodies visualisation |
| Figure 1.3 | Waterbodies surveyed |
| Figure 2.1 | GCN desk study results |
| Figure 3.1 | Habitat suitability index |
| Figure 3.2 | eDNA results |
| Figure 4.1 | Waterbodies not surveyed due to limited access |

Annex A Figures
Annex B Habitat suitability index
Annex C Waterbodies not surveyed

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1. Introduction

1.1 Background

- 1.1.1 This Appendix should be read in conjunction with **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the Environmental Statement (ES) which is provided in support of the delivery of an Environmental Impact Assessment (EIA) associated with the Rampion 2 Offshore Wind Farm, hereafter referred to as the 'Proposed Development' or 'Rampion 2'.
- 1.1.2 This Appendix describes the survey method and summarises the results of great crested newt (GCN) surveys undertaken between 2021 and 2023.
- 1.1.3 Where appropriate, reference is made in this Appendix to the Study Area (which is shown on **Figure 1.1, Annex A**). This is defined as the area within the proposed DCO Order Limits, which are outlined in **Chapter 4: The Proposed Development, Volume 2** of the ES, plus a 250 metre (m) buffer around it. The size of the buffer is based on the average dispersal distance of GCN from a breeding water body (Oldham *et al*, 2000).

1.2 Purpose of this Appendix

- 1.2.1 The onshore elements of the Proposed Development cross, or are adjacent to, habitats with the potential to support GCN. This Appendix outlines the methodologies used and summarises the results of GCN Habitat Suitability Index (HSI) assessments undertaken in 2020-2023, and the environmental DNA (eDNA) surveys conducted between 2021-2023.
- 1.2.2 This Appendix does not include requirements for mitigation and / or compensation in respect of GCN, nor does it assess the potential impacts that proposals might have upon them, as both issues are covered in detail as part of the EIA (**Chapter 22: Terrestrial ecology and nature conservation, Volume 2**).

1.3 Structure of this Appendix

- 1.3.1 The remainder of this Appendix is structured as follows:
- **Section 2: Methods;**
 - **Section 3: Results;**
 - **Section 4: Summary;**
 - **Section 5: Glossary**
 - **Section 6: References:**
 - **Annex A: Figures;**
 - **Annex B: Habitat suitability index; and**

- **Annex C: Waterbodies not surveyed.**

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2. Methods

2.1 Desk study

- 2.1.1 A desk study was undertaken in 2020 to identify waterbodies within 250m of the EIA Scoping Boundary¹ based on Ordnance Survey (OS) mapping and satellite imagery. Records of GCN presence was also obtained from Sussex Biological Records Centre (SxBRC), National Biodiversity Network (NBN) Gateway, A27 Arundel Bypass Environmental Assessment Report (Highways England, 2019), MAVES (MAVES, 2017; MAVES, 2018) and Multi-Agency Geographic Information for the Countryside (MAGIC) (Department for Environment, Food and Rural Affairs (Defra), n.d.). This information was used to inform design of the field surveys.
- 2.1.2 Subsequently, to ensure the data informing the assessment is current, and to reflect the proposed DCO Order Limits; the desk study was updated in May 2023 (see [Appendix 22.2: Terrestrial ecology desk study](#)) ([Appendix Document Reference: X.X.X](#)).

2.2 Habitat Suitability Index assessment

- 2.2.1 Where accessible, waterbodies within 250m of the proposed DCO Order Limits were assessed for their suitability to support GCN using the HSI assessment methodology (Oldham *et al*, 2000). The HSI is a numerical index derived by scoring ten habitat variables in the field and assigning each water body a Suitability Index (SI). **Figure 2.2 (Annex A)** shows all waterbodies that were surveyed using the HSI.
- 2.2.2 The habitat variables assessed for the HSI include:
- S1: Location.
 - S2: Water body area (m²) - an estimate of surface area when water is at its highest level (excluding flooding events) rounded up to nearest 50m². The HSI score is read off the graph provided in the guidelines. (If the water body is more than 2,000m², this factor is omitted from the HSI calculation).
 - S3: Years out of ten that water body dries out - based upon local knowledge if available (e.g. owner) and professional judgement; taking a precautionary approach on assessments made after untypical rain shortages. If the surveyor is unsure and cannot judge how often a water body dries up, 'sometimes dries' should be used.
 - S4: Water quality – where possible, some invertebrate sampling with a water body net should be done. Be aware that invertebrate levels vary with seasons. The assessment of 'Bad' water quality should only be made where there is clear evidence of continuous and long-term pollution (e.g. large-scale tipping of

¹ This is the boundary showing possible areas for development within the EIA Scoping Report (Rampion Extension Development Limited (RED), 2020).

refuse, or spillage of hydrocarbons) and the presence of certain invertebrates. Fish are unlikely to be present in waterbodies with bad water quality. If in doubt or unable to gather evidence, take a precautionary approach and mark up, not down.

- S5: Shade – assessed for the first metre from the shore, around the water body perimeter, and not over the whole water body. Shade is from trees, scrub or buildings, but not emergent vegetation.
- S6: Waterfowl – an assessment of ‘Major’ is only made if the bank is denuded of vegetation and there is no submerged vegetation. Moorhens are not included.
- S7: Fish – where possible use local knowledge (the owner or site users) or netting to assess small fish numbers. Waterbodies that occasionally dry out are unlikely to have more than minor fish populations. Assess as ‘Major’ if known that recent stocking has occurred, or there is evidence of heavy use by anglers.
- S8: Water body count (No. waterbodies / km in 1km radius)
- S9: Terrestrial habitat – assessed within a 500m radius to the water body with connectivity.
- S10: % of macrophyte cover – assessed based upon the water body surface. This includes floating plants, both free-floating and rooted, submerged plants if they are at the surface, and emergent plants, but not filamentous algae.

2.2.3 The overall suitability of waterbodies was evaluated by calculating the geometric mean of the SI, resulting in a score from 0-1, where:

- <0.5 = poor,
- 0.5 - 0.59 = below average,
- 0.6 - 0.69 = average,
- 0.7 - 0.79 = good, and
- >0.8 – 1 = excellent;
- with 0 indicating that the water body is unsuitable and 1 being optimal.

2.2.4 As the HSI is a tool for assessment, and in isolation cannot permit conclusions of presence or absence of GCN, the surveyors also relied upon their experience to further judge the suitability of a water body to support GCN. For example, as per Criteria S3, S9 and S10, if a water body was dry at the time of visit, but otherwise supported features with potential to support GCN (such as suitable terrestrial vegetation surrounding, or evidence of aquatic plants, as described above), it was not scoped out of further assessment. The values previously mentioned of greatest suitability for GCN were assumed out of caution. The majority of HSI assessments were carried out between May 2021 and June 2022, with the remainder completed in April 2023.

2.3 eDNA sampling

- 2.3.1 All accessible waterbodies containing water at the time of visit were surveyed to confirm the presence / likely absence of GCN using eDNA sampling techniques, following methods as set out in Biggs *et al.* (2014). This method requires one sampling visit by GCN licenced surveyors between 15 April and 30 June inclusive.
- 2.3.2 All samples collected were sent to a Natural England accredited laboratory² for analysis. **Figure 2.2 (Annex A)** shows all waterbodies that were surveyed using eDNA sampling.

2.4 Survey limitations

- 2.4.1 Of the waterbodies identified within the Study Area, land access was permitted for 199 of 264 waterbodies. The remaining 65 were not accessible (**Figure 4.1, Annex A and Table C-1, Annex C**).
- 2.4.2 A total of 31 waterbodies were sampled 12 days after the recommended survey window in July 2021 as a result of land access restrictions. Where land access was possible in 2022 or 2023, update eDNA surveys were undertaken at these waterbodies. However, 16 were not revisited due to access restrictions or as design changes meant they were no longer of relevance. When a sample is taken outside the recommended survey window, only a subsequent positive result from the lab analysis can be deemed as being a robust result, for instance, a negative result cannot be relied upon due to the degradation of DNA over time. The resultant negative results are noted as 'inconclusive constrained' within **Section 3**.
- 2.4.3 A total of 21 waterbodies were subject to HIS, but no eDNA samples were taken due to them being dry. An additional 16 waterbodies were subject to HSI but no eDNA samples were taken due to availability of sampling kits.
- 2.4.4 Three waterbodies were subject to eDNA testing only as HSI data was not collected by the surveyor.

² NatureMetrics, DNA-Based Monitoring and Surescreen Scientific Ltd.

3. Results

3.1 Desk study

3.1.1 A total of 264 waterbodies were identified within the Study Area, with 17 of these located within the proposed DCO Order Limits. These waterbodies are shown on **Figure 2.1: Location of Waterbodies (Annex A)**.

3.1.2 Desk study results demonstrate that GCN occurs frequently across the Study Area. A total of 156 records were returned from within 2km of the proposed DCO Order Limits. Of these records, four records were from within the proposed DCO Order Limits while a further 15 were recorded within a 250m buffer of it. These are shown in **Appendix 22.2: Terrestrial ecology desk study, Volume 4**. (Appendix Document Reference: X.X.X)

3.2 Habitat Suitability Index assessment

3.2.1 A total of 196 waterbodies within the Study Area were subject to HSI assessments between July 2020 and April 2023. Of these, 13 were located within the proposed DCO Order Limits while the remainder were located within the 250m buffer.

3.2.2 The following HSI scores were obtained for the 13 waterbodies within the proposed DCO Order Limits:

- Two waterbodies were assessed as 'excellent' suitability to support GCN;
- One water body was assessed as 'good' suitability to support GCN;
- Five waterbodies as 'average' suitability to support GCN;
- Two waterbodies as 'below average' suitability to support GCN; and
- Three waterbodies as 'poor' suitability to support GCN.

3.2.3 For the 183 waterbodies outside the proposed DCO Order Limits but within the 250m buffer; the following HSI scores were obtained:

- 28 waterbodies were assessed as 'excellent' suitability to support GCN;
- 43 waterbodies as 'good' suitability to support GCN;
- 36 waterbodies as 'average' suitability to support GCN;
- 31 as 'below average' suitability to support GCN; and
- 45 as 'poor' suitability to support GCN.

3.2.4 A summary of these results is shown in **Table 3-1** and **Figure 3.1 (Annex A)**. The full HSI values for each water body are shown in **Table B-1 (Annex B)**.

Table 3-1 Summary of HSI assessment results

| Water body ID | Location of water body | HSI Category |
|---|---|---------------------|
| 37, 130 | Within the proposed DCO Order Limits | Excellent |
| 81 | Within the proposed DCO Order Limits | Good |
| 38, 192, 204, 210, 269 | Within the proposed DCO Order Limits | Average |
| 112, 118 | Within the proposed DCO Order Limits | Below Average |
| 40, 68, 150 | Within the proposed DCO Order Limits | Poor |
| 10,16, 35, 36, 42, 43, 45, 47, 94, 105, 110, 114, 120, 128, 129, 131, 134, 136, 185, 186, 187, 190, 195, 199, 208, 211, 216, 219, | Within 250m buffer of the proposed DCO Order Limits | Excellent |
| 1, 3, 14, 41, 44, 48, 50, 52, 54, 55, 67, 71, 74, 76, 82, 89, 91, 92, 99, 111, 123, 124, 125, 126, 135, 138, 170, 172, 173, 174, 176, 179, 180, 182, 183, 184, 194, 196, 198, 203, 207, 212, 221 | Within 250m buffer of the proposed DCO Order Limits | Good |
| 2, 4, 8, 11, 49, 53, 62, 63, 65, 69, 70, 72, 75, 77, 83, 84, 90, 93, 96, 116, 119, 139, 151, 159, 160, 163, 168, 175, 177, 178, 188, 189, 193, 197, 206, 218 | Within 250m buffer of the proposed DCO Order Limits | Average |
| 5, 12, 13, 15, 46, 56, 57, 66, 78, 85, 86, 97, 106, 122, 132, 140, 146, 149, 152, 157, 164, 167, 181, 191, 200, 201, 209, 213, 214, 217, 220, | Within 250m buffer of the proposed DCO Order Limits | Below Average |
| 6, 7, 9, 39, 51, 58, 60, 61, 64, 73, 79, 80, 87, | Within 250m buffer of the proposed DCO Order Limits | Poor |

| Water body ID | Location of water body | HSI Category |
|---|------------------------|--------------|
| 88, 95, 98, 100, 101, 102, 103, 104, 107, 108, 109, 113, 115, 117, 144, 145, 148, 153, 154, 155, 156, 158, 161, 162, 165, 166, 169, 171, 202, 205, 215, 270, | | |

3.3 eDNA sampling

- 3.3.1 A total of 113 waterbodies were sampled for eDNA analysis, including 12 of the 17 waterbodies identified within the proposed DCO Order Limits. Pond 37 was subject to HSI only, whilst waterbodies 81, 276, 278 and 280, which fall within the proposed DCO Order Limits, were not accessible within the survey period.
- 3.3.2 GCN eDNA was detected in 36 waterbodies. A summary of these results is shown in **Table 3-2** and **Figure 3.2 (Annex A)**.
- 3.3.3 Of the 36 positive eDNA results, four were recorded within the proposed DCO Order Limits.
- 3.3.4 A total of 46 negative results were received from the laboratory; while the remaining 31 samples were inconclusive.
- 3.3.5 Those samples that were inconclusive were due to a combination of analysis error, as well a constraint on samples collected outside the recommended sampling period and therefore classified as “*inconclusive constrained results*”. Of these inconclusive results, one sample, that from Pond 204, was taken from a water body within the proposed DCO Order Limits
- 3.3.6 Where inconclusive or inconclusive constrained results were received from the laboratory, the presence of GCN within these waterbodies cannot be discounted.

Table 3-2 eDNA sampling results

| Water body ID | Location of water body | GCN eDNA analysis result |
|--|---|--------------------------|
| 38, 130, 192, 210 | Within the proposed DCO Order Limits | Positive |
| 5, 45, 46, 64, 69, 70, 71, 72, 73, 74, 75, 76, 124, 132, 135, 136, 138, 140, 153, 155, 156, 163, 168, 169, 171, 177, 189, 196, 198, 211, 212, 220 | Within 250m buffer of the proposed DCO Order Limits | Positive |

| Water body ID | Location of water body | GCN eDNA analysis result |
|---|---|--|
| N/A | Within the proposed DCO Order Limits | Inconclusive |
| 1, 2, 3, 4, 10, 66, 82, 95, 96, 122, 144, 145, 154, 208, 213 | Within 250m buffer of the proposed DCO Order Limits | Inconclusive |
| 68, 204 | Within the proposed DCO Order Limits | Inconclusive constrained result (negative result for GCN eDNA sampled outside recommended survey period) |
| 6, 41, 56, 119, 139, 167, 184, 188, 200, 205, 206, 209, 215, 221 | Within 250m buffer of the proposed DCO Order Limits | Inconclusive constrained result (negative result for GCN eDNA sampled outside recommended survey period) |
| 40, 112, 118, 150, 269 | Within the proposed DCO Order Limits | Negative |
| 8, 9, 15, 54, 60, 78, 79, 80, 86, 87, 88, 97, 99, 100, 101, 104, 107, 108, 109, 111, 115, 116, 117, 125, 126, 146, 148, 149, 151, 152, 158, 161, 162, 165, 166, 181, 193, 201, 202, 207, 270 | Within 250m buffer of the proposed DCO Order Limits | Negative |

4. Summary

- 4.1.1 A total of 199 waterbodies (of 264 in the Study Area) were surveyed (HSI, eDNA or both HSI and eDNA) within the Study Area, 17 of which are located within the proposed DCO Order Limits; with the remainder located within the 250m buffer to the proposed DCO Order Limits.
- 4.1.2 Of these 199 waterbodies, 196 were subsequently subject to HSI assessments, and 113 eDNA only. Following the HSI, the waterbodies were assessed as follows in terms of suitability to support GCN:
- 30 waterbodies as 'excellent';
 - 44 waterbodies as 'good';
 - 41 assessed as 'average';
 - 33 as 'below average'; and
 - 48 as 'poor'.
- 4.1.3 Positive GCN eDNA was recorded within a total of 36 waterbodies within the Study Area. Of these, four waterbodies were located within the proposed DCO Order Limits: and the remainder within the 250m buffer to the proposed DCO Order Limits.
- 4.1.4 The distribution of positive GCN eDNA results is spread along the proposed DCO Order Limits and is wider spread than the pattern of records for GCN received as part of the desk study.
- 4.1.5 Inconclusive eDNA was recorded in 31 waterbodies, therefore presence of GCN is assumed as a precaution in these.
- 4.1.6 A total of 71 waterbodies could not be accessed for any physical assessment. Four of these waterbodies are located within the proposed DCO Order Limits, and the remaining 67 within the 250m buffer to the proposed DCO Order Limits, as shown in **Figure 4.1 (Annex A)** and **Table C-1 (Annex C)**.

5. Glossary of terms and abbreviations

| Term | Definition |
|--------------|---|
| CIEEM | Chartered Institute of Ecology and Environmental Management |
| Defra | Department for the Environment, Food and Rural Affairs |
| DCO | Development Consent Order |
| eDNA | Environmental DNA |
| EIA | Environmental Impact Assessment |
| ES | Environmental Statement |
| GCN | Great Crested Newt |
| HDD | Horizontal Directional Drilling |
| HSI | Habitat Suitability Index |
| MAVES | Mid Arun Valley Ecological Survey |
| MLWS | Mean Low Water Springs |
| OS | Ordnance Survey |
| PEIR | Preliminary Environmental Information Report |
| PINS | Planning Inspectorate |
| RED | Rampion Extension Development Limited |
| SxBRC | Sussex Biological Record Centre |
| SI | Suitability Index |

6. References

Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F (2014). *Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (Triturus cristatus) environmental DNA.* Freshwater Habitats Trust, Oxford.

Chartered Institute of Ecology and Environmental Management (CIEEM) (2018). *Guidelines for Ecological Impact Assessment in the United Kingdom.* [online]. Available at: <https://cieem.net/wp-content/uploads/2019/02/Combined-EcIA-guidelines-2018-compressed.pdf> [Accessed 02 June 2023].

Department for Environment, Food and Rural Affairs (Defra), (n.d.). *Multi Agency Geographic Information for the Countryside.* [Online] Available at: <https://magic.defra.gov.uk/home.htm> [Accessed 06 June 2023].

Department of Business, Energy & Industrial Strategy (BEIS) (2021). *Draft Overarching National Policy Statement for Energy EN-1.* [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf [Accessed 02 June 2023].

Highways England, (2019). *A27 Arundel Bypass Environmental Assessment Report.* [online] Available at: https://highwaysengland.citizenspace.com/he/a27-arundel-bypass-further-consultation/supporting_documents/A27%20Arundel%20Bypass%20%20Environmental%20Assessment%20Report%202019%20%20Final%20002.pdf [Accessed 02 June 2023].

MAVES (2017). *The Mid Arun Valley Ecological Survey Report.* [online] Available at: <https://www.aruncountryside.org/surveys> [Accessed 02 June 2023].

MAVES (2018). *The Mid Arun Valley 2018 Update.* [online] Available from: <https://www.aruncountryside.org/surveys> [Accessed 02 June 2023].

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus).* Herpetological Journal 10(4), 143-155.

Planning Inspectorate (PINS) (2018). *Advice Note Nine: Rochdale Envelope.* [online] Available at: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-nine-rochdale-envelope/> [Accessed 02 June 2023].

Strickler, K. M., Fremier, A. K., & Goldberg, C. S. (2015). *Quantifying effects of UV-B, temperature, and pH on eDNA degradation in aquatic microcosms.* Biological Conservation, 183, 85-92.

RED (2021a). *Rampion PEIR Chapter 1: Introduction, Section 1.2*. [online]. Available at: <https://rampion2.com/wp-content/uploads/2021/07/Rampion-2-PEIR-Volume-2-Chapter-1-Introduction.pdf> [Accessed 02 June 2023].

RED (2021b). *Rampion PEIR Volume 4, Appendix 23.2, Terrestrial ecology desk study*. [online]. Available at: <https://rampion2.com/wp-content/uploads/2021/07/Rampion-2-PEIR-Volume-4-Chapter-23-Terrestrial-Ecology-and-Nature-Conservation-Appendices.pdf> [Accessed 02 June 2023].

RED (2020). *Rampion Scoping Report, Section 6.6, Terrestrial Ecology*. [online]. Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010117/EN010117-000006-EN010117%20-%20Scoping%20Report.pdf> [Accessed 02 June 2023].

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Annex A

Figures

Figure 1.1 Study Area

Figure 2.1 Waterbodies visualisation

Figure 2.2 Waterbodies surveyed

Figure 2.3 GCN desk study results

Figure 3.1 Habitat suitability index

Figure 3.2 eDNA results

Figure 4.1 Waterbodies not surveyed due to limited access

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Annex B

Habitat Suitability Index Assessment results

Table B-1 – Habitat Suitability Index Assessment Results

| Water body ID | Located within draft Order Limits (Y/N) | SI1 - Location | SI2 – Water body area | SI3 – Water body drying | SI4 - Water quality | SI4 - Shade | SI6 - Fowl | SI7 - Fish | SI8 – Water body density | SI9 - Terrestrial habitat | SI10 – Macrophytes | HSI score | HSI category |
|---------------|---|----------------|-----------------------|-------------------------|---------------------|-------------|------------|------------|--------------------------|---------------------------|--------------------|-----------|---------------|
| 1 | N | A | 201 | Sometimes dries | Poor | 40 | Minor | Absent | 1.59 | Good | 60 | 0.70 | Good |
| 2 | N | A | 172 | Sometimes dries | Moderate | 50 | Minor | Possible | 14.33 | Moderate | 10 | 0.65 | Average |
| 3 | N | A | 100 | Never dries | Good | 60 | Minor | Possible | 14.97 | Good | 5 | 0.56 | Below Average |
| 4 | N | A | 213 | Never dries | Moderate | 60 | Minor | Possible | 11.78 | Good | 5 | 0.59 | Below Average |
| 5 | N | A | 143 | Dries annually | Moderate | 80 | Absent | Absent | 11.78 | Moderate | 60 | 0.49 | Poor |
| 6 | N | A | 124 | Dries annually | Good | 100 | Major | Absent | 1.59 | Poor | 0 | 0.27 | Poor |
| 7 | N | A | 504 | Dries annually | Good | 80 | Absent | Absent | 1.59 | Moderate | 0 | 0.59 | Below Average |
| 8 | Y | A | 25 | Dries annually | Poor | 90 | Absent | Absent | 10.51 | Poor | 0 | 0.38 | Poor |
| 9 | Y | A | 166 | Dries annually | Moderate | 70 | Minor | Absent | 0.95 | Moderate | 90 | 0.54 | Below Average |
| 10 | N | A | 258 | Dries annually | Good | 0 | Absent | Absent | 8.28 | Good | 0 | 0.65 | Average |
| 11 | N | A | 195 | Dries annually | Good | 0 | Absent | Absent | 8.28 | Moderate | 0 | 0.49 | Poor |
| 12 | N | A | 122 | Dries annually | Good | 0 | Minor | Absent | 8.28 | Moderate | 0 | 0.46 | Poor |
| 13 | N | A | 1521 | Rarely dries | Moderate | 0 | Minor | Possible | 1.91 | Good | 20 | 0.76 | Good |

| Water body ID | Located within draft Order Limits (Y/N) | SI1 - Location | SI2 – Water body area | SI3 – Water body drying | SI4 - Water quality | SI4 - Shade | SI6 - Fowl | SI7 - Fish | SI8 – Water body density | SI9 - Terrestrial habitat | SI10 – Macrophytes | HSI score | HSI category |
|---------------|---|----------------|-----------------------|-------------------------|---------------------|-------------|------------|------------|--------------------------|---------------------------|--------------------|-----------|---------------|
| 14 | Y | A | 457 | Rarely dries | Good | 10 | Minor | Major | 2.23 | Moderate | 20 | 0.51 | Below Average |
| 19 | N | A | 745 | Dries annually | Good | 0 | Absent | Absent | 1.91 | Poor | 0 | 0.59 | Below Average |
| 20 | N | A | 16 | Rarely dries | Moderate | 0 | Absent | Absent | 15.92 | Moderate | 0 | 0.60 | Average |
| 21 | N | A | 25 | Never dries | Good | 30 | Minor | Possible | 8.28 | Good | 5 | 0.52 | Below Average |
| 22 | N | A | 703 | Dries annually | Good | 100 | Absent | Absent | 13.38 | Good | 0 | 0.59 | Below Average |
| 23 | N | A | 69 | Dries annually | Moderate | 108 | Absent | Absent | 3.18 | Moderate | 60 | 0.42 | Poor |
| 24 | N | A | 131 | Never dries | Good | 60 | Minor | Possible | 7.96 | Good | 0 | 0.57 | Below Average |
| 25 | N | A | 67 | Sometimes dries | Moderate | 90 | Minor | Absent | 8.28 | Good | 20 | 0.50 | Poor |
| 26 | N | A | 92 | Sometimes dries | Good | 60 | Minor | Absent | 8.28 | Good | 0 | 0.54 | Below Average |
| 27 | N | A | 66 | Never dries | Good | 5 | Major | Possible | 7.96 | Good | 10 | 0.37 | Poor |
| 28 | N | A | 1301 | Rarely dries | Good | 5 | Minor | Possible | 4.78 | Good | 0 | 0.74 | Good |
| 30 | N | A | 538 | Sometimes dries | Good | 0 | Absent | Absent | 8.28 | Good | 0 | 0.66 | Average |
| 32 | Y | A | 60 | Dries annually | Moderate | 50 | Absent | Absent | 0.64 | Good | 0 | 0.47 | Poor |
| 36 | N | A | 875 | Rarely dries | Good | 95 | Minor | Absent | 9.24 | Good | 90 | 0.67 | Average |
| 37 | Y | A | 338 | Never dries | Moderate | 10 | Major | Major | 2.55 | Moderate | 40 | 0.32 | Poor |
| 42 | N | A | 6 | Dries annually | Good | 100 | Absent | Absent | 4.46 | Moderate | 0 | 0.36 | Poor |
| 43 | N | A | 506 | Sometimes dries | Good | 70 | Absent | Absent | 18.15 | Moderate | 80 | 0.70 | Average |

| Water body ID | Located within draft Order Limits (Y/N) | SI1 - Location | SI2 – Water body area | SI3 – Water body drying | SI4 - Water quality | SI4 - Shade | SI6 - Fowl | SI7 - Fish | SI8 – Water body density | SI9 - Terrestrial habitat | SI10 – Macrophytes | HSI score | HSI category |
|---------------|---|----------------|-----------------------|-------------------------|---------------------|-------------|------------|------------|--------------------------|---------------------------|--------------------|-----------|---------------|
| 46 | N | A | 49 | Dries annually | Good | 100 | Absent | Absent | 13.38 | Moderate | 0 | 0.36 | Poor |
| 48 | N | A | 384 | Rarely dries | Good | 0 | Absent | Absent | 3.18 | Moderate | 80 | 0.91 | Excellent |
| 54 | N | A | 156 | Dries annually | Moderate | 0 | Absent | Absent | 4.46 | Moderate | 0 | 0.57 | Below Average |
| 55 | N | A | 28 | Dries annually | Good | 60 | Absent | Absent | 15.61 | Moderate | 0 | 0.43 | Poor |
| 56 | N | A | 237 | Sometimes dries | Moderate | 70 | Minor | Absent | 12.74 | Good | 20 | 0.58 | Below Average |
| 57 | N | A | 231 | Dries annually | Moderate | 80 | Minor | Possible | 1.59 | Moderate | 75 | 0.55 | Below Average |
| 62 | N | A | 198 | Sometimes dries | Moderate | 30 | Minor | Absent | 11.78 | Good | 100 | 0.76 | Good |
| 63 | N | A | 189 | Sometimes dries | Moderate | 0 | Minor | Possible | 3.82 | Poor | 40 | 0.64 | Average |
| 64 | N | A | 80 | Never dries | Good | 20 | Minor | Possible | 10.51 | Good | 20 | 0.70 | Good |
| 65 | N | A | 118 | Sometimes dries | Good | 10 | Absent | Absent | 1.91 | Moderate | 40 | 0.70 | Good |
| 67 | N | A | 32 | Dries annually | Moderate | 40 | Absent | Absent | 11.15 | Good | 0 | 0.43 | Poor |
| 68 | N | A | 2215 | Never dries | Good | 10 | Minor | Possible | 16.24 | Good | 90 | 0.89 | Excellent |
| 69 | N | A | 161 | Rarely dries | Good | 75 | Absent | Absent | 18.15 | Good | 15 | 0.79 | Good |
| 70 | N | A | 54 | Sometimes dries | Moderate | 100 | Absent | Absent | 16.24 | Good | 5 | 0.46 | Poor |
| 71 | N | A | 200 | Rarely dries | Good | 40 | Absent | Absent | 19.11 | Good | 40 | 0.70 | Average |
| 72 | N | A | 600 | Rarely dries | Good | 60 | Absent | Absent | 18.15 | Good | 40 | 0.96 | Excellent |
| 73 | N | A | 100 | Sometimes dries | Good | 0 | Absent | Absent | 17.52 | Good | 70 | 0.63 | Average |
| 74 | N | A | 550 | Never dries | Good | 25 | Absent | Minor | 16.24 | Good | 5 | 0.63 | Average |

| Water body ID | Located within draft Order Limits (Y/N) | SI1 - Location | SI2 – Water body area | SI3 – Water body drying | SI4 - Water quality | SI4 - Shade | SI6 - Fowl | SI7 - Fish | SI8 – Water body density | SI9 - Terrestrial habitat | SI10 – Macrophytes | HSI score | HSI category |
|---------------|---|----------------|-----------------------|-------------------------|---------------------|-------------|------------|------------|--------------------------|---------------------------|--------------------|-----------|---------------|
| 75 | N | A | 500 | Never dries | Moderate | 30 | Major | Major | 4.14 | Moderate | 30 | 0.27 | Poor |
| 76 | N | A | 75 | Never dries | Good | 20 | Minor | Possible | 10.51 | Moderate | 20 | 0.55 | Below Average |
| 77 | N | A | 200 | Never dries | Moderate | 50 | Absent | Possible | 18.47 | Good | 15 | 0.61 | Average |
| 78 | N | A | 50 | Never dries | Good | 90 | Minor | Possible | 11.15 | Moderate | 30 | 0.48 | Poor |
| 79 | N | A | 600 | Never dries | Good | 20 | Major | Major | 10.51 | Moderate | 40 | 0.29 | Poor |
| 80 | N | A | 200 | Never dries | Good | 70 | Minor | Possible | 9.55 | Moderate | 20 | 0.58 | Below Average |
| 81 | N | A | 400 | Never dries | Good | 30 | Major | Major | 9.24 | Moderate | 40 | 0.28 | Poor |
| 82 | N | A | 100 | Never dries | Good | 80 | Minor | Possible | 9.87 | Moderate | 0 | 0.50 | Poor |
| 83 | N | A | 20 | Dries annually | Good | 95 | Absent | Absent | 7.32 | Moderate | 90 | 0.49 | Poor |
| 87 | N | A | 107 | Dries annually | Good | 0 | Absent | Absent | 1.59 | Good | 0 | 0.55 | Below Average |
| 88 | N | A | 250 | Never dries | Good | 20 | Major | Major | 1.59 | Good | 10 | 0.31 | Poor |
| 89 | N | A | 250 | Never dries | Good | 20 | Major | Major | 1.59 | Good | 10 | 0.31 | Poor |
| 90 | N | A | 250 | Never dries | Moderate | 40 | Minor | Minor | 9.55 | Moderate | 20 | 0.68 | Average |
| 91 | N | A | 500 | Never dries | Bad | 0 | Minor | Absent | 7.64 | Poor | 0 | 0.47 | Poor |
| 98 | N | A | 200 | Never dries | Poor | 5 | Minor | Absent | 9.55 | Poor | 0 | 0.61 | Average |
| 100 | N | A | 61 | Dries annually | Poor | 0 | Absent | Absent | 3.50 | Poor | 30 | 0.44 | Poor |
| 101 | N | A | 50 | Sometimes dries | Poor | 0 | Absent | Absent | 5.41 | Moderate | 10 | 0.5 | Below Average |
| 102 | N | A | 20 | Never dries | Good | 50 | Absent | Absent | 7.01 | Poor | 5 | 0.59 | Below Average |
| 103 | N | A | 1000 | Never dries | Moderate | 20 | Major | Possible | 9.24 | Moderate | 20 | 0.51 | Below Average |

| Water body ID | Located within draft Order Limits (Y/N) | SI1 - Location | SI2 – Water body area | SI3 – Water body drying | SI4 - Water quality | SI4 - Shade | SI6 - Fowl | SI7 - Fish | SI8 – Water body density | SI9 - Terrestrial habitat | SI10 – Macrophytes | HSI score | HSI category |
|---------------|---|----------------|-----------------------|-------------------------|---------------------|-------------|------------|------------|--------------------------|---------------------------|--------------------|-----------|---------------|
| 104 | N | A | 22 | Dries annually | Good | 90 | Absent | Absent | 4.14 | Moderate | 70 | 0.51 | Below Average |
| 105 | N | A | 55 | Rarely dries | Good | 0 | Major | Absent | 6.37 | Poor | 30 | 0.43 | Poor |
| 106 | Y | A | 30 | Rarely dries | Good | 0 | Major | Possible | 7.96 | Poor | 25 | 0.37 | Poor |
| 107 | N | A | 70 | Dries annually | Good | 0 | Major | Absent | 8.92 | Poor | 85 | 0.36 | Poor |
| 108 | N | A | 100 | Dries annually | Good | 0 | Major | Absent | 10.83 | Moderate | 0 | 0.36 | Poor |
| 109 | N | A | 6864 | Rarely dries | Moderate | 0 | Major | Possible | 8.28 | Moderate | 5 | 0.44 | Poor |
| 110 | N | A | 80 | Dries annually | Moderate | 100 | Absent | Major | 6.37 | Good | 10 | 0.31 | Poor |
| 111 | N | A | 706 | Rarely dries | Moderate | 20 | Minor | Possible | 8.92 | Good | 20 | 0.66 | Average |
| 112 | N | A | 42 | Rarely dries | Moderate | 0 | Major | Major | 5.73 | Good | 5 | 0.25 | Poor |
| 113 | N | A | 706 | Rarely dries | Moderate | 100 | Minor | Possible | 6.37 | Good | 20 | 0.7 | Good |
| 114 | Y | A | 149 | Rarely dries | Moderate | 100 | Minor | Possible | 6.05 | Good | 10 | 0.61 | Average |
| 115 | N | A | 304 | Sometimes dries | Poor | 20 | Absent | Possible | 4.46 | Moderate | 10 | 0.66 | Average |
| 116 | Y | A | 129 | Sometimes dries | Moderate | 100 | Minor | Possible | 4.46 | Moderate | 10 | 0.53 | Below Average |
| 117 | Y | A | 2228 | Never dries | Moderate | 80 | Major | Major | 10.19 | Poor | 0 | 0.22 | Poor |
| 118 | N | A | 50 | Sometimes dries | Poor | 100 | Absent | Absent | 15.29 | Good | 0 | 0.40 | Poor |
| 120 | N | A | 40 | Sometimes dries | Moderate | 80 | Absent | Absent | 3.82 | Good | 0 | 0.55 | Below Average |
| 122 | N | A | 193 | Sometimes dries | Moderate | 80 | Absent | Absent | 4.78 | Good | 0 | 0.68 | Average |
| 124 | N | A | 50 | Sometimes dries | Moderate | 100 | Absent | Absent | 6.37 | Good | 0 | 0.43 | Poor |

| Water body ID | Located within draft Order Limits (Y/N) | SI1 - Location | SI2 – Water body area | SI3 – Water body drying | SI4 - Water quality | SI4 - Shade | SI6 - Fowl | SI7 - Fish | SI8 – Water body density | SI9 - Terrestrial habitat | SI10 – Macrophytes | HSI score | HSI category |
|---------------|---|----------------|-----------------------|-------------------------|---------------------|-------------|------------|------------|--------------------------|---------------------------|--------------------|-----------|---------------|
| 125 | N | A | 46 | Sometimes dries | Moderate | 100 | Absent | Absent | 6.37 | Good | 0 | 0.5 | Below Average |
| 128 | N | A | 900 | Never dries | Good | 5 | Absent | Possible | 11.46 | Good | 5 | 0.85 | Excellent |
| 129 | N | A | 50 | Dries annually | Good | 100 | Absent | Absent | 7.01 | Good | 20 | 0.50 | Below Average |
| 132 | N | A | 300 | Never dries | Moderate | 80 | Minor | Possible | 16.24 | Good | 10 | 0.57 | Below Average |
| 134 | N | A | 291 | Dries annually | Moderate | 90 | Absent | Absent | 9.24 | Good | 100 | 0.64 | Average |
| 139 | N | A | 100 | Sometimes dries | Poor | 100 | Absent | Absent | 16.24 | Good | 60 | 0.59 | Below Average |
| 140 | N | A | 650 | Never dries | Moderate | 80 | Minor | Possible | 8.92 | Good | 15 | 0.61 | Average |
| 141 | N | A | 350 | Never dries | Good | 30 | Minor | Major | 6.69 | Good | 20 | 0.54 | Below Average |
| 142 | N | A | 50 | Dries annually | Moderate | 100 | Minor | Absent | 12.74 | Good | 0 | 0.43 | Poor |
| 145 | N | A | 150 | Never dries | Poor | 70 | Major | Possible | 3.18 | Good | 0 | 0.40 | Poor |
| 146 | N | A | 100 | Rarely dries | Poor | 95 | Major | Absent | 3.50 | Good | 0 | 0.37 | Poor |
| 147 | N | A | 69 | Dries annually | Moderate | 50 | Minor | Absent | 6.05 | Moderate | 40 | 0.46 | Poor |
| 148 | N | A | 250 | Never dries | Poor | 90 | Major | Possible | 17.52 | Good | 0 | 0.40 | Poor |
| 151 | N | A | 101 | Dries annually | Moderate | 100 | Absent | Possible | 6.69 | Good | 0 | 0.39 | Poor |
| 153 | N | A | 154 | Sometimes dries | Good | 60 | Absent | Minor | 7.01 | Good | 10 | 0.55 | Below Average |
| 154 | N | A | 74 | Never dries | Good | 25 | Minor | Possible | 7.32 | Moderate | 20 | 0.55 | Below Average |
| 156 | N | A | 173 | Rarely dries | Moderate | 100 | Absent | Absent | 9.87 | Good | 0 | 0.65 | Average |
| 157 | N | A | 219 | Never dries | Good | 10 | Minor | Possible | 5.73 | Moderate | 20 | 0.61 | Average |

| Water body ID | Located within draft Order Limits (Y/N) | SI1 - Location | SI2 – Water body area | SI3 – Water body drying | SI4 - Water quality | SI4 - Shade | SI6 - Fowl | SI7 - Fish | SI8 – Water body density | SI9 - Terrestrial habitat | SI10 – Macrophytes | HSI score | HSI category |
|---------------|---|----------------|-----------------------|-------------------------|---------------------|-------------|------------|------------|--------------------------|---------------------------|--------------------|-----------|---------------|
| 158 | N | A | 50 | Sometimes dries | Moderate | 95 | Absent | Absent | 11.46 | Good | 0 | 0.55 | Below Average |
| 159 | N | A | 400 | Never dries | Moderate | 50 | Major | Possible | 14.01 | Good | 0 | 0.49 | Poor |
| 160 | N | A | 100 | Rarely dries | Good | 100 | Minor | Absent | 2.55 | Good | 90 | 0.55 | Below Average |
| 161 | Y | A | 200 | Never dries | Poor | 80 | Major | Possible | 16.56 | Good | 0 | 0.41 | Poor |
| 162 | N | A | 170 | Never dries | Moderate | 50 | Major | Absent | 17.20 | Moderate | 5 | 0.38 | Poor |
| 163 | N | A | 250 | Never dries | Poor | 70 | Major | Possible | 10.51 | Good | 0 | 0.43 | Poor |
| 164 | N | A | 178 | Never dries | Moderate | 0 | Absent | Major | 5.41 | Moderate | 30 | 0.49 | Poor |
| 165 | N | A | 50 | Sometimes dries | Poor | 100 | Absent | Absent | 12.10 | Good | 0 | 0.50 | Below Average |
| 166 | N | A | 600 | Never dries | Poor | 95 | Minor | Possible | 5.10 | Good | 0 | 0.51 | Below Average |
| 167 | N | A | 496 | Never dries | Poor | 95 | Minor | Possible | 10.51 | Good | 0 | 0.64 | Average |
| 168 | N | A | 444 | Never dries | Moderate | 50 | Minor | Major | 9.55 | Good | 5 | 0.51 | Below Average |
| 169 | N | A | 3955 | Never dries | Good | 20 | Major | Possible | 8.92 | Moderate | 0 | 0.47 | Poor |
| 170 | N | A | 642 | Never dries | Good | 60 | Minor | Possible | 7.64 | Moderate | 10 | 0.64 | Average |
| 171 | N | A | 1572 | Never dries | Good | 80 | Minor | Possible | 6.05 | Good | 30 | 0.65 | Average |
| 172 | N | A | 600 | Never dries | Poor | 75 | Minor | Possible | 3.50 | Good | 0 | 0.56 | Below Average |
| 173 | N | A | 50 | Sometimes dries | Poor | 95 | Absent | Absent | 2.23 | Good | 0 | 0.41 | Poor |
| 174 | N | A | 159 | Rarely dries | Good | 95 | Absent | Absent | 2.87 | Good | 0 | 0.57 | Below Average |
| 175 | N | A | 42 | Rarely dries | Good | 100 | Absent | Possible | 2.87 | Good | 100 | 0.50 | Below Average |
| 176 | N | A | 100 | Sometimes dries | Good | 90 | Absent | Possible | 14.65 | Good | 100 | 0.68 | Average |

| Water body ID | Located within draft Order Limits (Y/N) | SI1 - Location | SI2 – Water body area | SI3 – Water body drying | SI4 - Water quality | SI4 - Shade | SI6 - Fowl | SI7 - Fish | SI8 – Water body density | SI9 - Terrestrial habitat | SI10 – Macrophytes | HSI score | HSI category |
|---------------|---|----------------|-----------------------|-------------------------|---------------------|-------------|------------|------------|--------------------------|---------------------------|--------------------|-----------|---------------|
| 177 | N | A | 100 | Sometimes dries | Good | 90 | Minor | Possible | 16.56 | Good | 0 | 0.59 | Below Average |
| 178 | N | A | 3500 | Never dries | Good | 0 | Major | Major | 18.47 | Good | 15 | 0.32 | Poor |
| 179 | N | A | 40 | Never dries | Good | 50 | Minor | Possible | 9.55 | Moderate | 20 | 0.60 | Average |
| 180 | N | A | 75 | Never dries | Good | 20 | Minor | Major | 5.10 | Moderate | 10 | 0.43 | Poor |
| 181 | N | A | 50 | Rarely dries | Good | 90 | Minor | Possible | 10.19 | Moderate | 0 | 0.56 | Below Average |
| 182 | N | A | 75 | Never dries | Good | 90 | Minor | Minor | 10.19 | Good | 20 | 0.59 | Below Average |
| 183 | N | A | 317 | Never dries | Good | 90 | Minor | Major | 10.19 | Good | 20 | 0.48 | Poor |
| 185 | N | A | 632 | Never dries | Good | 80 | Minor | Major | 11.78 | Good | 20 | 0.59 | Below Average |
| 187 | N | A | 400 | Rarely dries | Good | 80 | Absent | Absent | 9.87 | Good | 0 | 0.82 | Excellent |
| 188 | N | A | 150 | Rarely dries | Poor | 90 | Absent | Absent | 15.29 | Good | 5 | 0.65 | Average |
| 189 | N | A | 462 | Rarely dries | Good | 70 | Absent | Absent | 9.55 | Poor | 0 | 0.76 | Good |
| 190 | N | A | 25 | Never dries | Good | 70 | Minor | Possible | 17.20 | Moderate | 20 | 0.59 | Below Average |
| 191 | N | A | 151 | Dries annually | Good | 100 | Absent | Absent | 7.64 | Moderate | 0 | 0.51 | Below Average |
| 194 | N | A | 20 | Rarely dries | Good | 0 | Minor | Minor | 10.19 | Moderate | 5 | 0.55 | Below Average |
| 196 | N | A | 349 | Dries annually | Moderate | 60 | Absent | Absent | 7.96 | Moderate | 100 | 0.69 | Average |
| 197 | N | A | 6 | Dries annually | Moderate | 100 | Absent | Absent | 10.19 | Good | 0 | 0.36 | Poor |
| 201 | N | A | 403 | Never dries | Moderate | 80 | Minor | Possible | 6.05 | Poor | 0 | 0.64 | Average |
| 203 | N | A | 12 | Sometimes dries | Good | 0 | Absent | Possible | 5.41 | Good | 90 | 0.65 | Average |

| Water body ID | Located within draft Order Limits (Y/N) | SI1 - Location | SI2 – Water body area | SI3 – Water body drying | SI4 - Water quality | SI4 - Shade | SI6 - Fowl | SI7 - Fish | SI8 – Water body density | SI9 - Terrestrial habitat | SI10 – Macrophytes | HSI score | HSI category |
|---------------|---|----------------|-----------------------|-------------------------|---------------------|-------------|------------|------------|--------------------------|---------------------------|--------------------|-----------|---------------|
| 204 | N | A | 146 | Dries annually | Moderate | 90 | Minor | Absent | 10.83 | Good | 15 | 0.43 | Poor |
| 205 | N | A | 300 | Dries annually | Poor | 70 | Absent | Absent | 3.18 | Good | 5 | 0.58 | Below Average |
| 206 | N | A | 1900 | Never dries | Good | 10 | Minor | Minor | 5.41 | Good | 60 | 0.66 | Average |
| 207 | N | A | 160 | Dries annually | Moderate | 100 | Absent | Absent | 1.91 | Moderate | 80 | 0.52 | Below Average |
| 209 | N | A | 100 | Dries annually | Poor | 80 | Absent | Absent | 1.91 | Good | 5 | 0.48 | Poor |
| 210 | N | A | 184 | Never dries | Good | 90 | Absent | Major | 13.06 | Moderate | 90 | 0.49 | Poor |
| 211 | N | A | 448 | Dries annually | Moderate | 90 | Minor | Possible | 11.15 | Moderate | 80 | 0.61 | Average |
| 212 | N | A | 5193 | Dries annually | Good | 70 | Minor | Minor | 3.50 | Good | 0 | 0.55 | Below Average |
| 214 | N | A | 1658 | Never dries | Moderate | 10 | Minor | Minor | 3.50 | Good | 10 | 0.72 | Good |
| 215 | Y | A | 530 | Never dries | Good | 30 | Minor | Major | 9.87 | Good | 30 | 0.56 | Below Average |
| 216 | N | A | 53 | Dries annually | Good | 90 | Absent | Absent | 9.55 | Good | 0 | 0.43 | Poor |
| 217 | Y | A | 354 | Dries annually | Moderate | 90 | Absent | Absent | 3.50 | Good | 20 | 0.62 | Average |
| 219 | N | A | 285 | Rarely dries | Moderate | 80 | Absent | Possible | 4.46 | Good | 100 | 0.81 | Excellent |
| 223 | N | A | 810 | Dries annually | Moderate | 10 | Absent | Absent | 3.50 | Moderate | 0 | 0.64 | Average |
| 226 | N | A | 2200 | Never dries | Good | 50 | Minor | Major | 9.87 | Moderate | 30 | 0.51 | Below Average |
| 227 | Y | A | 211 | Dries annually | Moderate | 80 | Minor | Possible | 16.88 | Good | 70 | 0.61 | Average |
| 228 | N | A | 400 | Never dries | Good | 0 | Absent | Absent | 12.74 | Good | 0 | 0.85 | Excellent |

| Water body ID | Located within draft Order Limits (Y/N) | SI1 - Location | SI2 – Water body area | SI3 – Water body drying | SI4 - Water quality | SI4 - Shade | SI6 - Fowl | SI7 - Fish | SI8 – Water body density | SI9 - Terrestrial habitat | SI10 – Macrophytes | HSI score | HSI category |
|---------------|---|----------------|-----------------------|-------------------------|---------------------|-------------|------------|------------|--------------------------|---------------------------|--------------------|-----------|---------------|
| 230 | N | A | 216 | Dries annually | Moderate | 100 | Minor | Possible | 6.05 | Moderate | 5 | 0.38 | Poor |
| 231 | N | A | 200 | Never dries | Good | 90 | Minor | Possible | 8.60 | Moderate | 10 | 0.53 | Below Average |
| 232 | N | A | 150 | Sometimes dries | Good | 0 | Minor | Absent | 9.55 | Moderate | 80 | 0.61 | Average |
| 234 | N | A | 60 | Never dries | Poor | 18 | Absent | Major | 9.87 | Moderate | 7 | 0.33 | Poor |
| 235 | N | A | 500 | Never dries | Good | 80 | Minor | Possible | 8.60 | Good | 0 | 0.61 | Average |
| 236 | N | A | 440 | Sometimes dries | Moderate | 90 | Absent | Absent | 16.56 | Good | 10 | 0.73 | Good |
| 238 | N | A | 229 | Dries annually | Good | 0 | Absent | Absent | 2.23 | Good | 0 | 0.62 | Average |
| 239 | N | A | 100 | Never dries | Good | 100 | Absent | Absent | 8.60 | Good | 0 | 0.51 | Below Average |
| 241 | N | A | 1832 | Never dries | Moderate | 60 | Minor | Possible | 10.83 | Moderate | 5 | 0.60 | Average |
| 242 | N | A | 100 | Never dries | Good | 40 | Minor | Possible | 7.64 | Good | 0 | 0.55 | Below Average |
| 243 | N | A | 1100 | Never dries | Poor | 100 | Minor | Possible | 4.14 | Good | 5 | 0.62 | Average |
| 244 | N | A | 300 | Dries annually | Poor | 100 | Absent | Absent | 13.38 | Good | 0 | 0.50 | Below Average |
| 245 | N | A | 264 | Dries annually | Good | 80 | Absent | Absent | 16.56 | Moderate | 80 | 0.68 | Average |
| 247 | N | A | 238 | Rarely dries | Good | 50 | Minor | Absent | 16.24 | Good | 70 | 0.89 | Excellent |
| 250 | N | A | 50 | Dries annually | Good | 75 | Absent | Absent | 4.78 | Good | 0 | 0.43 | Poor |
| 251 | N | A | 350 | Never dries | Poor | 90 | Minor | Possible | 4.78 | Good | 5 | 0.64 | Average |
| 253 | N | A | 444 | Sometimes dries | Good | 70 | Absent | Absent | 1.91 | Good | 80 | 0.78 | Good |
| 254 | Y | A | 489 | Dries annually | Good | 100 | Absent | Absent | 7.64 | Good | 80 | 0.64 | Average |

| Water body ID | Located within draft Order Limits (Y/N) | SI1 - Location | SI2 – Water body area | SI3 – Water body drying | SI4 - Water quality | SI4 - Shade | SI6 - Fowl | SI7 - Fish | SI8 – Water body density | SI9 - Terrestrial habitat | SI10 – Macrophytes | HSI score | HSI category |
|---------------|---|----------------|-----------------------|-------------------------|---------------------|-------------|------------|------------|--------------------------|---------------------------|--------------------|-----------|--------------|
| 255 | N | A | 750 | Never dries | Good | 15 | Absent | Major | 5.10 | Good | 15 | 0.46 | Poor |
| 256 | N | A | 167 | Rarely dries | Poor | 80 | Absent | Absent | 10.83 | Good | 20 | 0.71 | Good |
| 257 | N | A | 100 | Rarely dries | Poor | 80 | Absent | Absent | 4.46 | Good | 20 | 0.67 | Average |
| 258 | N | A | 710 | Never dries | Moderate | 80 | Minor | Possible | 11.46 | Good | 20 | 0.77 | Good |
| 259 | N | A | 241 | Dries annually | Good | 0 | Absent | Absent | 16.56 | Moderate | 70 | 0.70 | Good |
| 260 | N | A | 84 | Never dries | Good | 0 | Absent | Absent | 2.22 | Moderate | 0 | 0.67 | Average |
| 266 | N | A | 348 | Never dries | Good | 20 | Minor | Possible | 4.14 | Moderate | 20 | 0.78 | Good |
| Wb4 (269) | Y | A | 100 | Sometimes | Good | 80 | Absent | Possible | 3.1 | Poor | 80 | 0.64 | Average |
| WB12 (270) | N | A | 2000 | Never | Moderate | 20 | Major | Major | 3.1 | Moderate | 5 | 0.31 | Poor |

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Annex C

Survey limitations

Table C-1 – Waterbodies not subject to HSI or eDNA sampling

| Water body ID | Location of water body | Survey undertaken |
|--|---|--------------------------|
| 130 | Within the proposed DCO Order Limits | eDNA survey only |
| 177, 184 | Within 250m buffer of proposed DCO Order Limits | eDNA survey only |
| 37, 81 | Within the proposed DCO Order Limits | HSI survey only |
| 7, 11, 12, 13, 14, 16, 35, 36, 37, 39, 42, 43, 44, 47, 48, 49, 50, 51, 52, 53, 55, 57, 58, 61, 62, 63, 65, 67, 77, 83, 84, 89, 90, 85, 91, 92, 94, 93, 98, 102, 103, 105, 110, 106, 113, 114, 120, 123, 128, 129, 131, 134, 157, 159, 160, 164, 170, 172, 173, 174, 175, 176, 178, 179, 180, 182, 183, 185, 186, 187, 190, 191, 195, 199, 194, 197, 203, 214, 216, 218, 219 | Within 250m buffer of proposed DCO Order Limits | HSI survey only |
| 278, 280, 276 | Within the proposed DCO Order Limits | Not surveyed |
| 16, 35, 36, 42, 43, 44, 47, 48, 49, 50, 52, 53, 55, 57, 58, 62, 63, 81, 83, 84, 89, 90, 91, 92, 94, 108, 110, 114, 120, 128, 129, 131, 134, 160, 170, 172, 173, 174, 176, 178, 179, 180, 182, 183, 185, 186, 187, 190, 195, 199, 216, 219, 222, 273, 274, 277, 279, 281, 282, 287, 288, 289, | Within 250m buffer of proposed DCO Order Limits | Not surveyed |

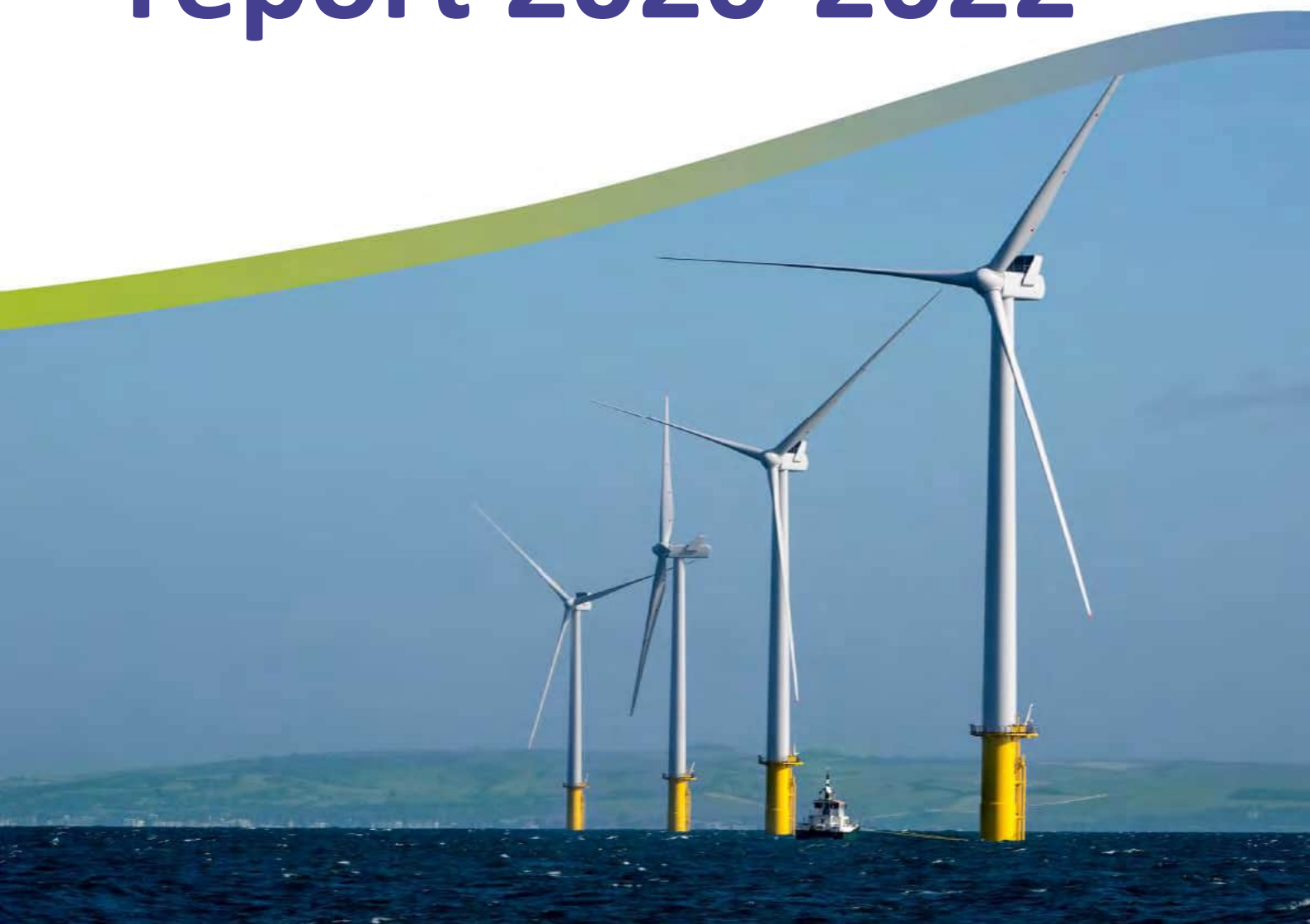


4.22.9



Volume 4, Appendix 22.9

Hazel dormouse report 2020-2022



Contents

| | | |
|-----------|----------------------------------|-----------|
| 1. | Introduction | 3 |
| 1.1 | Background | 3 |
| 1.2 | Purpose of this Appendix | 3 |
| 1.3 | Legislation | 3 |
| 1.4 | Structure of this Appendix | 4 |
| 2. | Methods | 5 |
| 2.1 | Overview | 5 |
| 2.2 | Survey guidance | 5 |
| 2.3 | Desk study | 5 |
| 2.4 | Survey design | 5 |
| | Survey site selection locations | 6 |
| 2.5 | Field survey methodology | 7 |
| | Nest tube survey technique | 7 |
| | Other hazel dormouse field signs | 7 |
| | Index of Probability | 8 |
| 2.6 | Limitations | 8 |
| 3. | Results | 11 |
| 3.1 | Desk study results | 11 |
| | Survey Site Selection | 11 |
| 3.2 | Field survey results | 15 |
| | Nest tube survey | 15 |
| | Other signs | 16 |
| 3.3 | Index of probability results | 16 |
| 4. | Discussion | 17 |
| 4.1 | Survey Results | 17 |
| 5. | References | 18 |

List of Tables

| | | |
|-----------|---|----|
| Table 2-1 | Index of Probability of finding dormice in nest tubes in any one survey month | 8 |
| Table 2-2 | Summary of Sites with delayed nest tube deployment | 9 |
| Table 3-1 | Desk study results | 11 |
| Table 3-2 | Survey Sites and rationale for survey | 12 |
| Table 3-3 | Summary of Index of Probability Scores | 16 |

List of Annexes

| | | |
|---------------|------------------------------|--|
| Annex A | Figures: | |
| Figure 23.9.1 | Site plan | |
| Figure 23.9.2 | Dormouse survey sites | |
| Figure 23.9.3 | Desk study results | |
| Figure 23.9.4 | Dormouse nest tube locations | |
| Figure 23.9.5 | Hazelnut search locations | |
| Annex B | Full survey results | |
| Annex C | Legislation | |

CONFIDENTIAL

1. Introduction

1.1 Background

- 1.1.1 This Appendix should be read in conjunction with **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the Environmental Statement (ES) which is provided in support of the delivery of an Environmental Impact Assessment (EIA) associated with the Rampion 2 Offshore Wind Farm, hereafter referred to as the 'Proposed Development' or 'Rampion 2'.
- 1.1.2 This Appendix describes the survey method and summarises the results of a hazel dormouse survey undertaken between 2020 and 2022. Annex D provides the scientific names of species described in this appendix.

1.2 Purpose of this Appendix

- 1.2.1 The proposed DCO Order Limits include, and are adjacent to, habitats with the potential to support hazel dormouse *Muscardinus avellanarius*, a European Protected Species (EPS)¹.
- 1.2.2 This Appendix outlines the methodologies used, and summarises the results gathered as part of an effort to determine the presence of hazel dormouse.
- 1.2.3 Hazel dormouse surveys were undertaken in October and November 2020, and between April and November in both 2021 and 2022. Guidance suggests that these are the months in which hazel dormouse are most likely to be encountered during surveys.
- 1.2.4 The following survey methodologies were used:
- nest tube survey to ascertain presence / likely absence; and
 - hazelnut search within areas considered suitable habitat.
- 1.2.5 The hazel dormouse surveys were designed to identify the presence or likely absence of hazel dormouse within, or close to, the proposed DCO Order Limits connected by functionally linked habitat.

1.3 Legislation

- 1.3.1 Legislation is detailed in full in **Annex C**, but in brief; hazel dormouse are protected under the Wildlife and Countryside Act 1981 (as amended). This legislation makes it an offence to intentionally or recklessly:
- *“disturb hazel dormice while they occupy a structure or place used for shelter or protection; or*

¹ A European Protected Species receives specific legal protection under the Conservation of Habitats and Species Regulations 2017 (as amended).

- *obstruct access to a place of shelter or protection.*”

1.3.2 This species is also designated and protected as a EPS. EPS are protected under the Conservation of Habitats and Species Regulations 2017, which makes it an offence to:

- *“deliberately kill, injure, disturb or capture them;*
- *damage or destroy their breeding sites and resting places; or*
- *possess, control, transport (alive or dead).”*

1.4 Structure of this Appendix

1.4.1 This Appendix is structured as follows:

- **Section 2: Methods;**
- **Section 3: Results;**
- **Section 4: Discussion;**
- **Section 5: References;**
- **Annex A: Figures;**
- **Annex B: Full survey results;**
- **Annex C: Legislation; and**
- **Annex D: Scientific species names.**

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2. Methods

2.1 Overview

2.1.1 Details of the methodology used for establishing the ecological baseline for hazel dormouse are provided below (see **Sections 2.3, 2.4 and 2.5**). The approach to hazel dormouse survey was discussed with Natural England in April 2020, and again within a variety of forums with stakeholders including South Downs National Park Authority, West Sussex County Council and the Sussex Wildlife Trust (see **Section 22.3 of Chapter 22: Terrestrial ecology and nature conservation, Volume 2**), with agreement to the approach documented through meeting minutes.

2.2 Survey guidance

2.2.1 The following survey guidance has been taken into account in the methodology design. Any deviation from standard industry practice is noted in **Section 2.6**:

- *Interim Natural England Advice Note: Dormouse Surveys for Mitigation Licensing – Best practice and common misconceptions* (Natural England, 2011);
- *The Dormouse Conservation Handbook, Second Edition* (Bright, P, Morris, P. and Mitchell-Jones, T., English Nature, 2006);
- *Standing Advice Note; Dormouse* (Natural England, 2015); and
- *Guidance on Ecological Survey and Assessment in the UK During the COVID-19 Outbreak*, (Chartered Institute of Ecology and Environmental Management (CIEEM), Version 1 2020; to Version 4 2021).

2.3 Desk study

2.3.1 An environmental desk study was undertaken in 2020 as part of the Environmental Impact Assessment scoping (RED, 2020), with an update in May 2023 (collectively: the 'desk study'). The desk study provided records of hazel dormouse within 5km of the proposed DCO Order Limits. This data was used to formulate the survey design, as well as inform assessment (see **Chapter 22 Terrestrial Ecology and Nature Conservation, Volume 4**).

2.4 Survey design

2.4.1 The proposed DCO Order Limits contain habitats with high potential for the presence of hazel dormouse as it supports a strong well-connected mosaic of woodlands and hedgerows. Although the loss of these types of habitat will be relatively low in absolute area terms compared with losses of arable land or pasture; the potential for this loss to fragment the landscape and interfere with breeding success and dispersal of hazel dormouse remains a key consideration.

- 2.4.2 A full survey programme to confirm presence / likely absence of hazel dormouse in all suitable habitats within the proposed DCO Order Limits was not deemed proportionate, especially given the 'Rochdale Envelope' approach (Planning Inspectorate, 2018).
- 2.4.3 Instead, and in line with CIEEM guidance (CIEEM, 2018), discrete 'survey sites' were selected for sampling. These survey sites were chosen based on their level of potential to support hazel dormouse and, as important, where it was considered that works associated with the Proposed Development (particularly loss of hedgerows and/or woodland) could contribute to significant adverse effects on hazel dormouse populations at that location.

Survey site selection locations

- 2.4.4 Optimal hazel dormouse habitat is comprised of coppiced woodland, containing hazel, oak, bramble and honeysuckle, which are important food sources. Ancient semi-natural woodland, broadleaved deciduous woodland and dense, outgrown hedgerows that support a range of fruit-bearing species and are well-connected to the wider landscape are also considered good hazel dormouse habitat (Bright, 2006).
- 2.4.5 The survey focused on six site locations across 2020 and 2021, with a further two sites added in 2022. All survey sites were in proximity to, or intersected with, the proposed DCO Order Limits as they were at the time of the survey. Since that time, the layout of the proposed DCO Order Limits has been finalised to the current configuration (see **Figure 22.9.1, Annex A**).
- 2.4.6 Hazel dormouse survey site selection was based on an interpretation of the desk study (see **Appendix 22.2: Terrestrial Ecology Desk Study, Volume 4**), and Phase 1 habitat survey results (see **Appendix 22.3: Extended Phase 1 Habitat Survey, Volume 4**). Nest tube micro-siting was then informed by a scoping exercise at each survey site. Indicative locations of the eight survey sites are presented in **Figure 22.9.2, Annex A**. Many sections of the onshore cable route were unlikely to be suitable to support hazel dormouse as they were prone to flooding (for example, Floodplain and Coastal Grazing Marsh and associated low lying areas in the Arun and Adur Valleys), and were therefore not selected for further survey work.
- 2.4.7 As the design of the Proposed Development evolved, a number of the survey sites areas are no longer within or adjacent to the proposed DCO Order Limits. However, the full hazel dormouse survey results are provided in this Appendix for the purpose of providing useful context.
- 2.4.8 The survey sites are referred to as follows:
- Survey site 1: Crossbush;
 - Survey site 2: Warningcamp;
 - Survey site 3: Wiston;
 - Survey site 4: Partridge Green;
 - Survey site 5: Wineham;

- Survey site 6: Kent Street;
- Survey site 7: Oakendene Industrial Estate; and
- Survey site 8: Ashurst.

2.5 Field survey methodology

- 2.5.1 The survey guidance set out by Bright et al. (2006) states that to effectively detect presence or likely absence of hazel dormouse a minimum of 50 nest tubes should be placed in for every continuous area of suitable habitat. The nest tube mimics a suitable nesting site on a branch of a tree or shrub. Nest tubes were made from a stiff black plastic sheet folded into a tube measuring approximately 5cm x 5cm square in cross section and 25cm long. A plywood tray is placed inside, with one end of the tube sealed with a wooden block mounted on the tray. Tubes were tied to the underside of suitable branches using wire.
- 2.5.2 Nest tube deployment was undertaken as follows:
- 2020: Nest tubes installed at Sites 1 and 2 in September;
 - 2021: Nest tubes installed at Site 6 in April and Sites 3,4 and 5 in July; and
 - 2022: Nest tubes installed at Sites 7 and 8 in April.
- 2.5.3 Once installed, survey guidance states that nest tubes should be checked every month for an entire season (April / May to October) for signs of hazel dormouse occupancy.

Nest tube survey technique

- 2.5.4 To effectively check each nest tube, a quiet and careful approach was made by the surveyor before the entrance was sealed with a cloth to prevent animals from escaping before they could be recorded. The inside of the nest tube was then carefully inspected for the presence of nests or animals. Any nesting material found within nest tubes was replaced 'as found' and the nest tube retied in the same location.

Other hazel dormouse field signs

- 2.5.5 During each hazel dormouse survey visit other signs of hazel dormouse presence were also searched for around tube locations, such as nests within trees and shrubs, and feeding remains comprising hazelnuts, honeysuckle flowers and stripped honeysuckle bark.
- 2.5.6 Nut searches were also conducted between October and November 2021 (inclusive) at survey sites 1 to 6 and between October and November 2022 at survey site 7 and 8 in order to supplement the presence or likely absence surveys. Bright et al. (2006) recommends searching on the ground around hazel stools in five 10m by 10m quadrats, searching for 20 minutes at each location. Hazelnuts eaten by hazel dormouse have a distinctive smooth round hole, as opposed to those eaten by other rodents where tooth marks are visible; this provides a definitive technique for confirming hazel dormouse presence.

Index of Probability

- 2.5.7 The current standing advice note from Natural England (Bright et al, 2006) bases the level of survey effort required and the corresponding likelihood of detecting dormouse on an Index of Probability (the 'index'). This index based on the number of nest tubes used for survey, combined with the number of months over which the surveys of the nest tubes is undertaken.
- 2.5.8 Within the index, each month has a probability value associated with it based on the known suitability of dormouse to use nest tubes within that month. The highest probability values are obtained during May, August and September, relating to the period of early nest building and dispersing sub-adults (see **Table 2-1**).

Table 2-1 Index of Probability of finding dormice in nest tubes in any one survey month

| Month of survey visit | Index of Probability value (for 50 tubes) |
|-------------------------|---|
| April | 1 |
| May | 4 |
| June | 2 |
| July | 2 |
| August | 5 |
| September | 7 |
| October | 2 |
| November | 2 |
| Minimum requirement: 20 | |

- 2.5.9 For each month that the nest tubes are in place and surveyed, that month's value is summed to provide a final Probability Score. In order for a dormouse survey to be considered valid and to reliably indicate presence of likely absence, the total score at the end of survey must be at least 20.

2.6 Limitations

- 2.6.1 Due to land access restrictions, it was not possible to deploy all nest tubes in April 2021, deployment was delayed in Survey sites 3, 4 and 5. **Table 2-2** summarises the reasons for the delayed deployment.

Table 2-2 Summary of Sites with delayed nest tube deployment

| Survey site | Nest tube deployment date | Reason for delayed deployment | Disruption significant |
|----------------------|--------------------------------------|---|--|
| Survey site 3 | 24 June 2021 | Land access restrictions. | No, additional (70) nesting tubes deployed |
| Survey site 4 | 15 in April 2021 and 35 in June 2021 | Two stage deployment was undertaken as further land parcels became available. | No |
| Survey site 5 | 50 in June 2021 and 25 in July | Two stage deployment was required due to the temporary restriction of land access at the deployment site. | No, additional (75) nesting tubes deployed |

- 2.6.2 Nest tubes in Survey sites 1 and 2 were left in situ between 2020 and 2021, however a proportion in each site were redeployed ahead of the 2021 surveys following the removal of an onshore cable route option being considered at Crossbush. Twenty tubes were relocated at Survey site 1 and 53 tubes were relocated at Survey site 2 to allow for further survey coverage.
- 2.6.3 Eight nest tubes could not be checked in Survey site 5 in August 2021 due to the temporary land access restrictions.
- 2.6.4 Four nest tubes could not be checked in Survey site 1 in Batworth Park Plantation in August 2021 due to dense scrub growth preventing access.
- 2.6.5 In 2021, a number of hedgerows at Survey site 5 were found to be defunct and of poor quality on the initial site visit, and so nest tubes were placed in more suitable areas within Survey site 5. Similarly, an area of suitable woodland within Survey site 5 could not be surveyed due to the limited availability of understorey cover or suitable branches to attach the nest tubes to, and so tubes were deployed in different area of the same woodland.
- 2.6.6 In 2022, a number of hedgerows at Survey site 7 were found to be defunct and of poor quality, as well as evidence of regular and heavy flailing, and so nest tubes were placed in more suitable areas within Survey site 7. Survey site 8 could not be accessed for survey in June and July 2022 due to land access restrictions.
- 2.6.7 Nest boxes were not deployed in addition to nest tubes at any of the survey sites as they do not contribute to the index of probability score and a sufficient area of suitable habitat was available at each survey site as not to require them.
- 2.6.8 All survey sites contained numerous areas of mature hazel, however 2021 was not a mast year and the trees produced negligible numbers of nuts, and as such, five 10m by 10m quadrats were not feasible at any of the survey sites. Bright et al. (2006) was adapted by collecting and assessing all hazelnuts eaten by rodents to ensure an appropriate level of search effort at each location. Furthermore, search

areas were expanded at Survey sites 3, 4 and 5 to increase the detection of hazelnuts. Despite this and following an adequate search effort, 100 hazelnuts could not be found to be assessed at Survey sites 1 (59) and 6 (40).

- 2.6.9 The limitations above (**paragraphs 2.6.1 - 2.6.8**) are not deemed to be significant, where necessary additional nesting tubes were deployed to ensure a minimum threshold index of probability score was obtained.

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3. Results

3.1 Desk study results

- 3.1.1 A total of 265 records of hazel dormouse made within 5km of proposed DCO Order Limits were provided by Sussex Biodiversity Records Centre (SxBRC). All records were within the last ten years. None of these were made on land inside the proposed DCO Order Limits. A summary of the records is provided below in **Table 3-1**.

Table 3-1 Desk study results

| Number of records | Distance and direction from proposed DCO Order Limits |
|-------------------|---|
| 49 | Within 1km – To the north and north-west |
| 77 | Within 1km to 3km – To the east and south-east |
| 139 | Within 3km to 5km – To the south-east |

- 3.1.2 Records were primarily clustered around Binsted Woods (2.5km west of the proposed DCO Order Limits and 2.4km west of Survey site 1); and north of Storrington (1.2 to 3.1km north of the proposed DCO Order Limits and 3.8km west of Survey site 3).
- 3.1.3 The closest records were located just south of the A27 at Hammerpot (300m south of the proposed DCO Order Limits).
- 3.1.4 **Figure 22.9.3, Annex A** shows the distribution of the desk study records.

Survey Site Selection

- 3.1.5 Suitable hazel dormouse habitat was recorded in all survey sites, and nest tubes were placed in predetermined locations based of the Phase 1 habitat survey mapping data (see **Appendix 22.3: Extended Phase 1 Habitat Survey, Volume 4**), as shown below in **Table 3-2**.
- 3.1.6 Rationale for survey site selection is provided in **Table 3-2** below, with a summary of site size / length and the number of nest tubes used, and nest tube locations for each survey site are presented in **Figure 22.9.4, Annex A**.

Table 3-2 Survey Sites and rationale for survey

| Survey Site | Rationale for survey | Size / Length of site |
|--|--|------------------------------|
| <p>Survey site 1 Crossbush</p> <p>Surveyed in 2020 and 2021</p> | <p>Site description: Two ancient semi-natural woodland blocks (Batworth Park Plantation: 12.9 hectares (ha) and Park Rough: 5ha).</p> <p>Structure and species composition: Batworth Park Plantation had high tree and shrub species diversity and dense understory. Park Rough had good tree and shrub species diversity and a sparse understory.</p> <p>Connectivity within survey site / Connectivity beyond survey site: Connected to one another and to the wider landscape by hedgerow / treelines and scrub habitat.</p> <p>Context to proposed DCO Order Limits: The southern boundary of Park Rough is located 1.1km from the proposed DCO Order Limits.</p> | <p>17.9ha, 500m</p> |
| <p>2020 survey site: Mature tree line (15-20m wide) comprised of broadleaved deciduous trees with hedgerow / bramble component at base. The tree line had connectivity to the wider landscape.</p> | | <p>370m</p> |
| <p>Survey site 2 Warningcamp</p> <p>Surveyed in 2020 and 2021</p> | <p>Site description: An ancient semi-natural broadleaved woodland (Woodleighs: 17.1ha), connected hedgerows / tree lines, and a young broadleaved plantation woodland block (2.1ha).</p> <p>Structure and species composition: Woodleighs was ash dominated with occasional oak and had a dense understory containing hazel coppice. The woodland block was comprised of young ash and beech with dense hawthorn and dogwood understory. The surveyed hedgerow sections were species-rich with fruit bearing plants.</p> <p>Connectivity within survey site / Connectivity beyond survey site: Connected to one another and to the wider landscape by hedgerow / treelines and scrub habitat.</p> <p>Context to proposed DCO Order Limits: The eastern boundary of Woodleighs is 0.25km west of the proposed DCO Order Limits.</p> | <p>19.2ha, 520m</p> |

| Survey Site | Rationale for survey | Size / Length of site |
|---|---|-----------------------|
| | 2020 survey site: An ancient semi-natural woodland parcel (The Knell: 3ha) connected to a large expanse of woodland (520ha) to the south by hedgerow and arboreal tree links. The woodland was comprised of hazel coppice, mature oak and silver birch. | 3.0ha, 545m |
| Survey site 3 Wiston Surveyed in 2021 | <p>Site description: Narrow 15m wide mature broadleaved woodland (Brush Hovel: 0.4ha) with bridleway running through the centre. Connecting hedgerows marking field boundaries.</p> <p>Structure and species composition: Brush Hovel is a mature oak, ash and white poplar woodland with abundant hazel coppice and occasional bramble. Species-rich hedgerows demarcating field boundaries dominated by hazel with frequent blackthorn, occasional field maple. Bracken and bramble dominant with occasional honeysuckle.</p> <p>Connectivity within survey site / Connectivity beyond survey site: Both treeline and hedgerows were connected to one another and to the surrounding hedgerows in the wider landscape.</p> <p>Context to proposed DCO Order Limits: The proposed Order Limits intersects Survey site 3.</p> | 0.4ha, 680m |
| Survey site 4 Partridge Green Surveyed in 2021 | <p>Site description: Deciduous broadleaved woodland (Millar's Wood 19.4ha), and connected hedgerows.</p> <p>Structure and species composition: Oak dominate woodland with understorey layer comprised of frequent hazel coppice. The surveyed hedgerow sections were intact and species-poor comprising of hawthorn and bramble.</p> <p>Connectivity within survey site / Connectivity beyond survey site: The woodland and surveyed hedgerow sections were connected to one another and to the wider landscape by hedgerows and tree lines.</p> <p>Context to proposed DCO Order Limits: The eastern boundary of the woodland which makes up Survey site 4 overlaps the proposed DCO Order Limits.</p> | 19.4ha, 375m |

| Survey Site | Rationale for survey | Size / Length of site |
|---|--|-----------------------|
| <p>Survey site 5 Wineham</p> <p>Surveyed in 2021</p> | <p>Site description: Deciduous broadleaved woodland parcel (1.6ha) and field margin hedgerows with mature trees.</p> <p>Structure and species composition: The woodland was dominated by oak and the understory layer was comprised of dense hawthorn and dog rose. The hedgerows were predominantly comprised of blackthorn and hawthorn with hazel in sections.</p> <p>Connectivity within survey site / Connectivity beyond survey site: The woodland parcel and surveyed hedgerow sections are connected to one another and to the wider landscape by scrub sections and hedgerows with trees.</p> <p>Context to proposed DCO Order Limits: Survey site 5 intersects the proposed DCO Order Limits at multiple points.</p> | 1.6ha, 620m |
| <p>Survey site 6 Kent Street</p> <p>Surveyed in 2021</p> | <p>Site description: Deciduous oak woodland (20.4 ha).</p> <p>Structure and species composition: Oak dominated species-rich woodland, managed for pheasant rearing. The understorey layer is dominated with hazel coppice and bramble.</p> <p>Connectivity within survey site / Connectivity beyond survey site: The woodland is well connected to the wider landscape by hedgerows and tree lines.</p> <p>Context to proposed DCO Order Limits: Survey site 6 is located 0.5km from the proposed DCO Order Limits.</p> | 20.4ha |
| <p>Survey site 7 Oakendene Industrial Estate</p> <p>Surveyed in 2022</p> | <p>Site description: Improved grassland with field margin hedgerows with mature trees and mixed deciduous woodland.</p> <p>Structure and species composition: Blackthorn and hawthorn dominated hedgerows with occasional mature and semi mature oak trees, maintained as field boundaries. A 3.6ha woodland at the south of the survey area contains a mix of oak, hazel, bramble, blackthorn and hawthorn.</p> | 19ha |

| Survey Site | Rationale for survey | Size / Length of site |
|--|--|-----------------------|
| | <p>Connectivity within survey site / Connectivity beyond survey site: The hedgerows are well connected to the wider landscape by hedgerows and tree lines.</p> <p>Context to proposed DCO Order Limits: The hedgerows and woodland which comprise Survey site 7 intersect the proposed DCO Order Limits.</p> | |
| <p>Survey site 8 Ashurst</p> <p>Surveyed in 2022</p> | <p>Site description: Historic improved and poor semi-improved grassland with field margin intact species-poor hedgerows with mature trees.</p> <p>Structure and species composition: Blackthorn and hawthorn dominated hedgerows with occasional mature and semi mature oak trees, maintained as field boundaries. Rare hazel coppice appearing throughout. Two small woodlands comprising of semi mature oak, as well as a bramble and hazel understory are situated in the middle of the study area, connected to the hedgerows surveyed.</p> <p>Connectivity within survey site / Connectivity beyond survey site: The hedgerows were well connected to the wider landscape by hedgerows and tree lines.</p> <p>Context to proposed DCO Order Limits: Survey site 8 intersects the proposed DCO Order Limits at multiple locations.</p> | 25.9ha |

3.2 Field survey results

Nest tube survey

- 3.2.1 One hazel dormouse was found during the survey period: a juvenile at Survey site 7 (nest tube 70 – see **Figure 22.9.4, Annex A**) during the October 2022 survey visit.
- 3.2.2 Evidence of other rodent species using the tubes in similar habitats, and within other hedgerows within the proposed DCO Order Limits, was also recorded on each visit. Both wood mice and yellow-necked mice were recorded; however, it is not possible to distinguish between the nests created by these two species, with distinction only possible by inspecting mice in the hand if they were found at the time of the survey visits. Records of other animals and field observations during each survey are presented in **Table B-1 in Annex B: Survey results**.

Other signs

3.2.3 In 2021, hazelnut searches were carried out in six survey sites where mature hazel was found to be present, shown in **Figure 22.9.5, Annex A**. No nuts that had been eaten by hazel dormouse were identified.

3.3 Index of probability results

3.3.1 In order to achieve the appropriate Index of Probability Score (see **Table 2-1, Section 2.5**), tubes were left in-situ and were surveyed between April and October 2021, and May and October 2022. A minimum of 50 tubes were used in each site and additional tubes were used in sites when the deployment dates were setback due to land access restrictions.

3.3.2 Survey sites 1 and 2 were surveyed in 2020 and 2021. The 2020 probability score was not adequate to count as a valid survey (see **paragraphs 2.5.7 to 2.5.9**), and therefore surveys into a second season were required.

3.3.3 The score achieved at all the survey sites is above the minimum score of 20 required for a valid survey and it is therefore reasonable to conclude that hazel dormouse presence or absence can be confidently determined. See **Table 3-3** for a summary of the scores for each survey site.

Table 3-3 Summary of Index of Probability Scores

| Survey Site | Deployment date | No. of tubes | Score (year) |
|---------------|-------------------------------------|--------------|---------------|
| Survey site 1 | 28 September 2020, 08 April 2021 | 100 (2020) | 8 (2020) |
| | | 110 (2021) | 55 (2021) |
| | | | 63 (combined) |
| Survey site 2 | 29 September 2020, 08 April 2021 | 100 (2020) | 8 (2020) |
| | | 100 (2021) | 50 (2021) |
| | | | 58 (combined) |
| Survey site 3 | 24 June 2021 | 70 | 28.8 (2021) |
| Survey site 4 | 27 April 2021, 23 June 2021 | (15, 35) 50 | 21.5 (2021) |
| Survey site 5 | 03 June 2021, 13 July 2021 | (50, 25) 75 | 26 (2021) |
| Survey site 6 | 01 April 2021 | 50 | 25 (2021) |
| Survey site 7 | 05 April 2022 | 100 | 22 (2022) |
| Survey site 8 | 06 April 2022 | 100 | 22 (2022) |

4. Discussion

4.1 Survey Results

- 4.1.1 The desk study provided 265 records of hazel dormouse within 5km of the study area, with the nearest record made 300m south of the proposed DCO Order Limits.
- 4.1.2 Presence or likely absence, and nut search surveys were conducted in suitable habitat within or in proximity to the proposed DCO Order Limits between September 2020 and November 2022. A single dormouse was found at Survey site 7 during the October 2022 survey, thus confirming dormouse presence at this location only. No other signs of hazel dormouse were identified during these surveys.

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5. References

Bright, P., Morris, P. and Mitchell-Jones, T., (2006). *The dormouse conservation handbook. Second edition*. English Nature, Peterborough.

Chartered Institute of Ecology and Environmental Management (CIEEM), (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland, Second Edition*. [Online] Available at: <https://cieem.net/wp-content/uploads/2018/08/ECIA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.2-April-22-Compressed.pdf> [Accessed 05 June 2023].

Chartered Institute of Ecology and Environmental Management (CIEEM), (2021). *Guidelines on Ecological Survey and Assessment in the UK During the COVID-19 Outbreak* [online]. Available at: <https://cieem.net/wp-content/uploads/2020/06/CIEEM-Guidance-on-Alternative-Approaches-v4-FINAL.pdf> [Accessed 05 June 2023].

Natural England, (2011). *Interim Natural England Advice Note; Dormouse Surveys for Mitigation Licensing – Best practice and common misconceptions*. WML-G37 (12/11) Natural England.

Natural England, (2015). *Standing advice note; Dormouse*. Natural England.

Planning Inspectorate (2018) *Advice Note Nine: Rochdale Envelope* [online]. Available at: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-nine-rochdale-envelope/> [Accessed 05 June 2023].

The Conservation of Habitats and Species Regulations 2010. [Online] Available at: <https://www.legislation.gov.uk/uksi/2010/490/contents/made> [Accessed 05 June 2023].

Wildlife and Countryside Act 1981. [Online] Available at: <https://www.legislation.gov.uk/ukpga/1981/69> [Accessed 05 June 2023].

Annex A


Figures

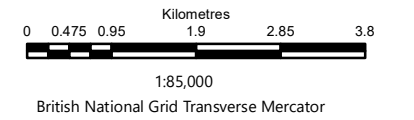
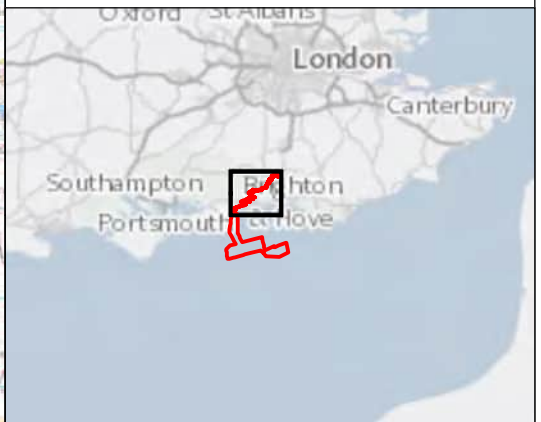
- Figure 22.9.1 Site plan
- Figure 22.9.2 Dormouse survey sites
- Figure 22.9.3 Desk study results
- Figure 22.9.4 Dormouse nest tube locations
- Figure 22.9.5 Hazelnut search locations

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Key
 Proposed DCO Order Limits

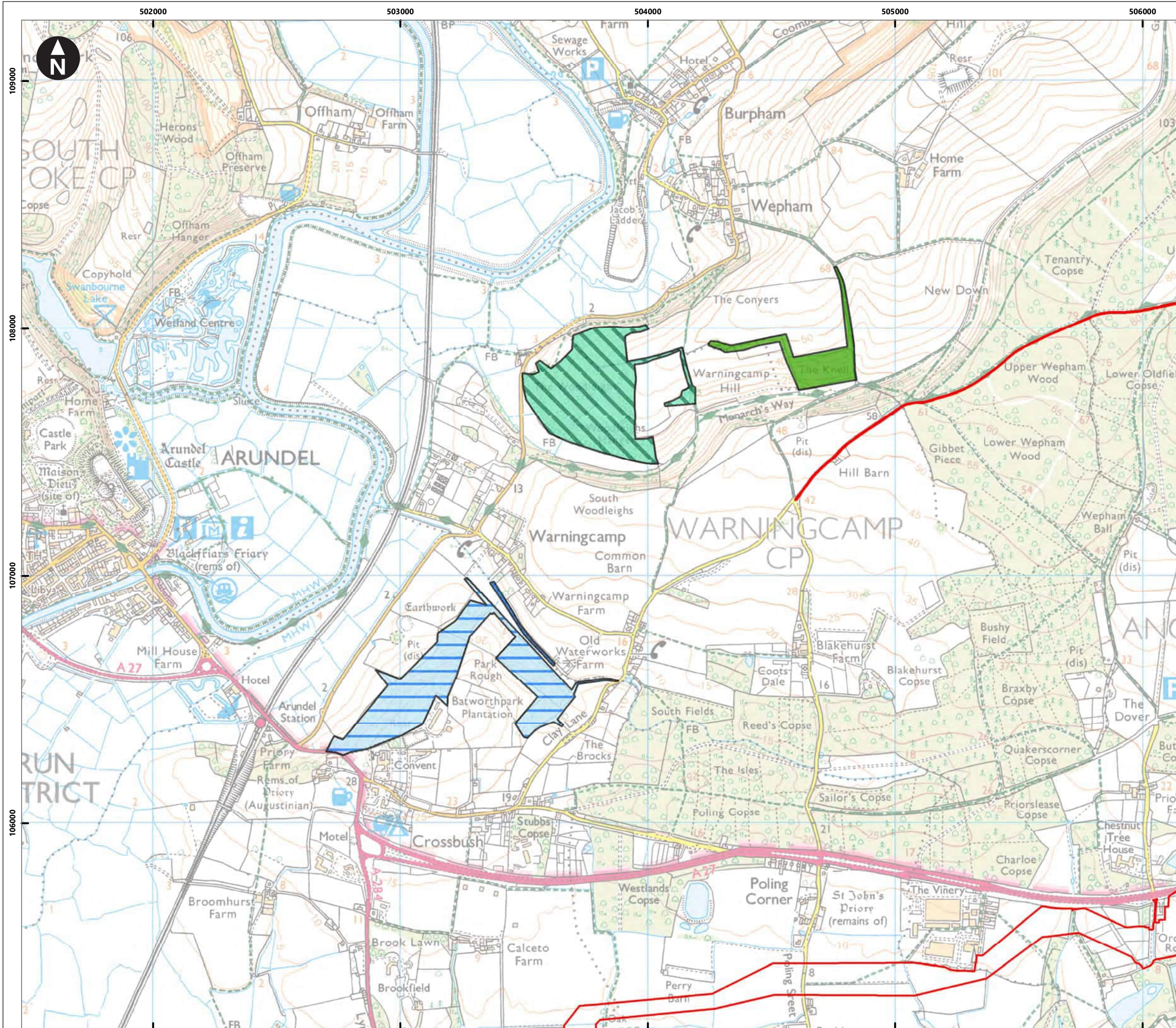


Rampion Extension Development


Rampion 2 Offshore Wind Farm
 22.9.1 Site Plan

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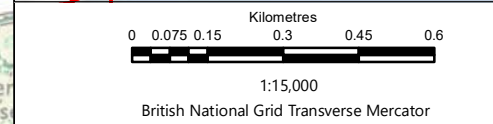
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Key

- Proposed DCO Order
- 2020**
- Survey site 1
- Survey site 2
- 2021**
- Survey site 1
- Survey site 2
- Survey site 3
- Survey site 4
- Survey site 5
- Survey site 6
- 2022**
- Survey site 7
- Survey site 8



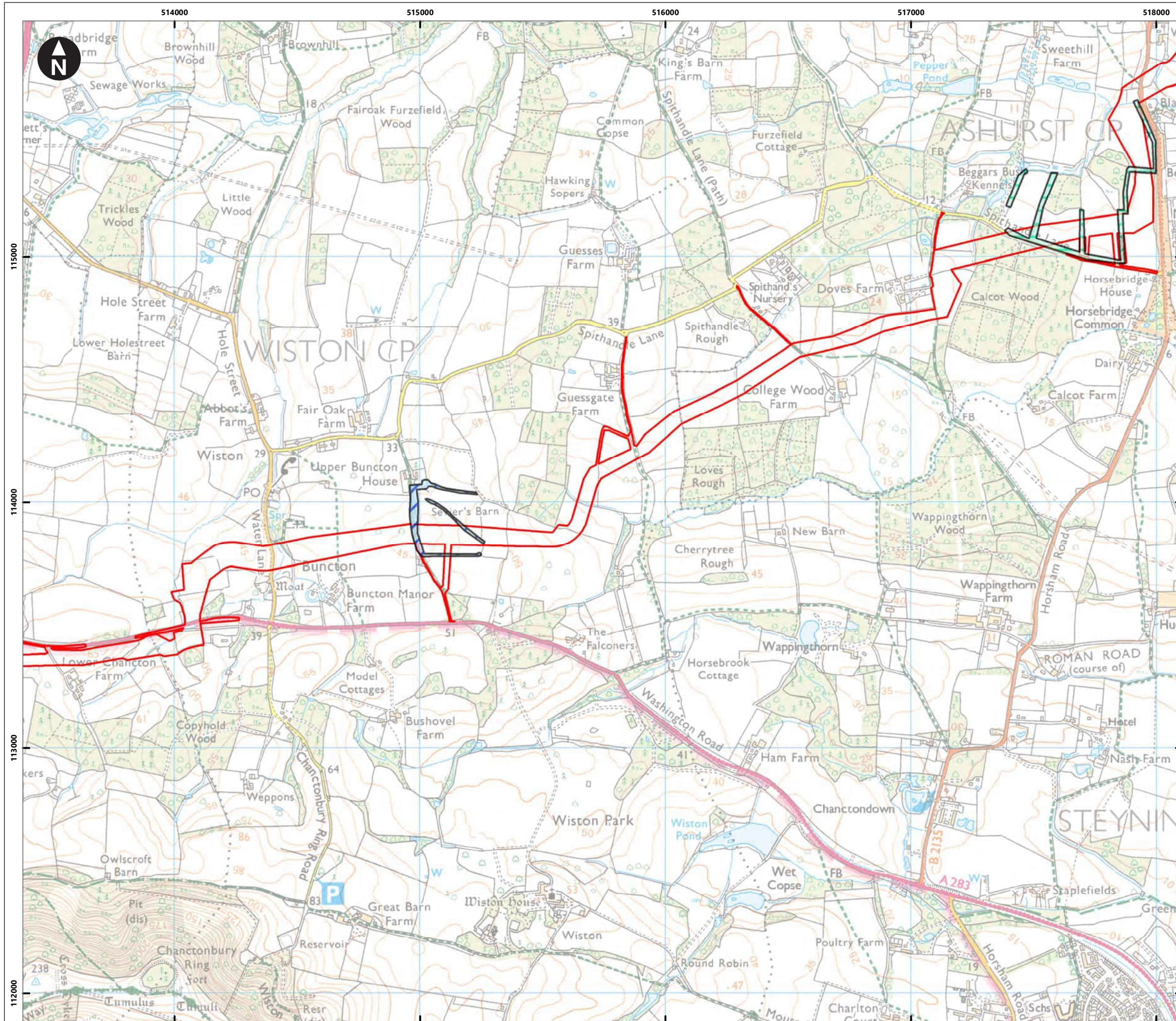
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Rampion 2 Offshore Wind Farm
 22.9.2 Dormouse survey sites

Page 1 of 3

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Key

- Proposed DCO Order
- 2020**
 - Survey site 1
 - Survey site 2
- 2021**
 - Survey site 1
 - Survey site 2
 - Survey site 3
 - Survey site 4
 - Survey site 5
 - Survey site 6
- 2022**
 - Survey site 7
 - Survey site 8

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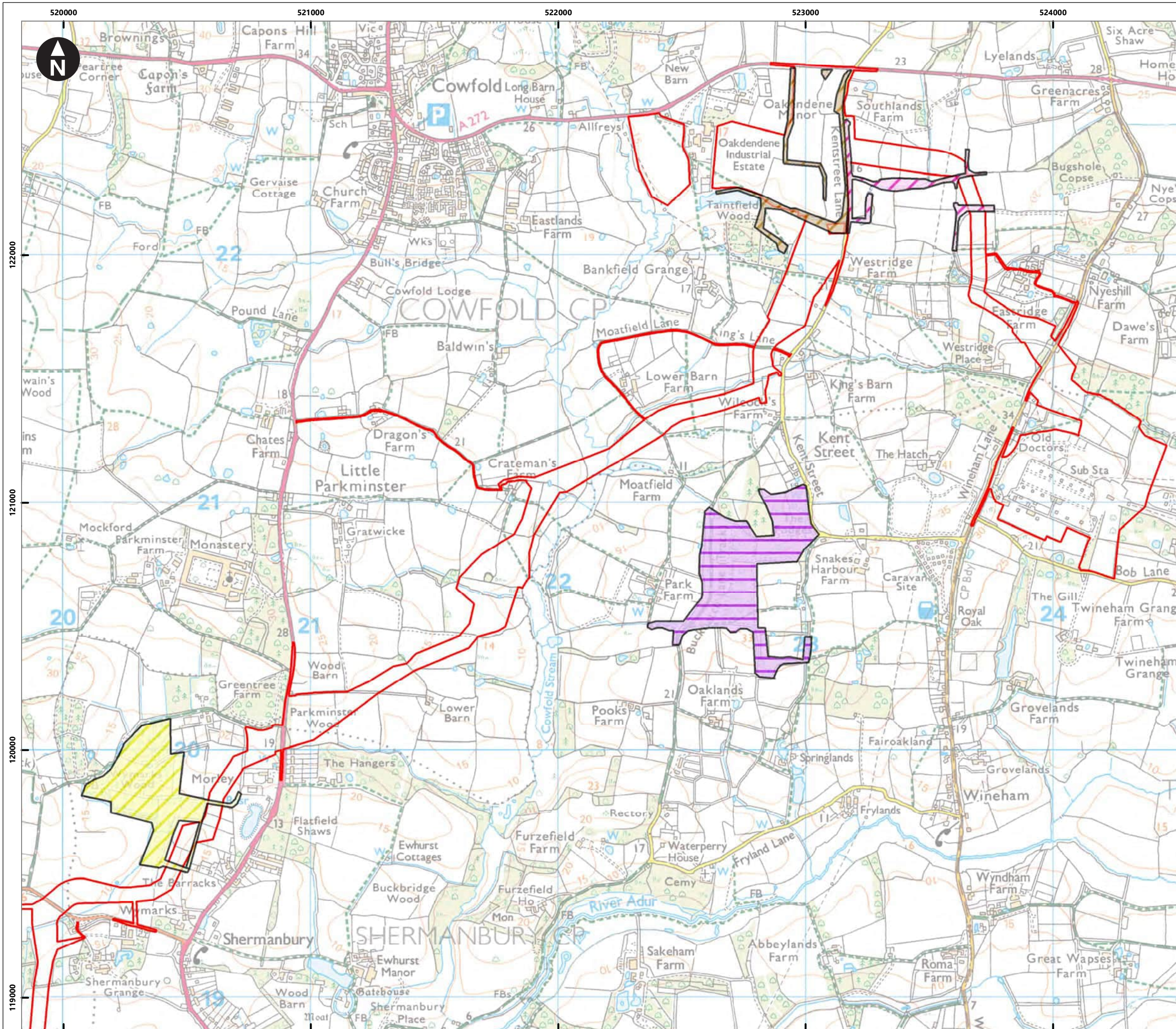
Rampion Extension Development

Rampion 2 Offshore Wind Farm
 22.9.2 Dormouse survey sites

Page 2 of 3

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Key

- Proposed DCO Order
- 2020**
 - Survey site 1
 - Survey site 2
- 2021**
 - Survey site 1
 - Survey site 2
 - Survey site 3
 - Survey site 4
 - Survey site 5
 - Survey site 6
- 2022**
 - Survey site 7
 - Survey site 8

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Rampion Extension Development

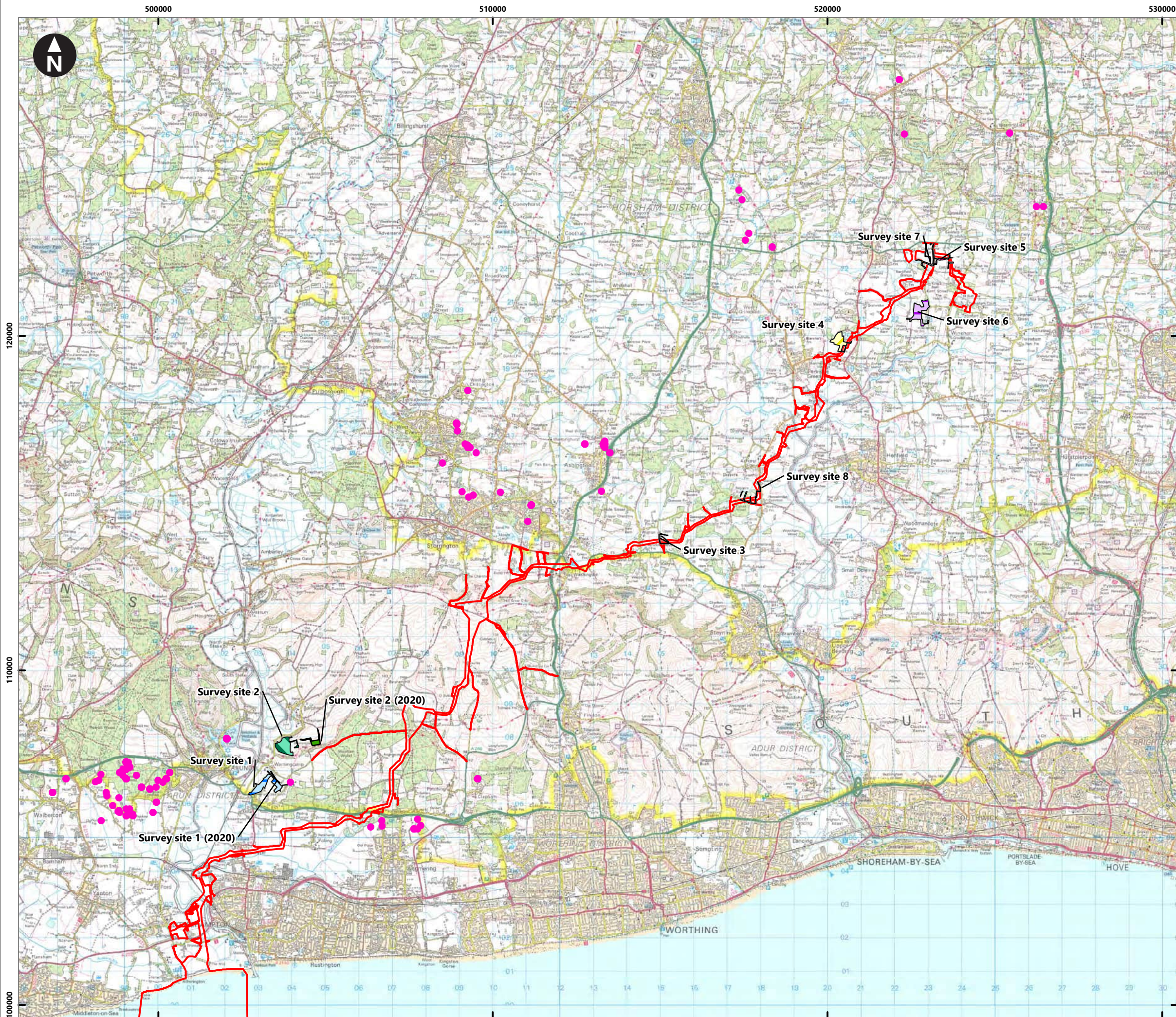
Rampion 2 Offshore Wind Farm

22.9.2 Dormouse survey sites

Page 3 of 3

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Key

- Proposed DCO Order
- Hazel Dormouse Records

2020

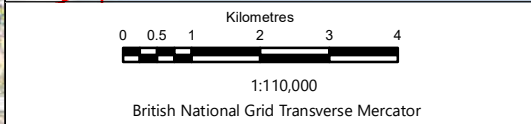
- Survey site 1
- Survey site 2

2021

- Survey site 1
- Survey site 2
- Survey site 3
- Survey site 4
- Survey site 5
- Survey site 6

2022

- Survey site 7
- Survey site 8



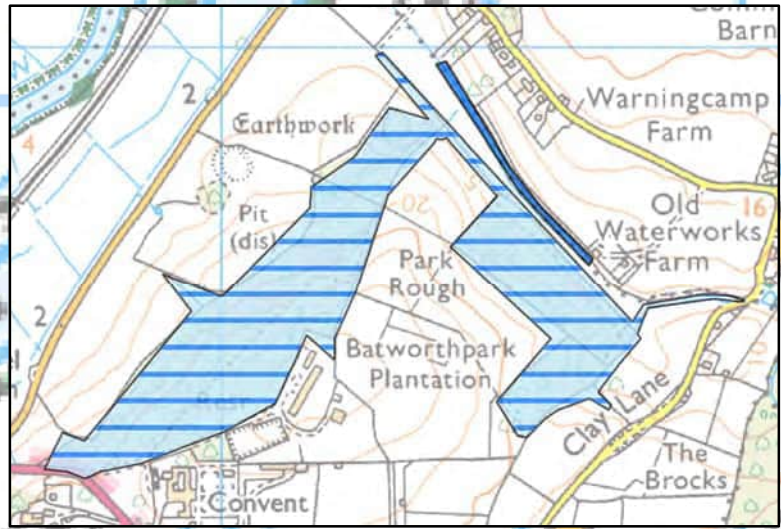
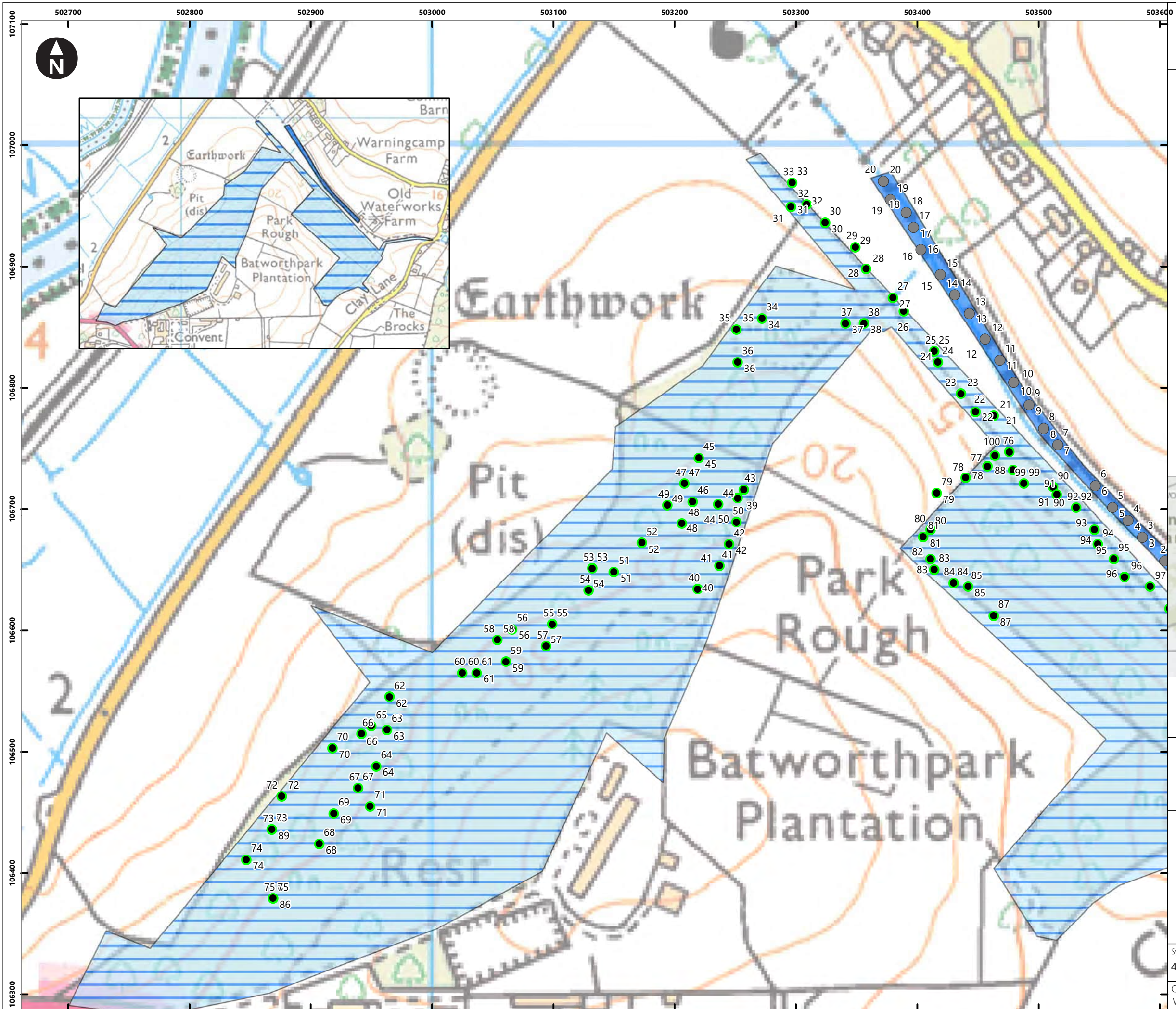
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Rampion 2 Offshore Wind Farm
 22.9.3 Desk study results

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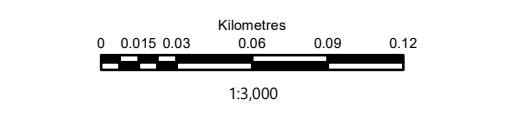
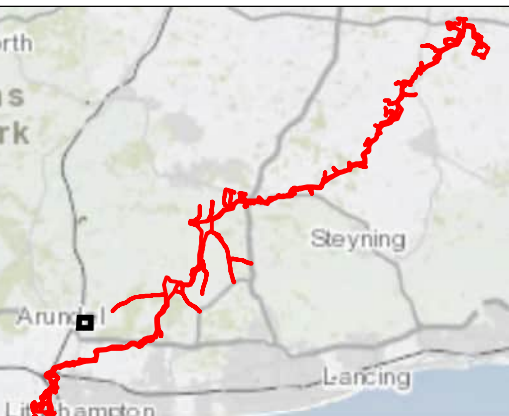
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Key

- Proposed DCO Order Limits
- Survey site 1 (2020)
- Survey site 1

Year of deployment

- 2020
- 2020 and 2021

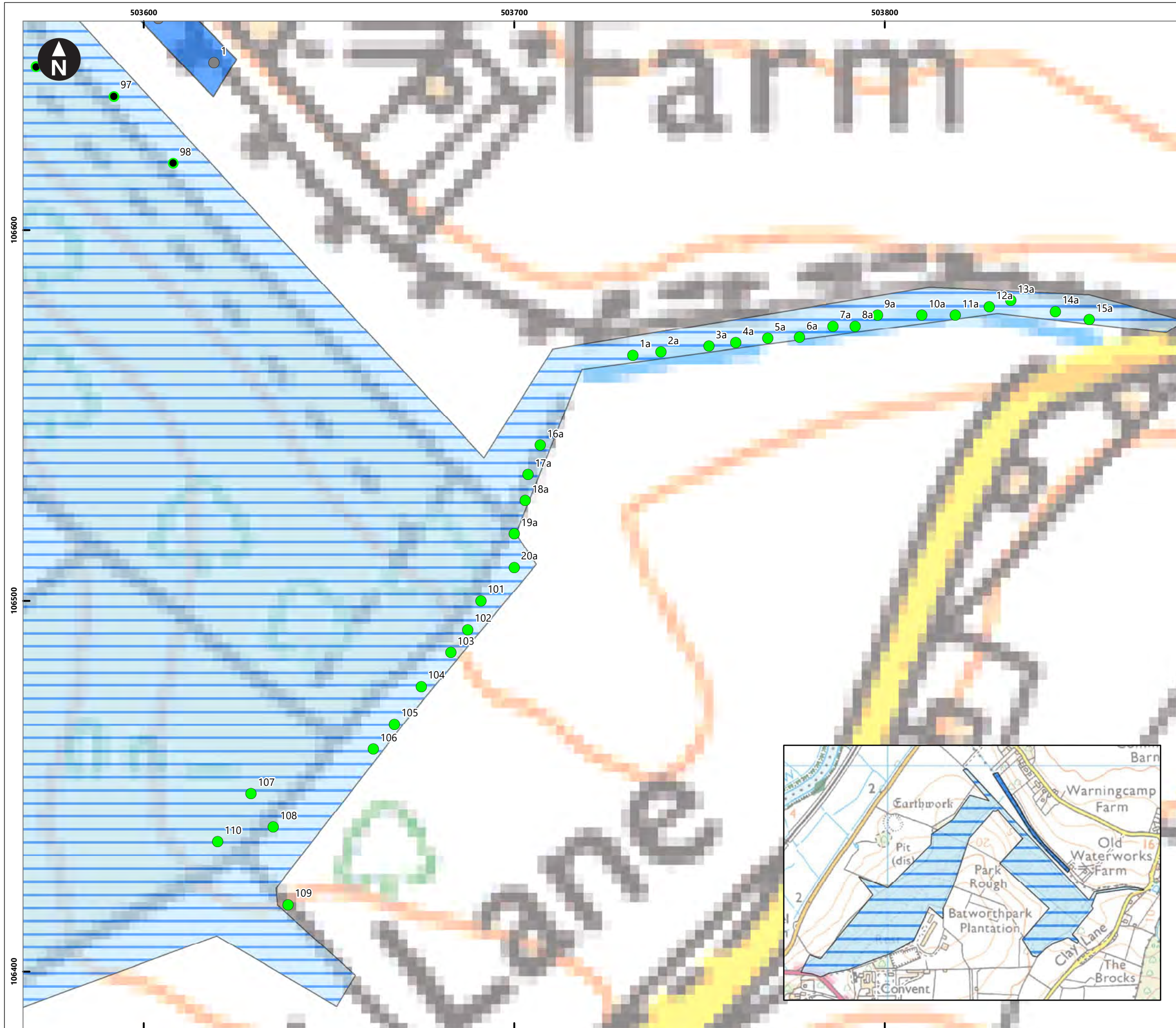


Rampion Extension Development

Rampion 2 Offshore Wind Farm
 22.9.4a Dormouse nest tube locations
 Area 1

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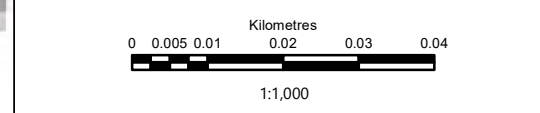
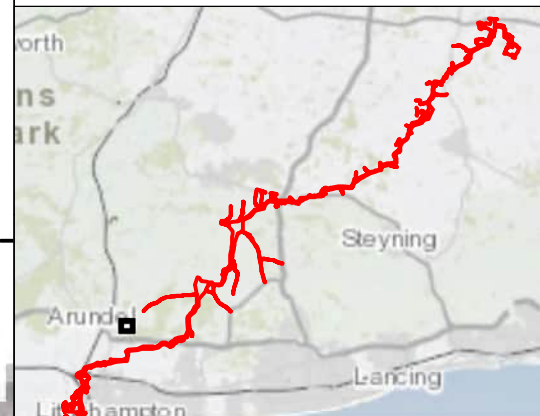
Service Layer Credits: Contains OS data © Crown Copyright and database right 2020
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Key

- Proposed DCO Order Limits
- Survey site 1 (2020)
- Survey site 1

Year of deployment

- 2020
- 2020 and 2021
- 2021 'a' denotes tubes moved from Areas 1 (2020) to Area 1 (2021)

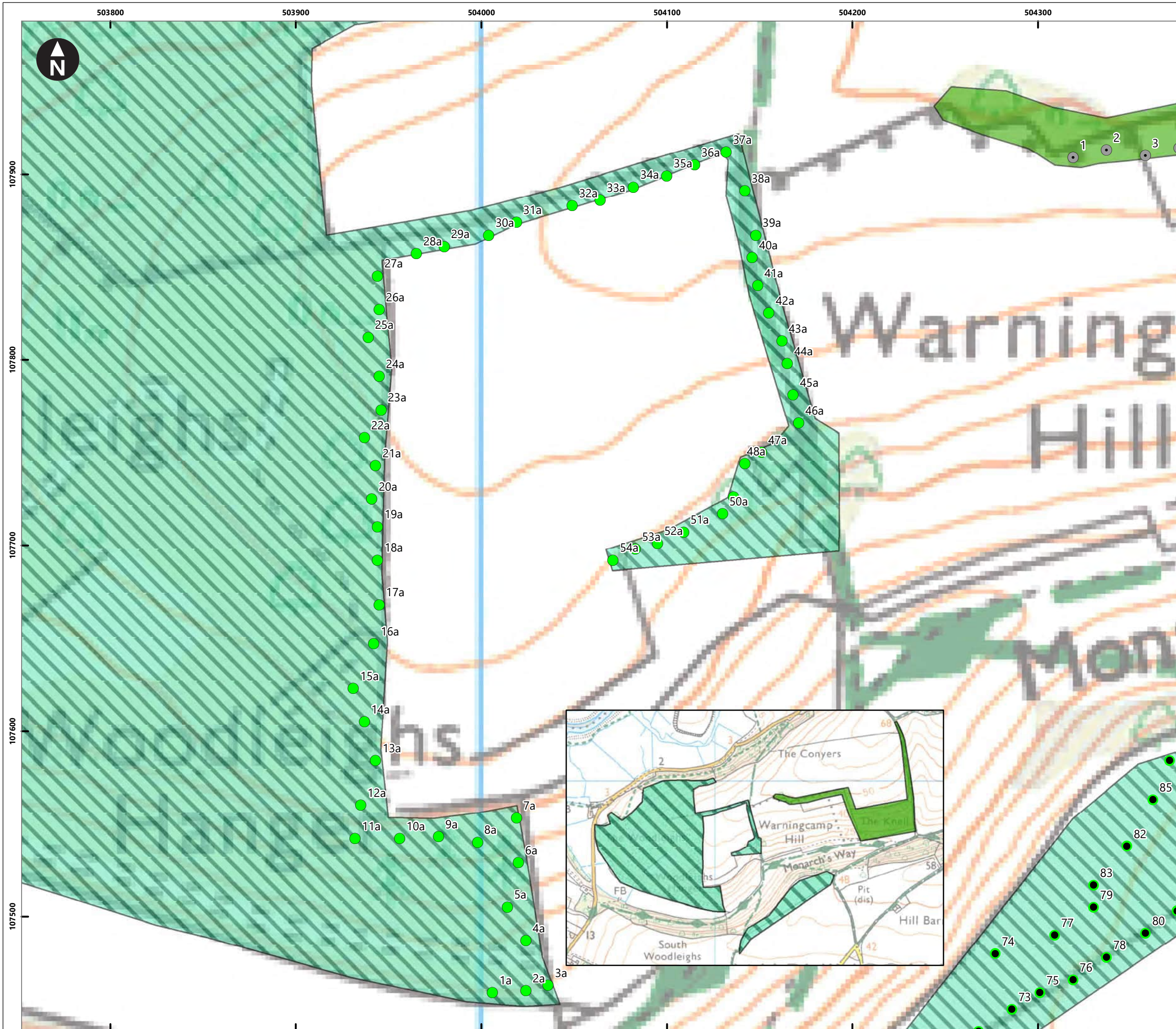


Rampion Extension Development

Rampion 2 Offshore Wind Farm
 22.9.4b Dormouse nest tube locations
 Area 1

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|---|-----------------|
| System Identifier: 42285-WSPE-ES-ON-FG-OO-8692 | Version: 1.0 |
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|-----------------|--------------------|---------------------|---------------------------|------------------|
| Company: WSP | Drawn By: HADJE | Chk/Aprvd: SUTET | Drawn Date: 25/05/2023 | Status: FINAL |
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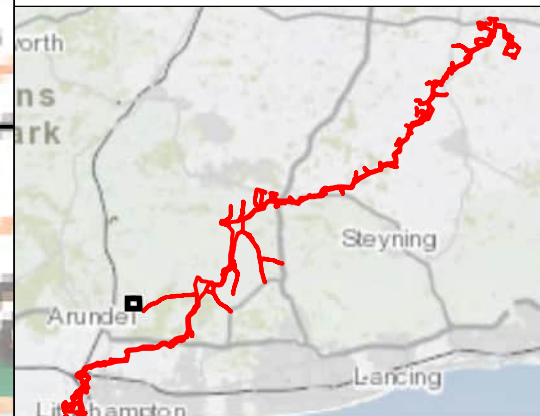
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Key

- Proposed DCO Order
- Survey site 2 (2020)
- Survey site 2

Year of deployment

- 2020
- 2020 and 2021
- 2021 'a' denotes tubes moved from Areas 2 (2020) to Area 2 (2021)

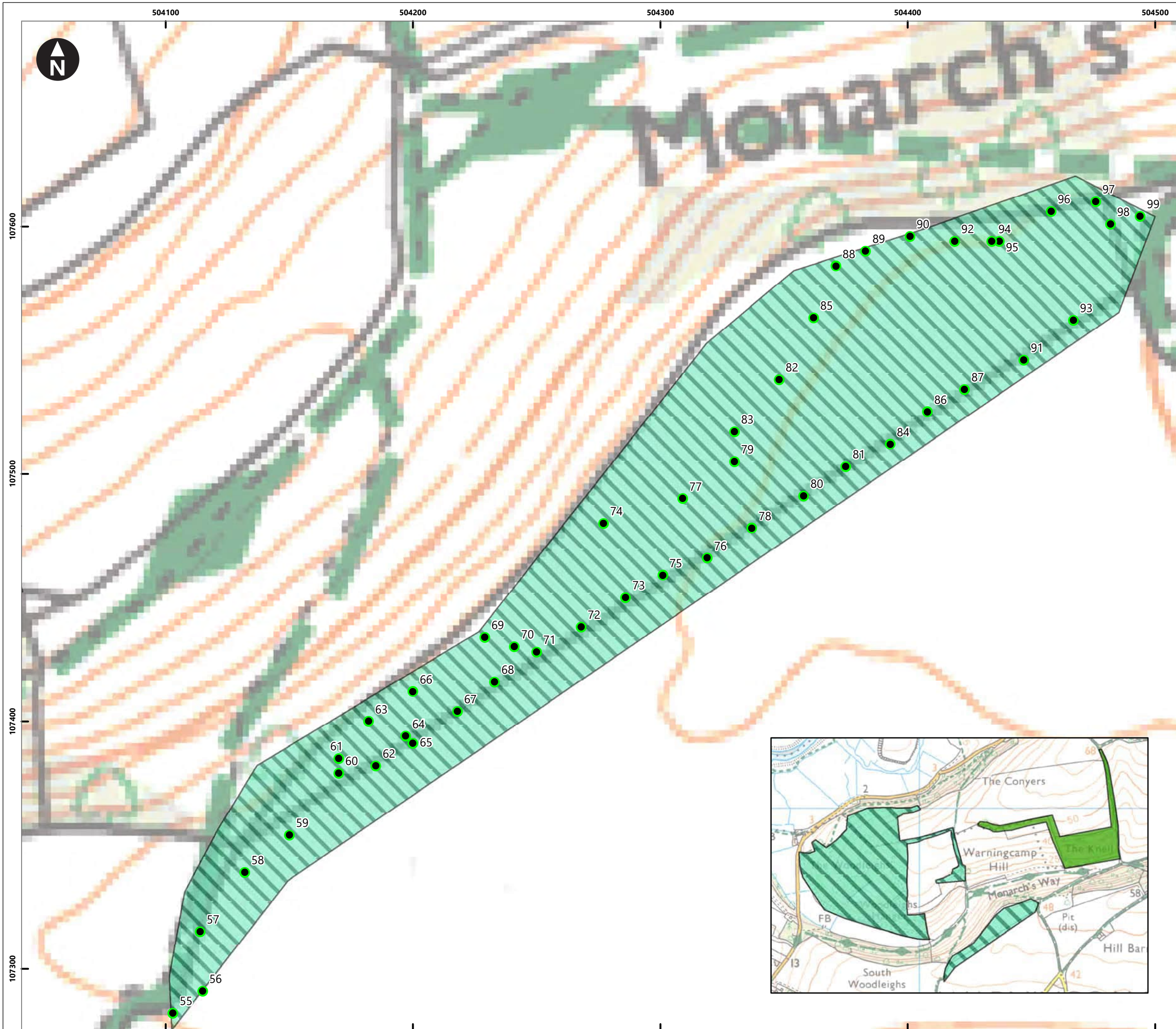


Rampion Extension Development

Rampion 2 Offshore Wind Farm
 22.9.4c Dormouse nest tube locations
 Area 2

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|---|-----------------|
| System Identifier: 42285-WSPE-ES-ON-FG-OO-8692 | Version: 1.0 |
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| Company: WSP | Drawn By: HADJE | Chk/Prvrd: SUTET | Drawn Date: 25/05/2023 | Status: FINAL |
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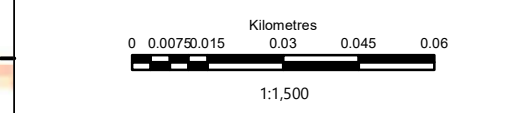
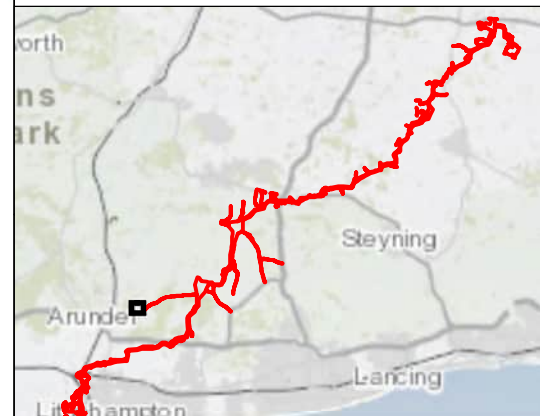
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Key

- Proposed DCO Order Limits
- Survey site 2

Year of deployment

- 2020 and 2021

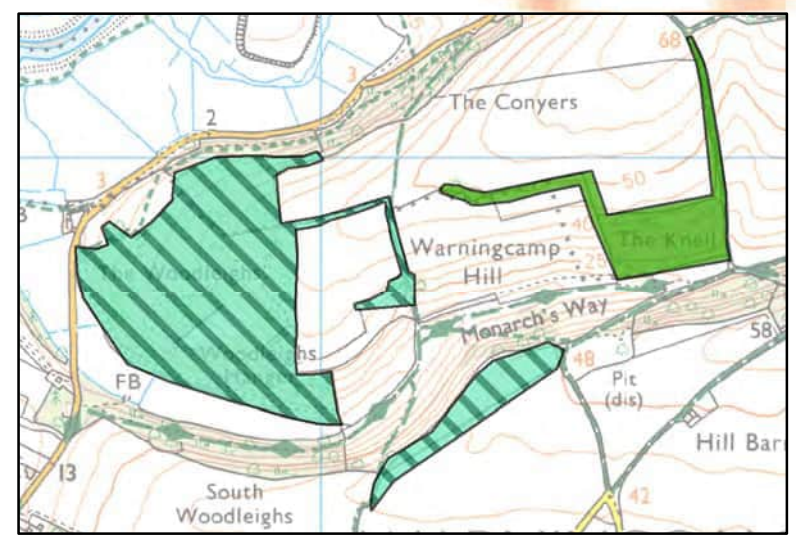


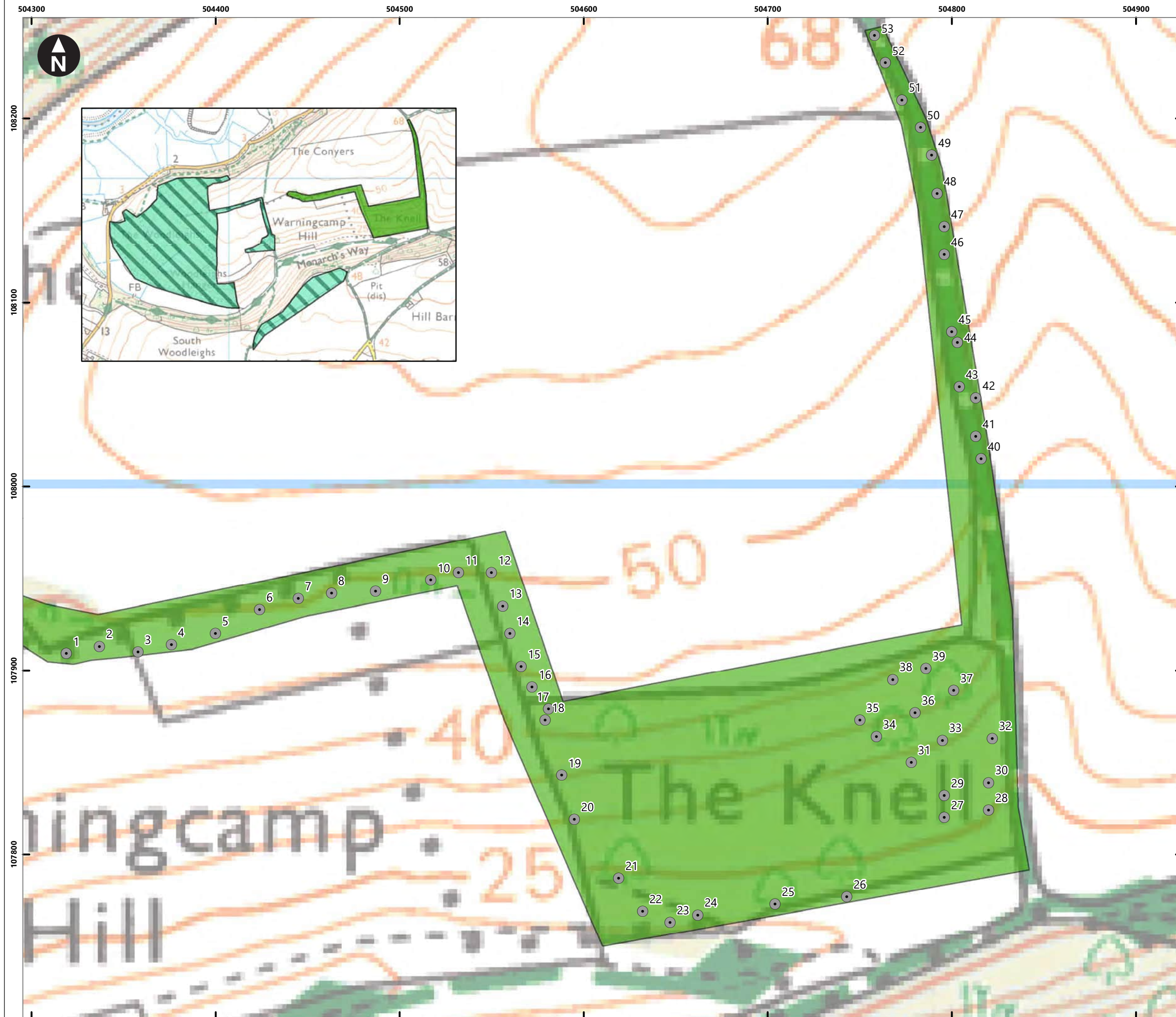
Rampion Extension Development

Rampion 2 Offshore Wind Farm
 22.9.4d Dormouse nest tube locations
 Area 2

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| System Identifier: 42285-WSPE-ES-ON-FG-OO-8692 | Version: 1.0 |
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| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET | Drawn Date: 25/05/2023 | Status: FINAL |
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Key

- Proposed DCO Order Limits
- Survey site 2 (2020)

Year of deployment

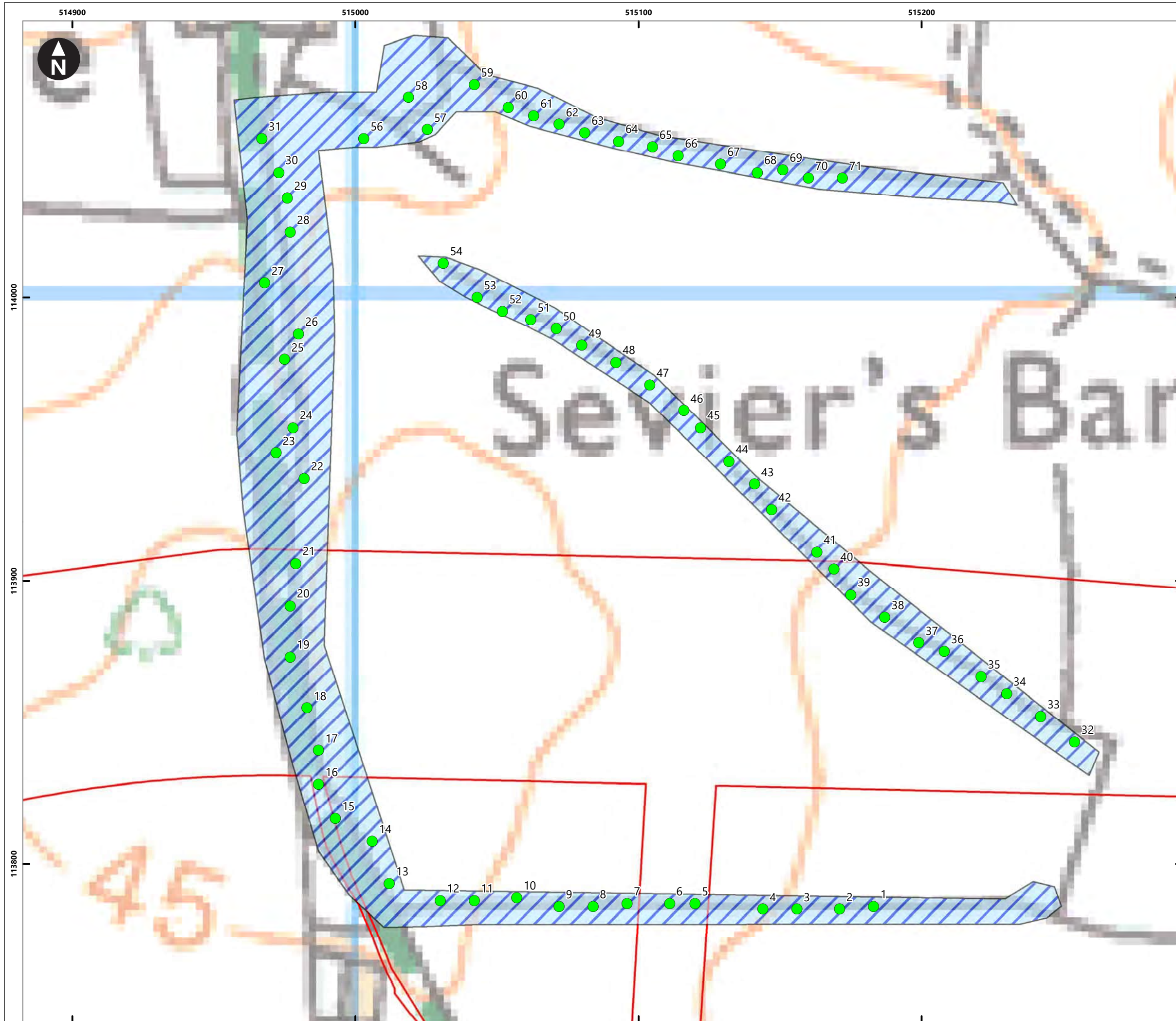
- 2020

Scale: 0 0.01 0.02 0.04 0.06 0.08 Kilometres
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Rampion Extension Development

Rampion 2 Offshore Wind Farm
 22.9.4e Dormouse nest tube locations
 Area 2

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| System Identifier: 42285-WSPE-ES-ON-FG-OO-8692 | | Version: 1.0 |
| Company: WSP | Drawn By: HADJE | Chk/Aprvd: SUTET |
| Drawn Date: 25/05/2023 | Status: FINAL | |



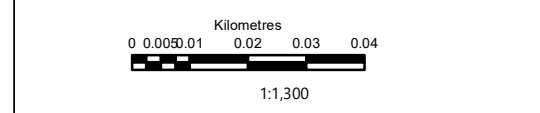
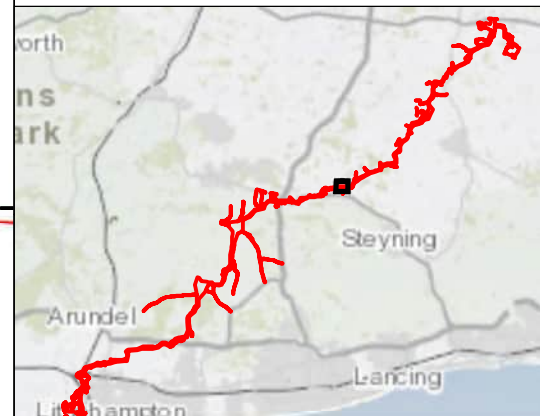
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Key

- Proposed DCO Order Limits
- Survey site 3

Year of deployment

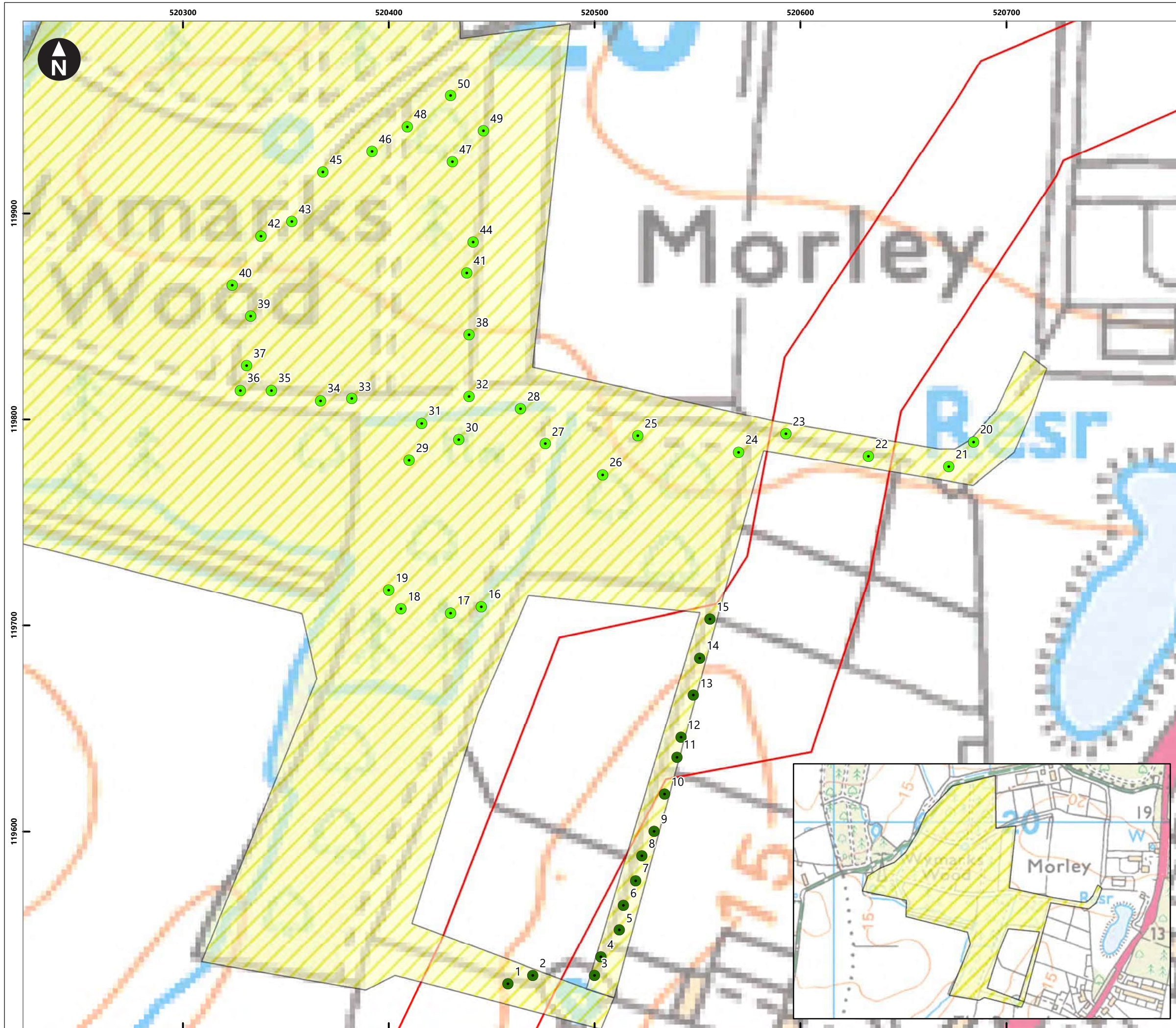
- 2021



Rampion Extension Development

Rampion 2 Offshore Wind Farm
 22.9.4f Dormouse nest tube locations
 Area 3

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|---|--------------------|---------------------|---------------------------|------------------|
| System Identifier: 42285-WSPE-ES-ON-FG-OO-8692 | | | | Version: 1.0 |
| Company: WSP | Drawn By: HADJE | Chk/Aprvd: SUTET | Drawn Date: 25/05/2023 | Status: FINAL |



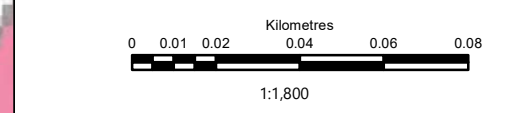
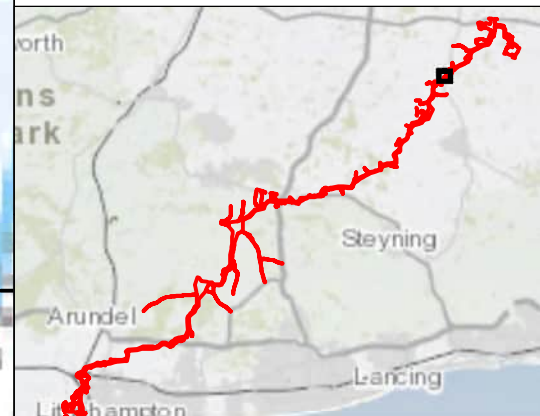
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Key

- Proposed DCO Order Limits
- Survey site 4

Month of deployment

- April 2021
- June 2021

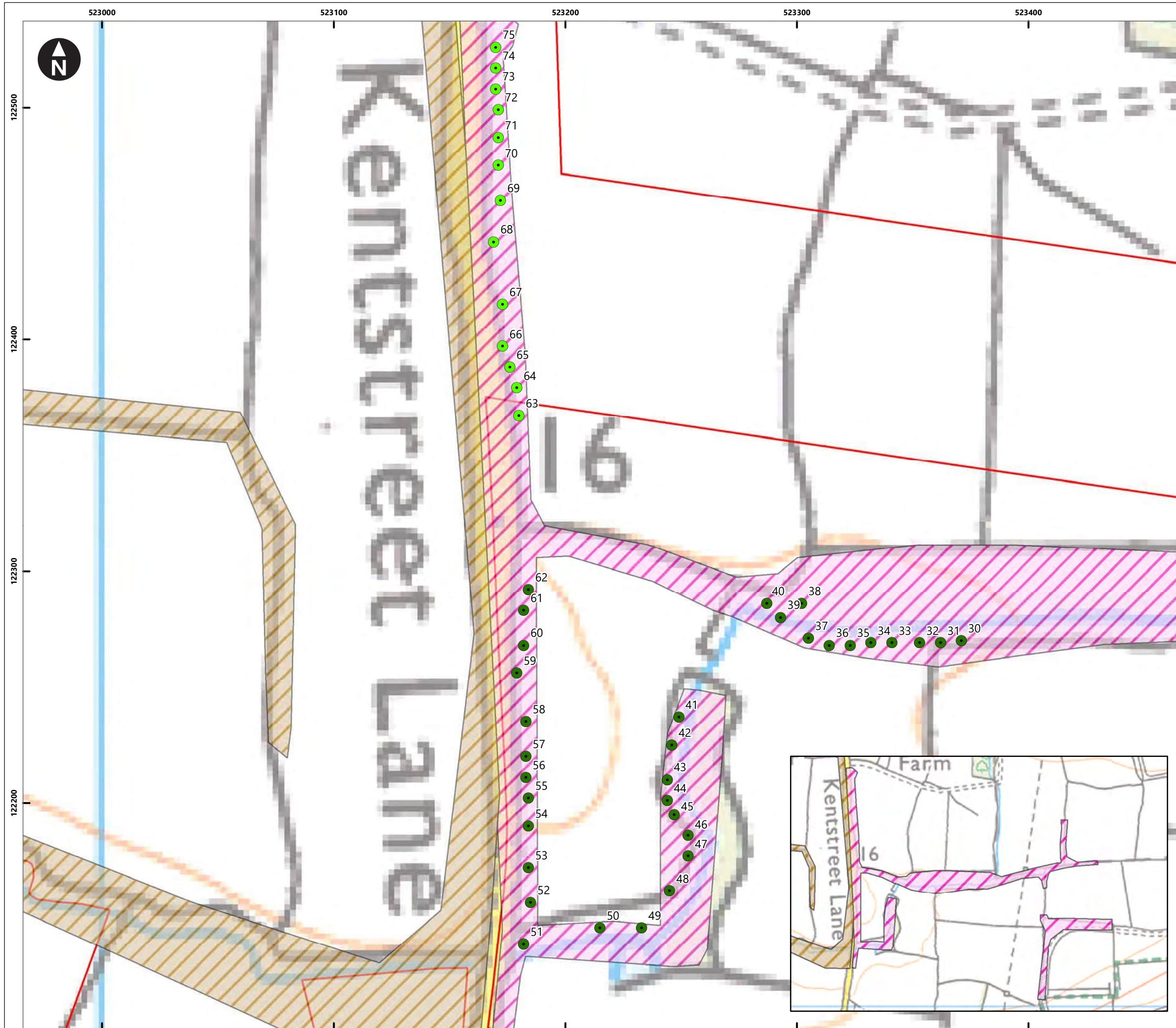


Rampion Extension Development

Rampion 2 Offshore Wind Farm
 22.9.4g Dormouse nest tube locations
 Area 4

System Identifier: 42285-WSPE-ES-ON-FG-OO-8692 Version: 1.0

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|--------------|-----------------|------------------|------------------------|---------------|
| Company: WSP | Drawn By: HADJE | Chk/Aprvd: SUTET | Drawn Date: 25/05/2023 | Status: FINAL |
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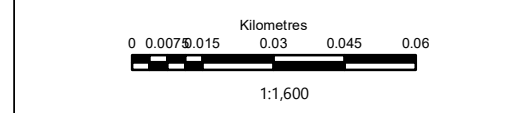
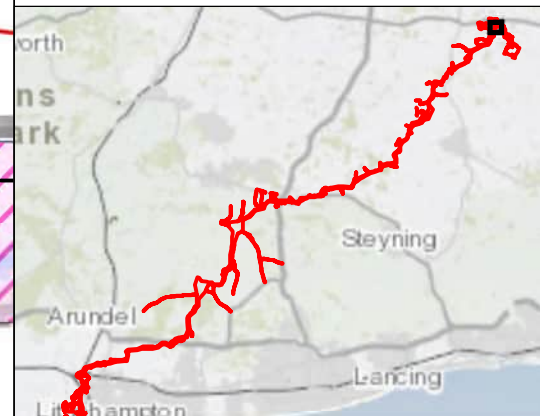
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Key

- Proposed DCO Order Limits
- Survey site 5
- Survey site 7

Month of deployment

- July 2021
- June 2021

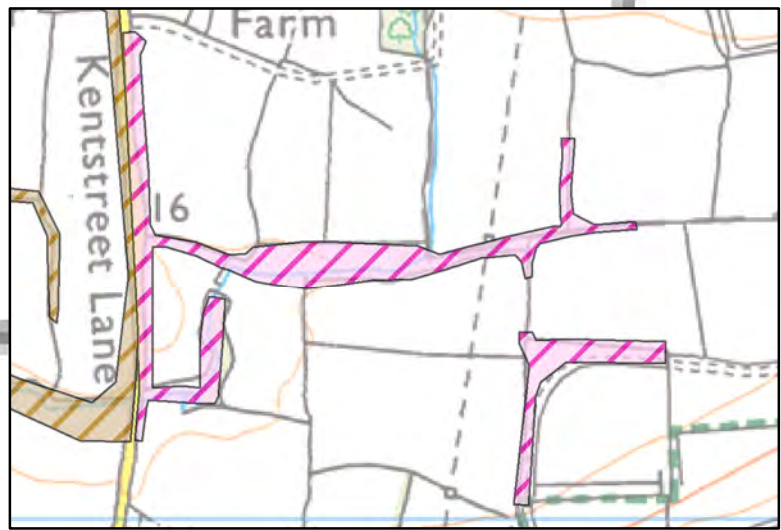
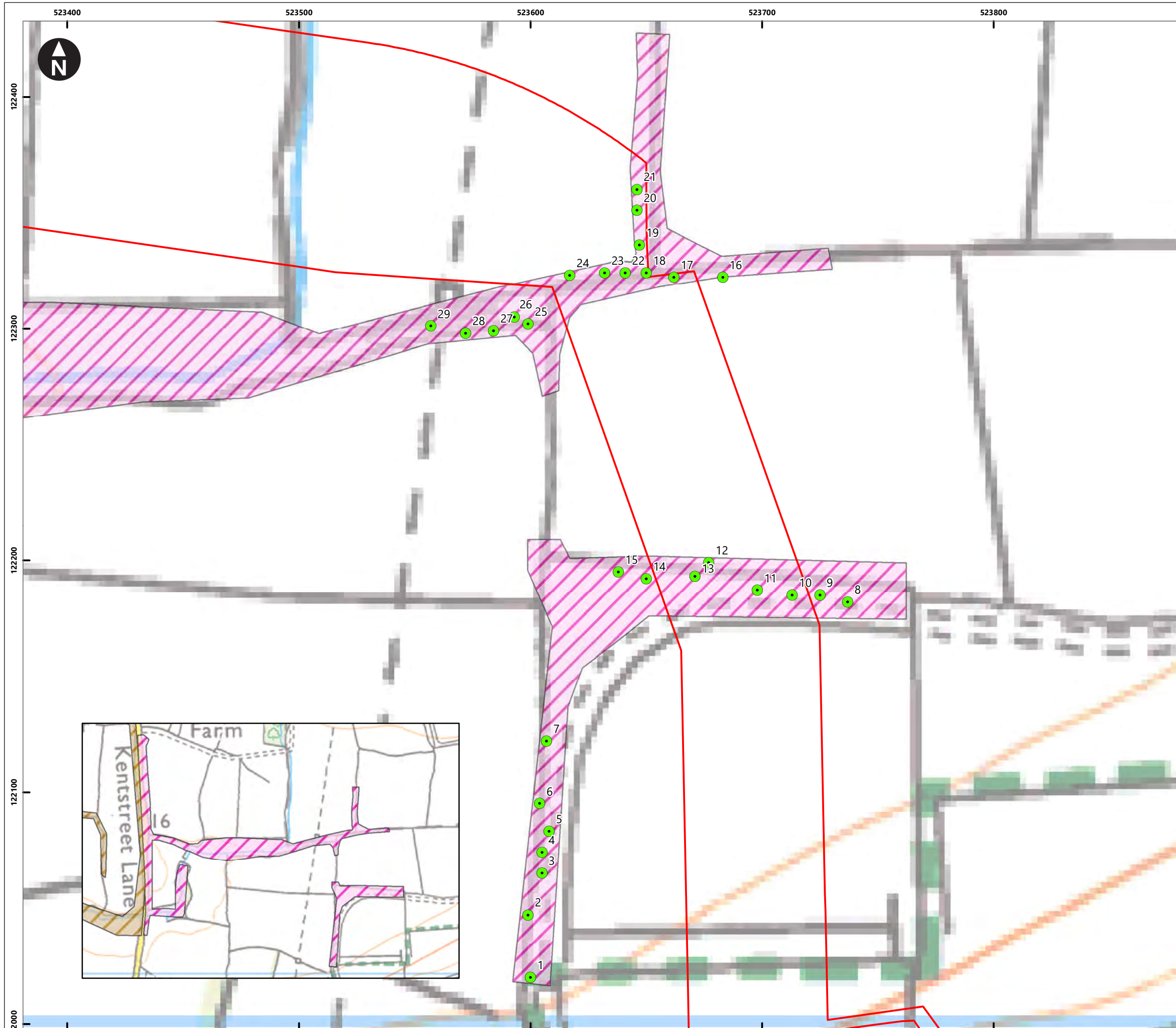


Rampion Extension Development

Rampion 2 Offshore Wind Farm
 22.9.4h Dormouse nest tube locations
 Area 5

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| System Identifier: 42285-WSPE-ES-ON-FG-OO-8692 | Version: 1.0 |
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| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET | Drawn Date: 25/05/2023 | Status: FINAL |
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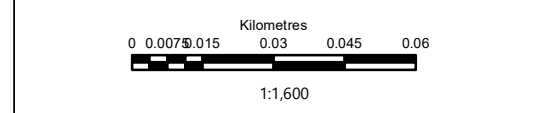
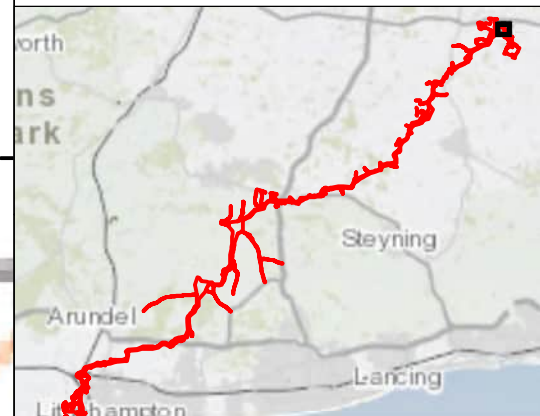
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Key

- Proposed DCO Order
- Survey site 5

Month of deployment

- June 2021

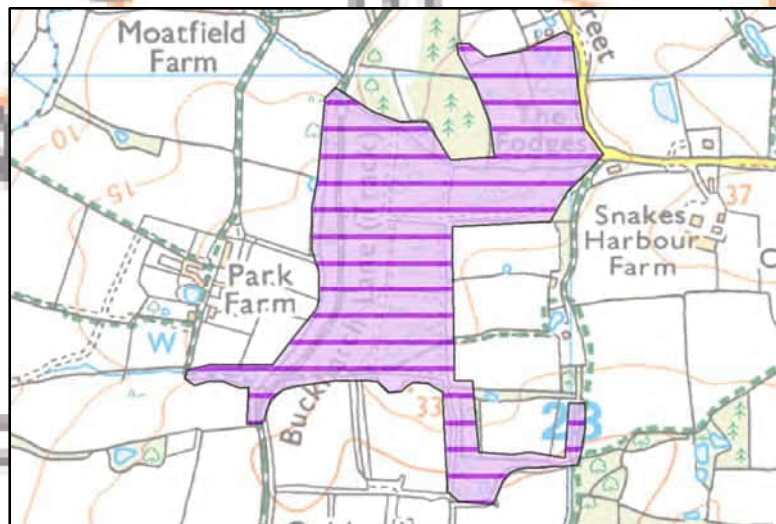
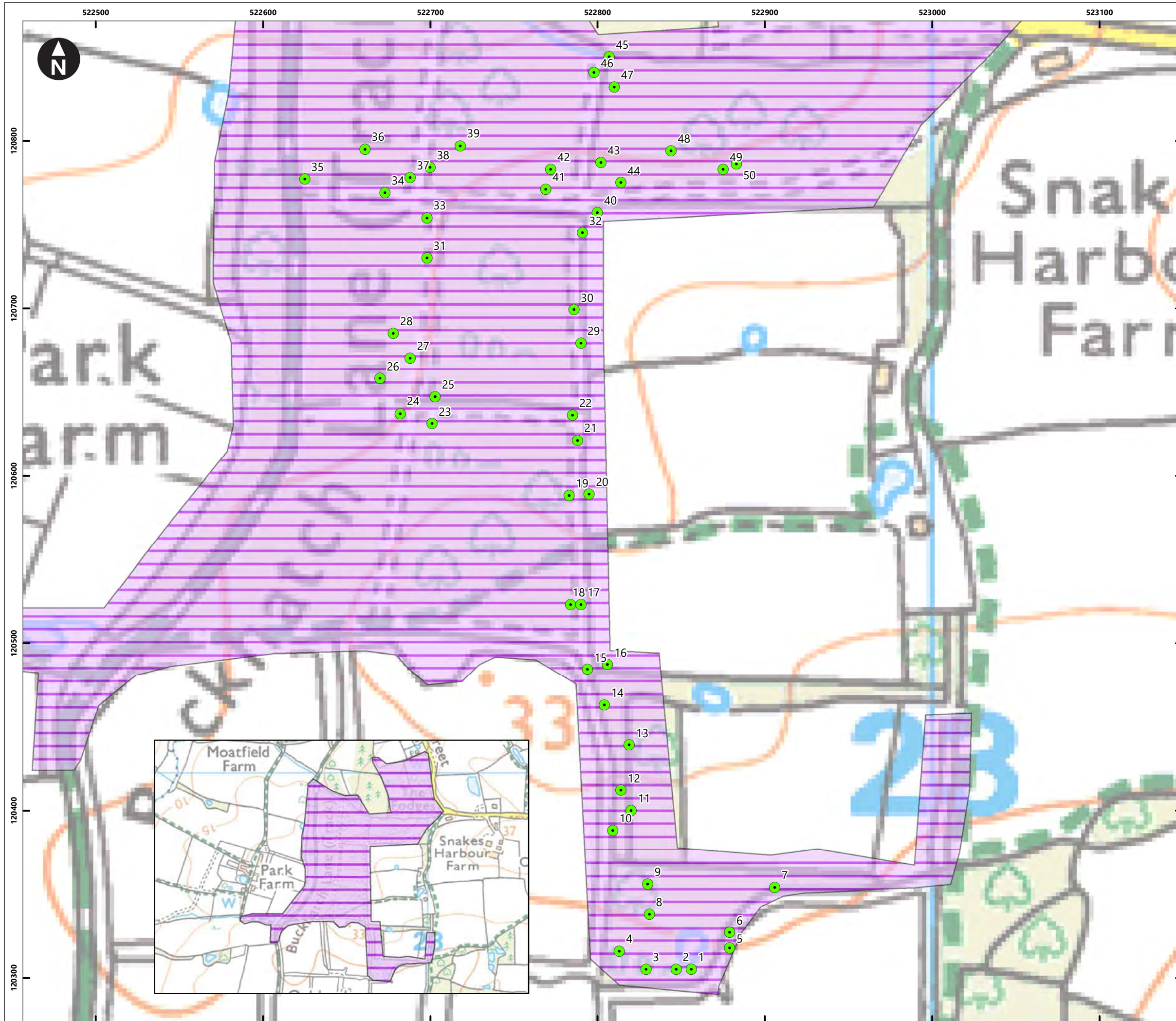


Rampion Extension Development

Rampion 2 Offshore Wind Farm
 22.9.4i Dormouse nest tube locations
 Area 5

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| System Identifier: 42285-WSPE-ES-ON-FG-OO-8692 | Version: 1.0 |
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|-----------------|--------------------|---------------------|---------------------------|------------------|
| Company: WSP | Drawn By: HADJE | Chk/Aprvd: SUTET | Drawn Date: 25/05/2023 | Status: FINAL |
|-----------------|--------------------|---------------------|---------------------------|------------------|



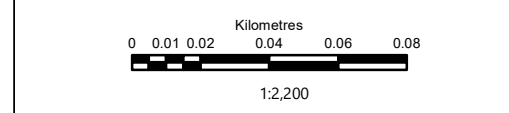
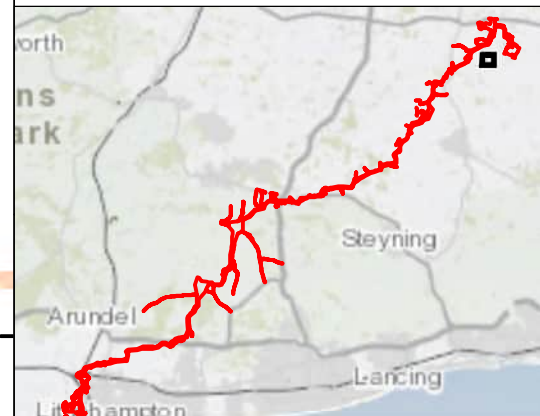
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Key

- Proposed DCO Order Limits
- Survey site 6

Year of deployment

- 2021

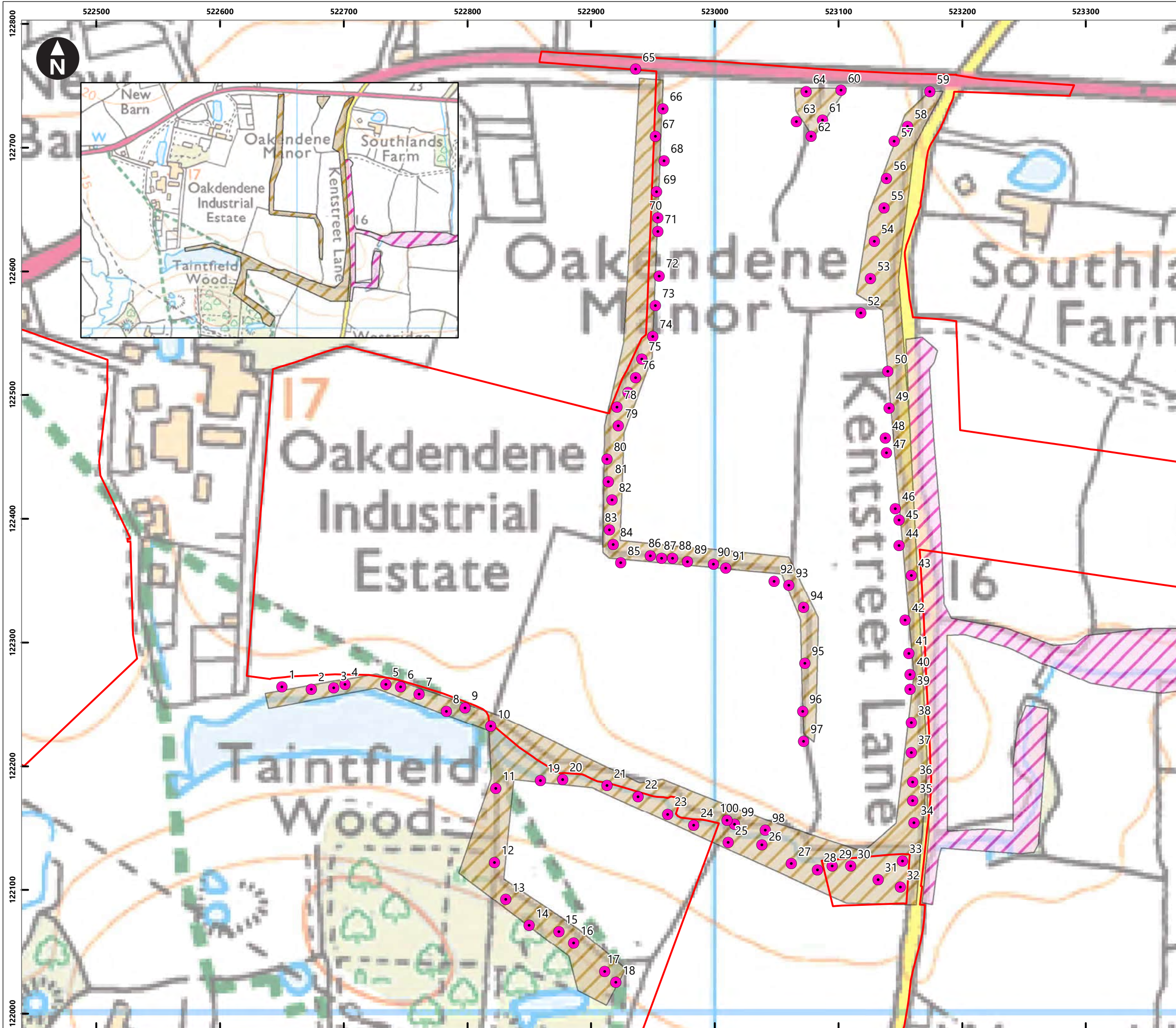


Rampion Extension Development

Rampion 2 Offshore Wind Farm
 22.9.4j Dormouse nest tube locations
 Area 6

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|---|-----------------|
| System Identifier: 42285-WSPE-ES-ON-FG-OO-8692 | Version: 1.0 |
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|-----------------|--------------------|---------------------|---------------------------|------------------|
| Company: WSP | Drawn By: HADJE | Chk/Aprvd: SUTET | Drawn Date: 25/05/2023 | Status: FINAL |
|-----------------|--------------------|---------------------|---------------------------|------------------|



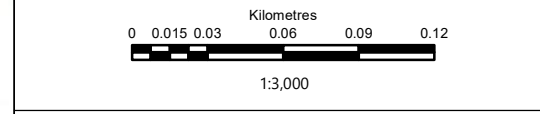
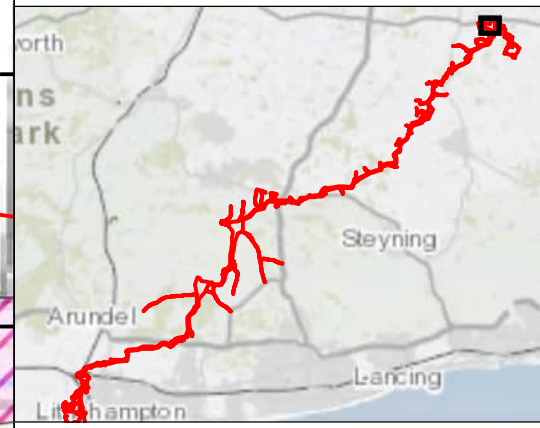
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Key

- Proposed DCO Order Limits
- Survey site 5
- Survey site 7

Year of deployment

- 2022

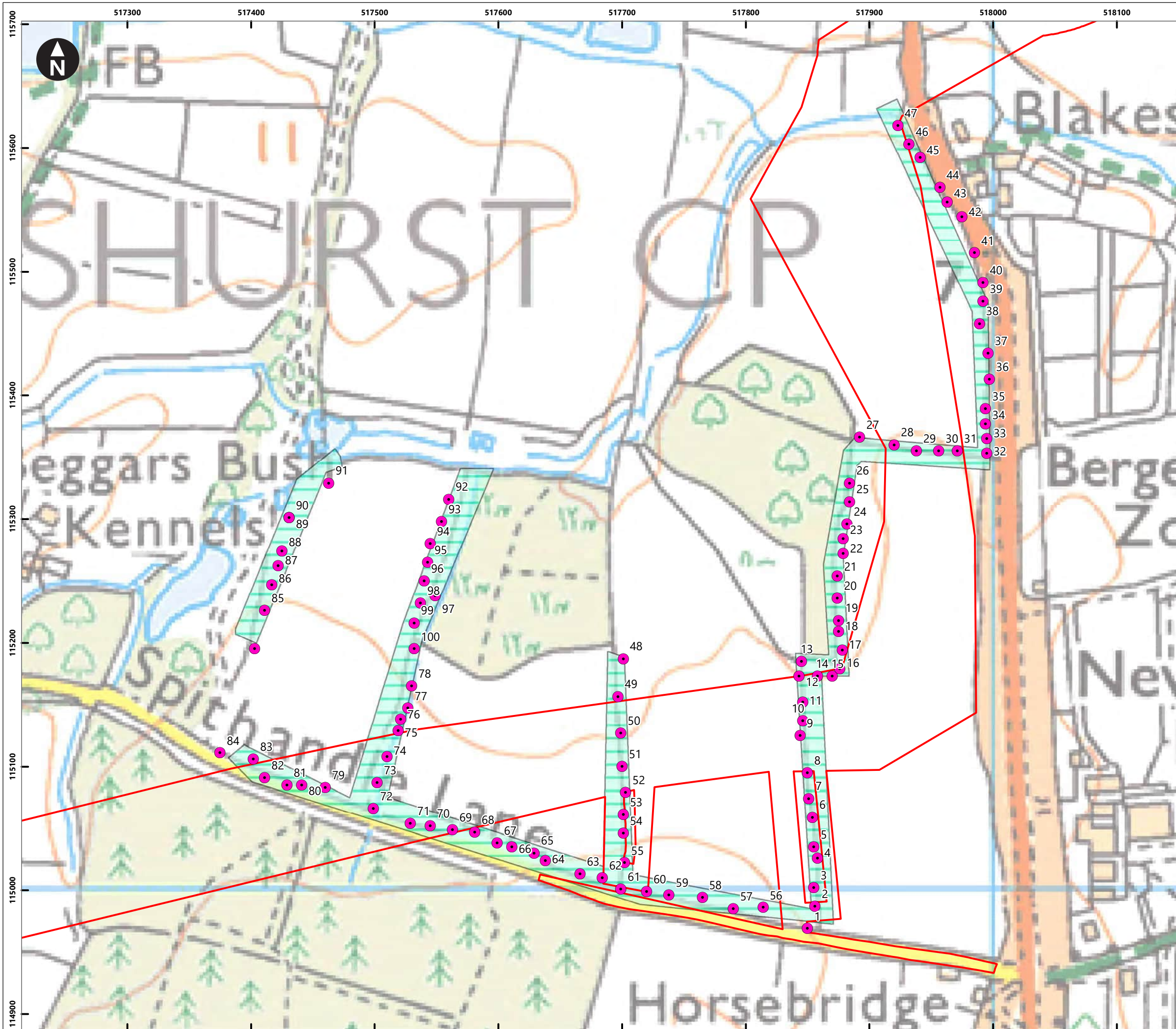


Rampion Extension Development

Rampion 2 Offshore Wind Farm
 22.9.4k Dormouse nest tube locations
 Area 7

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| System Identifier: 42285-WSPE-ES-ON-FG-OO-8692 | Version: 1.0 |
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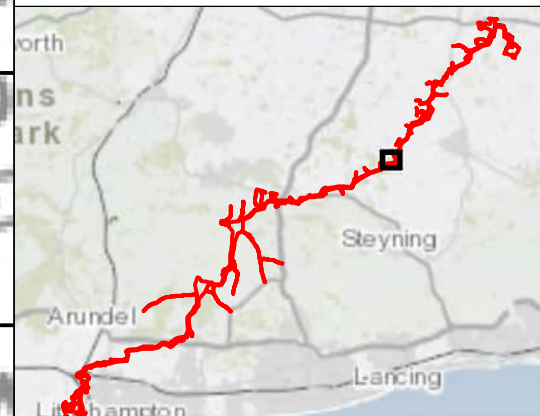
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Key

- Proposed DCO Order Limits
- Survey site 8

Year of deployment

- 2022

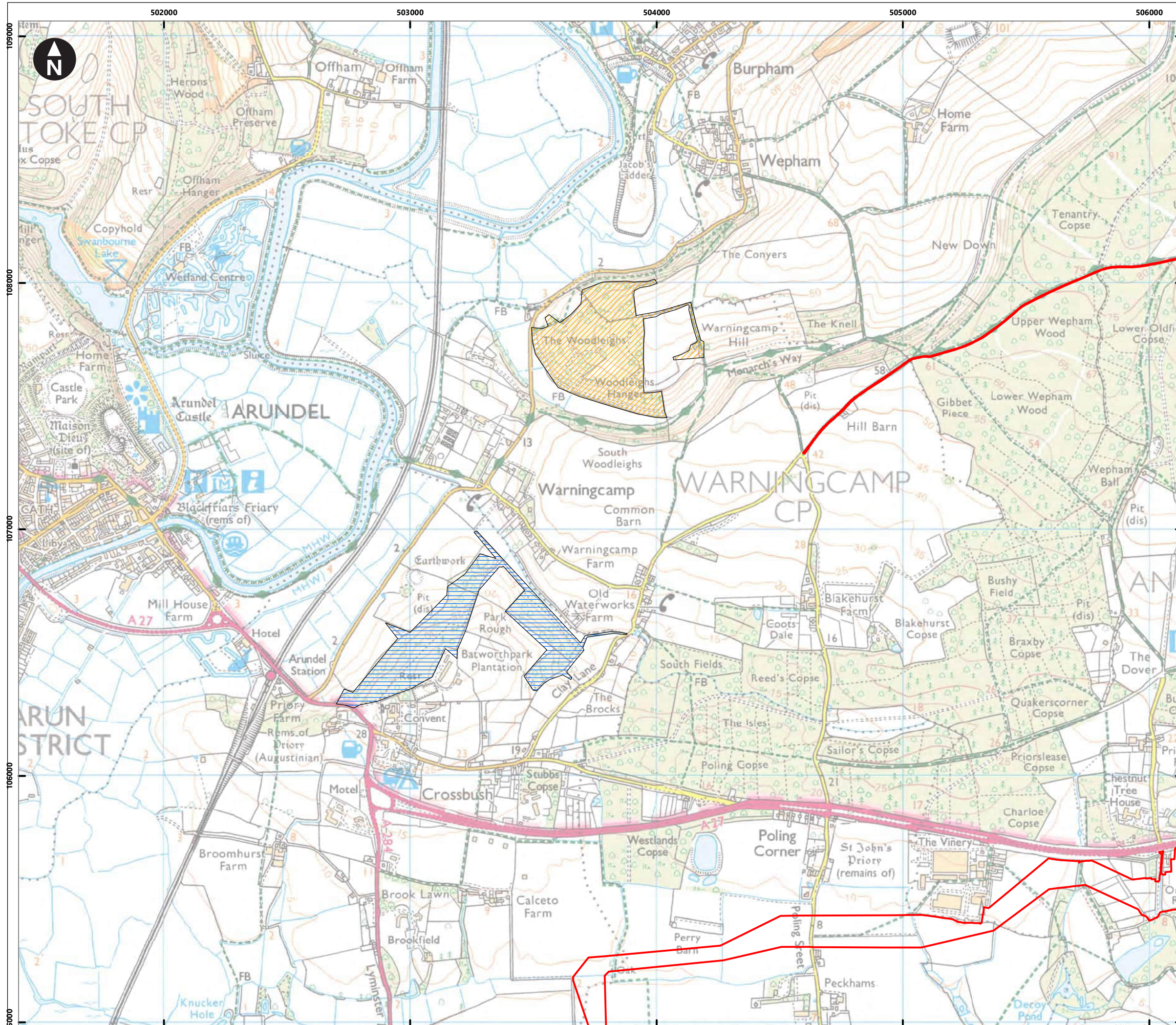


Rampion Extension Development

Rampion 2 Offshore Wind Farm
 22.9.4I Dormouse nest tube locations
 Area 8

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|---|-----------------|
| System Identifier: 42285-WSPE-ES-ON-FG-OO-8692 | Version: 1.0 |
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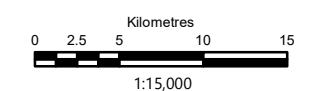
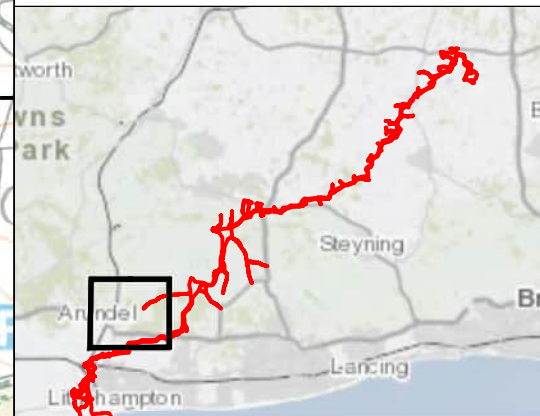
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| Company: WSP | Drawn By: HADJE | Chk/Aprvd: SUTET | Drawn Date: 25/05/2023 | Status: FINAL |
|-----------------|--------------------|---------------------|---------------------------|------------------|



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- Key**
- Proposed DCO Order Limits
 - 2021**
 - Survey site 1
 - Survey site 2
 - Survey site 3
 - Additional survey site 3
 - Survey site 4
 - Additional survey site 4
 - Survey site 5
 - Additional survey site 5
 - Survey site 6
 - 2022**
 - Survey site 7
 - Survey site 8



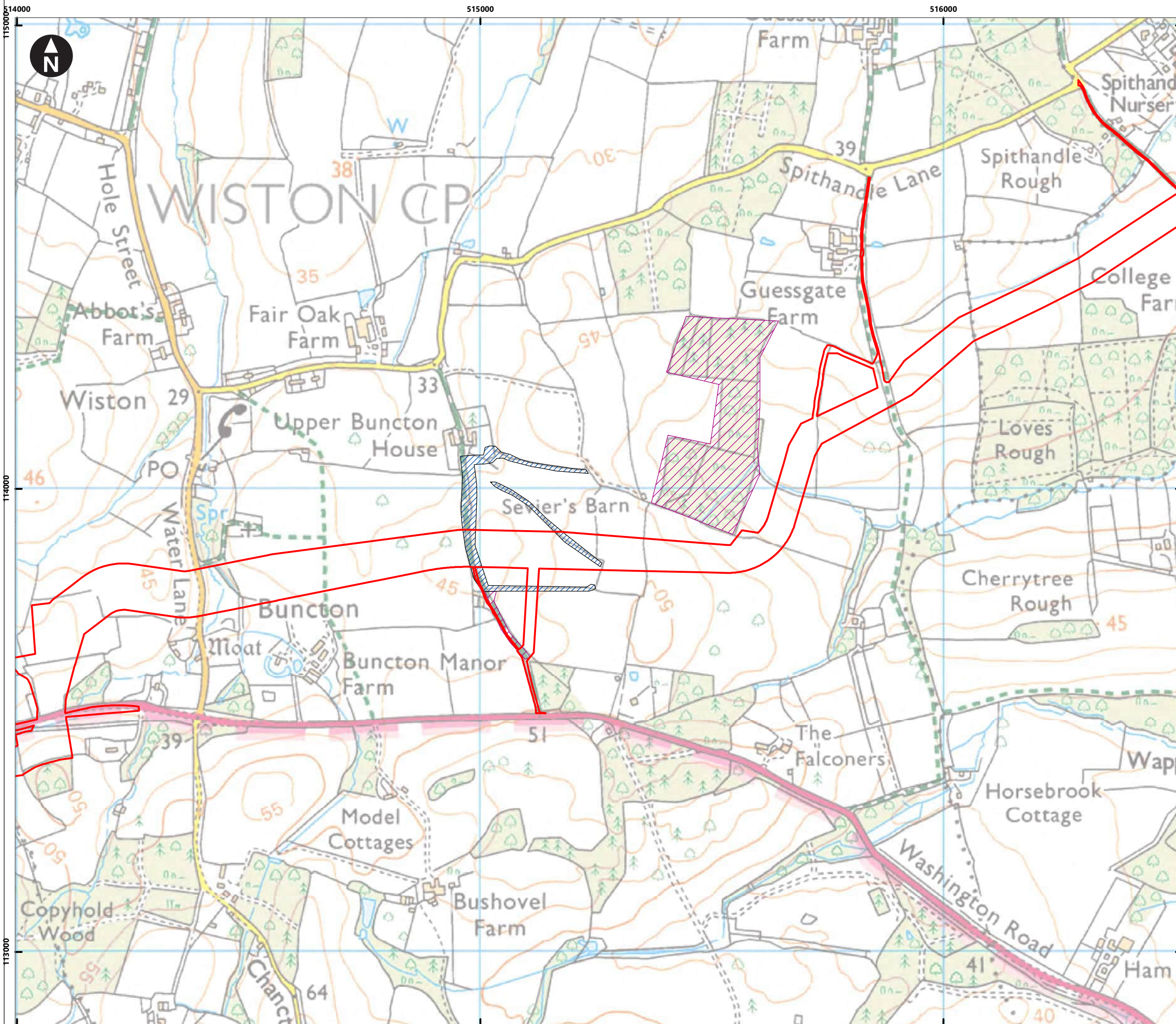
Rampion Extension Development



Rampion 2 Offshore Wind Farm
22.9.5 Hazelnut search locations

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| System Identifier: | Version: |
| 42285-WSPE-ES-ON-FG-OO-5238 | 1.0 |

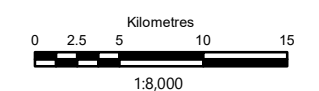
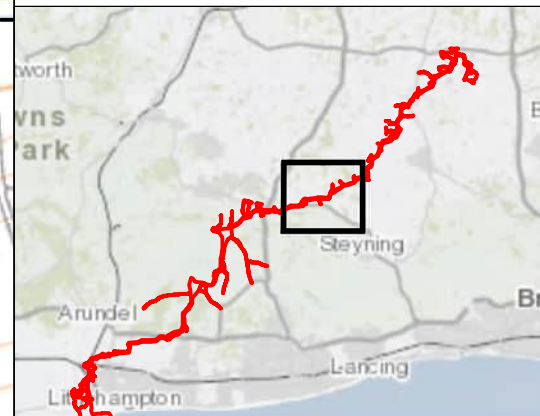
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| Company: | Drawn By: | Chk/Prvrd: | Drawn Date: | Status: |
| WSP | HADJE | SUTET | 25/05/2023 | FINAL |



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- Key**
- Proposed DCO Order Limits
 - 2021**
 - Survey site 1
 - Survey site 2
 - Survey site 3
 - Additional survey site 3
 - Survey site 4
 - Additional survey site 4
 - Survey site 5
 - Additional survey site 5
 - Survey site 6
 - 2022**
 - Survey site 7
 - Survey site 8

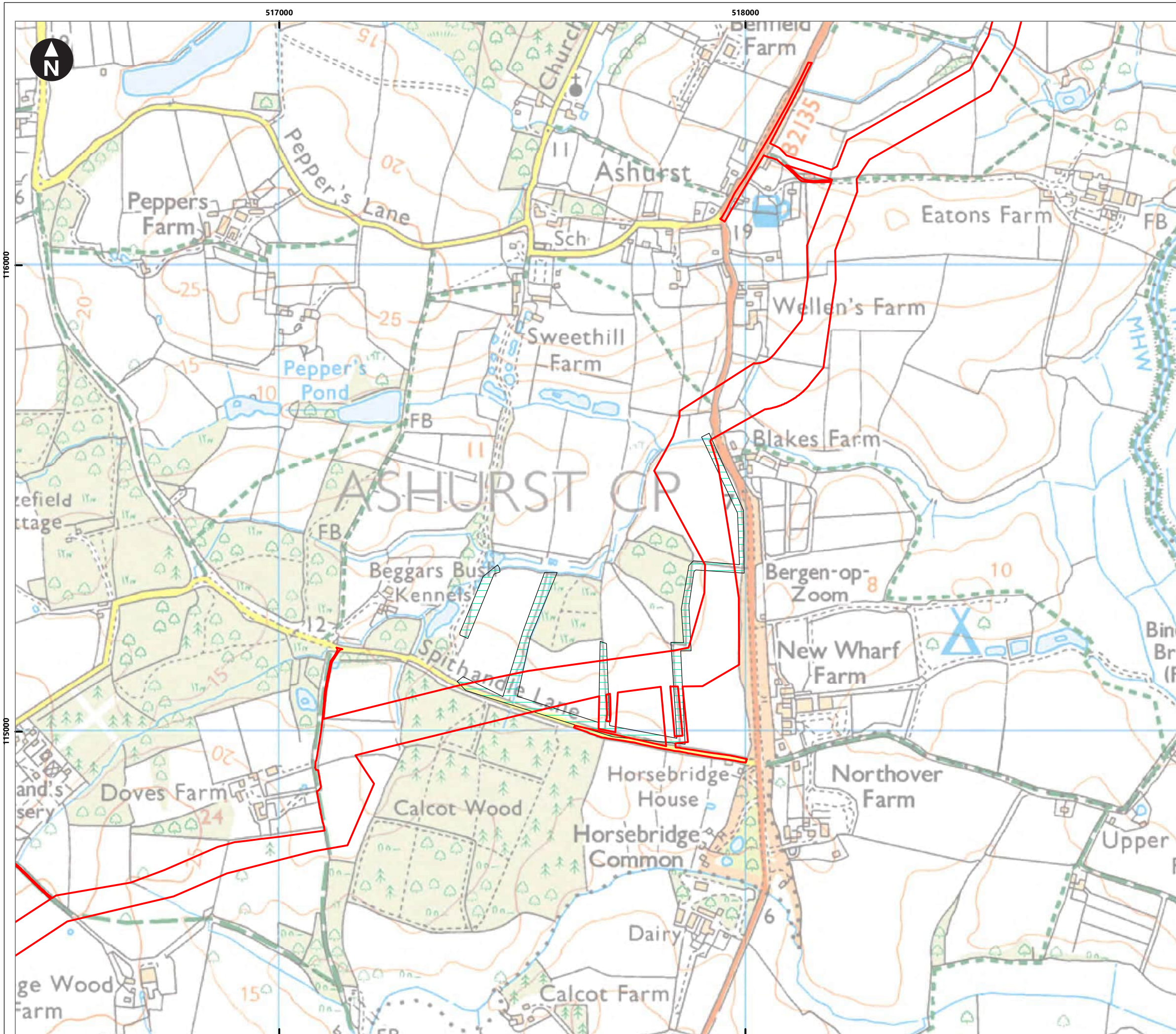


Rampion Extension Development


Rampion 2 Offshore Wind Farm
 22.9.5 Hazelnut search locations

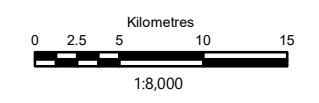
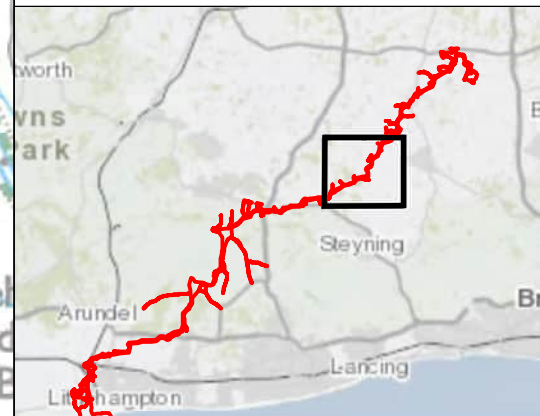
System Identifier: 42285-WSPE-ES-ON-FG-OO-5238
 Version: 1.0

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| Company: WSP | Drawn By: HADJE | Chk/Aprvd: SUTET | Drawn Date: 25/05/2023 | Status: FINAL |
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- Key**
- Proposed DCO Order Limits
 - 2021**
 - Survey site 1
 - Survey site 2
 - Survey site 3
 - Additional survey site 3
 - Survey site 4
 - Additional survey site 4
 - Survey site 5
 - Additional survey site 5
 - Survey site 6
 - 2022**
 - Survey site 7
 - Survey site 8



Rampion Extension Development

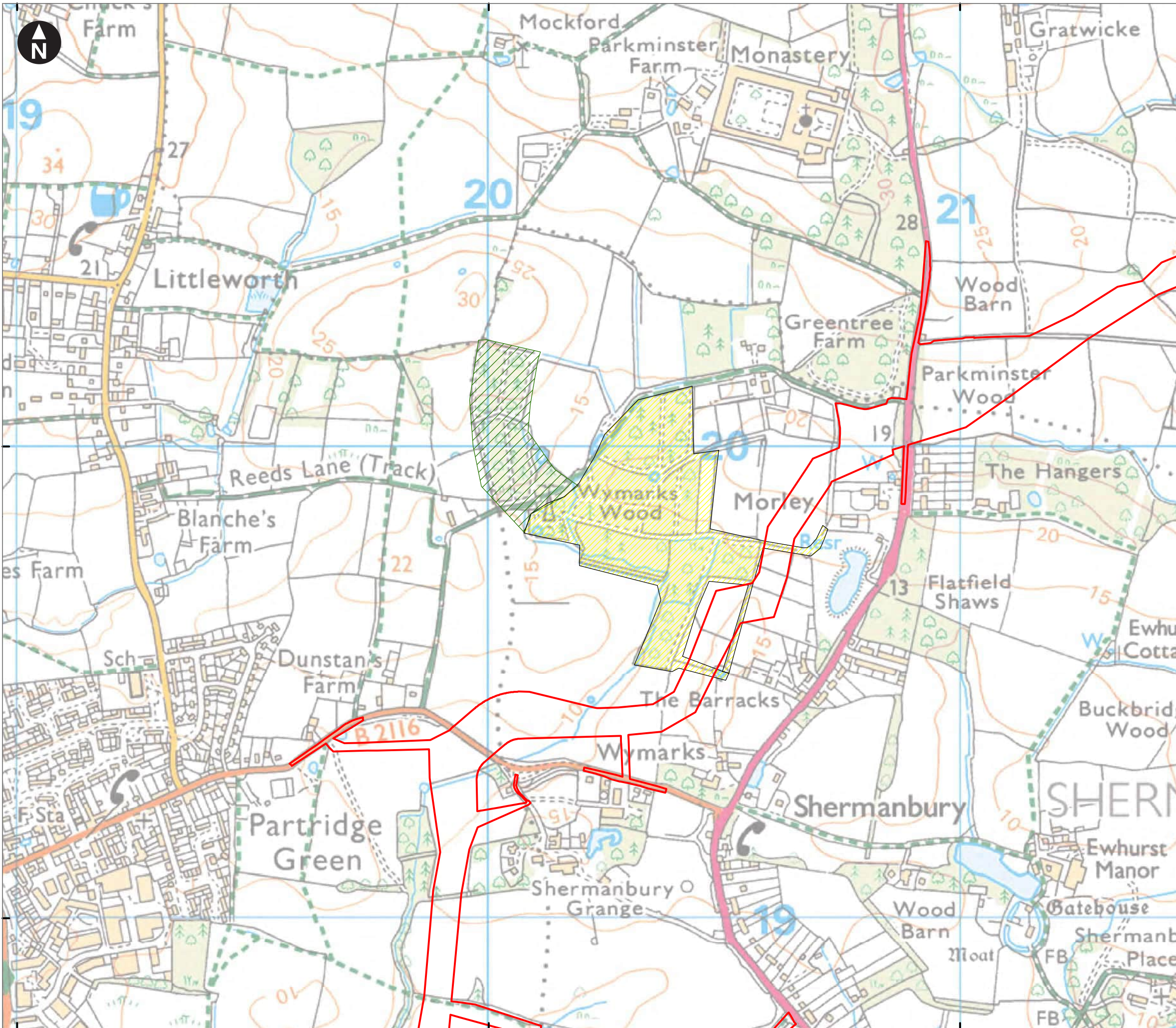

Rampion 2 Offshore Wind Farm
 22.9.5 Hazelnut search locations

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| System Identifier: 42285-WSPE-ES-ON-FG-OO-5238 | | | | Version: 1.0 |
| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET | Drawn Date: 25/05/2023 | Status: FINAL |

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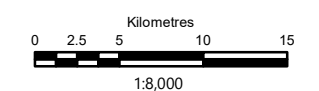
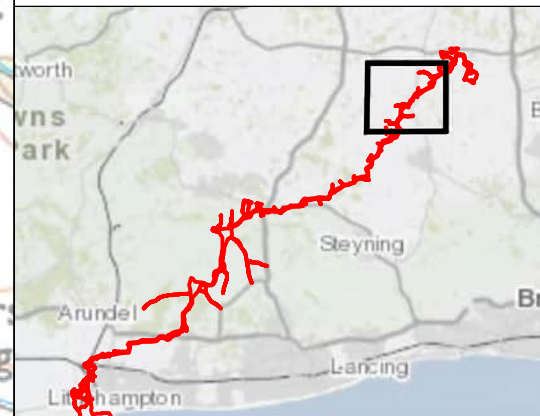
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- Key**
- Proposed DCO Order Limits
 - 2021**
 - Survey site 1
 - Survey site 2
 - Survey site 3
 - Additional survey site 3
 - Survey site 4
 - Additional survey site 4
 - Survey site 5
 - Additional survey site 5
 - Survey site 6
 - 2022**
 - Survey site 7
 - Survey site 8

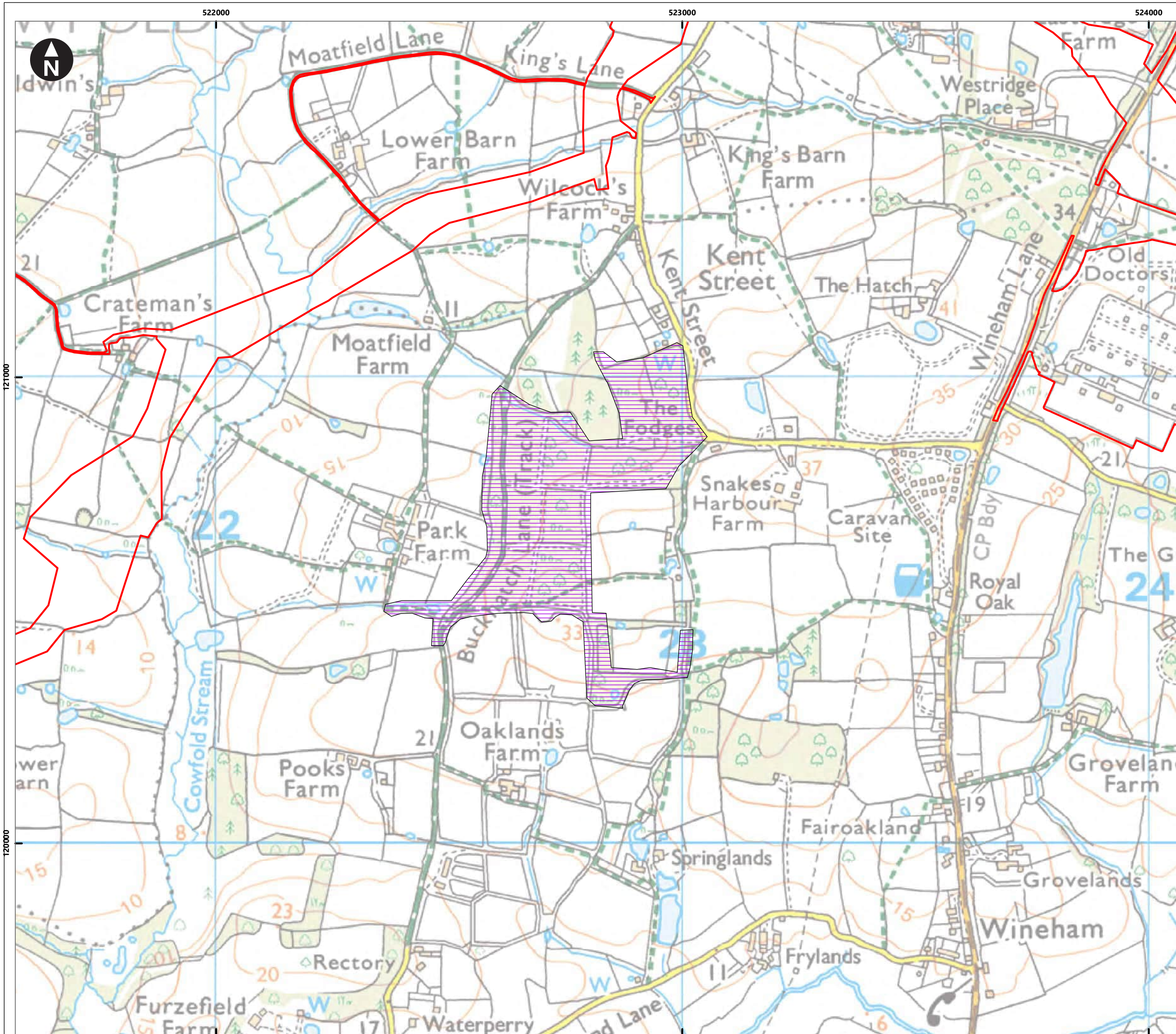


Rampion Extension Development

Rampion 2 Offshore Wind Farm
22.9.5 Hazelnut search locations

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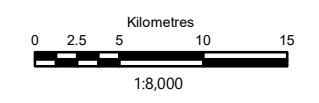
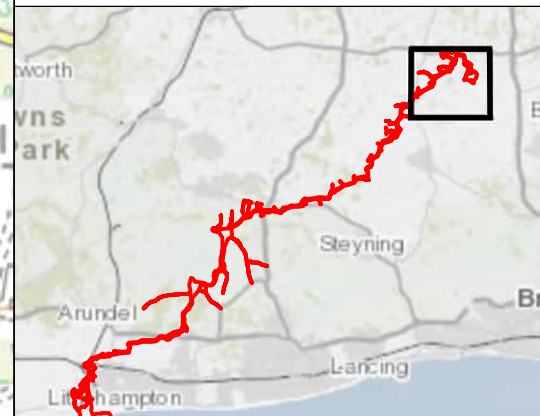
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| Company: | Drawn By: | Chk/Prvd: | Drawn Date: | Status: |
| WSP | HADJE | SUTET | 25/05/2023 | FINAL |



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Key

- Proposed DCO Order Limits
- 2021**
- Survey site 1
- Survey site 2
- Survey site 3
- Additional survey site 3
- Survey site 4
- Additional survey site 4
- Survey site 5
- Additional survey site 5
- Survey site 6
- 2022**
- Survey site 7
- Survey site 8



Rampion Extension Development

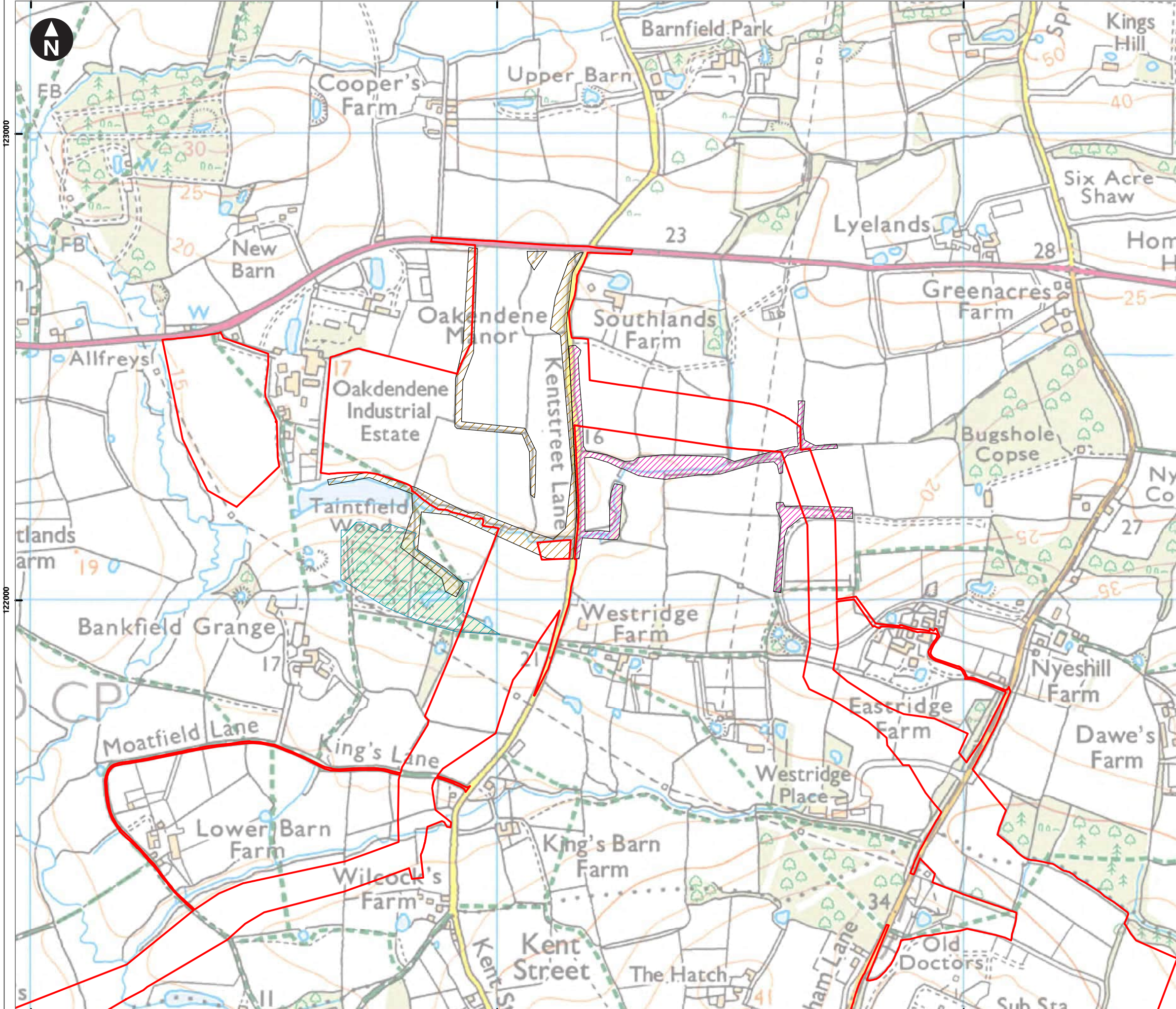
Rampion 2 Offshore Wind Farm
 22.9.5 Hazelnut search locations

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| System Identifier: 42285-WSPE-ES-ON-FG-OO-5238 | | | | Version: 1.0 |
| Company: WSP | Drawn By: HADJE | Chk/Aprvd: SUTET | Drawn Date: 25/05/2023 | Status: FINAL |

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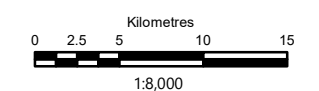
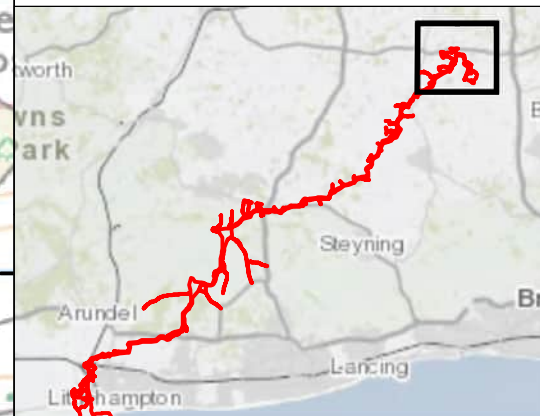
524000



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- Key**
- Proposed DCO Order Limits
 - 2021**
 - Survey site 1
 - Survey site 2
 - Survey site 3
 - Additional survey site 3
 - Survey site 4
 - Additional survey site 4
 - Survey site 5
 - Additional survey site 5
 - Survey site 6
 - 2022**
 - Survey site 7
 - Survey site 8



Rampion Extension Development



Rampion 2 Offshore Wind Farm
22.9.5 Hazelnut search locations

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| System Identifier: 42285-WSPE-ES-ON-FG-OO-5238 | Version: 1.0 |
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| Company: WSP | Drawn By: HADJE | Chk/Prvrd: SUTET | Drawn Date: 25/05/2023 | Status: FINAL |
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Annex B

Full Survey Results

Table B-1 below lists all observations recorded during the dormouse surveys, October 2020 to October 2022 inclusive.

Table B-1 Dormouse survey results and observations recorded October to June 2022 inclusive

| Month | Survey Site | Tube reference | Observations |
|-------------|-------------|----------------|--|
| 2020 | | | |
| October | N/A | | |
| November | 1 | 16 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other. Lots of half eaten rosehips present as well. Some green leaves present but lacking structure and presence of feeding signs within nest so unlikely to be dormouse. |
| 2021 | | | |
| April | N/A | | |
| May | 6 | 50 | Active bird nest – small passerine species |
| | 6 | 30 | Active bird nest – small passerine species |
| | 6 | 34 | Active bird nest – small passerine species |
| June | n/a | | |
| July | 6 | 30 | Active bird nest – small passerine species |
| August | 3 | 8 | x1 wood mouse with nest |
| | 3 | 4 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| | 3 | 2 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |

| Month | Survey Site | Tube reference | Observations |
|------------------|-------------|----------------|--|
| | 3 | 1 | x1 wood mouse with nest |
| | 3 | 53 | x1 wood mouse with nest |
| September | 1 | 15a | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| | 1 | 10a | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| | 1 | 13a | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| | 1 | 5a | Nut cache, hazelnuts and blackberries |
| | 1 | 3a | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| | 1 | 1a | Food cache of blackberries |
| | 1 | 66 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| | 2 | 57 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| | 2 | 93 | x4 wood mouse in nest |
| | 3 | 21 | x1 wood mouse, leaves and food remains |
| | 3 | 9 | green leaves, wood mouse feeding remains |
| | 3 | 4 | green leaves, wood mouse feeding remains |
| | 3 | 2 | green leaves, wood mouse feeding remains |
| | 3 | 32 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| | 3 | 35 | x1 wood mouse in nest |

| Month | Survey Site | Tube reference | Observations |
|-------|-------------|----------------|--|
| 3 | | 36 | x1 wood mouse in nest |
| 3 | | 38 | x4 yellow-necked mice in nest |
| 3 | | 39 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other and feeding remains |
| 3 | | 42 | x1 wood mouse in nest of green leaves |
| 3 | | 45 | Bird droppings (emptied) |
| 3 | | 48 | Green leaves and wood mouse feeding remains |
| 3 | | 50 | x1 wood mouse in nest of green leaves |
| 3 | | 53 | x1 wood mouse with nest of green leaves |
| 3 | | 67 | Bird droppings present |
| 3 | | 59 | x1 wood mouse in nest |
| 3 | | 71 | Bird droppings present |
| 4 | | 8 | x1 wood mouse in nest of green leaves |
| 4 | | 7 | Feeding remains present, sloe berries |
| 5 | | 75 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| 5 | | 58 | Food cache comprised of sloe berries |
| 5 | | 57 | Food cache comprised of sloe berries |
| 5 | | 56 | Food cache comprised of sloe berries |
| 5 | | 26 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| 5 | | 18 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| 5 | | 11 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |

| Month | Survey Site | Tube reference | Observations |
|----------------|-------------|----------------|--|
| | 5 | 10 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| October | 2 | 88 | Old small mammal nest comprised of rotting leaves |
| | 3 | 9 | x1 wood mouse in nest |
| | 3 | 7 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| | 3 | 6 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| | 3 | 5 | Feeding remains: rose hips |
| | 3 | 3 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| | 3 | 2 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| | 3 | 1 | Feeding remains: rose hips |
| | 3 | 36 | Pile of brown leaves, unlikely to be small mammal nest |
| | 3 | 38 | x1 yellow-necked mouse |
| | 3 | 39 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other and feeding remains |
| | 3 | 51 | Brown leaves (emptied) |
| | 3 | 52 | Feeding remains (emptied) |
| | 3 | 54 | x1 yellow necked mouse |
| | 3 | 64 | x1 yellow necked mouse |
| | 3 | 65 | Food cache: blackberries |
| | 3 | 68 | x1 yellow-necked mouse |

| Month | Survey Site | Tube reference | Observations |
|-----------------|-------------|----------------|--|
| | 3 | 69 | x1 yellow-necked mouse |
| | 3 | 71 | x1 yellow-necked mouse |
| | 4 | 14 | Food cache, hawthorn pips |
| | 4 | 8 | Food cache, sloe berry pips |
| | 4 | 7 | Food cache, sloe berry pips |
| | 4 | 3 | Food cache, tube full of detritus/rotting fruit |
| | 4 | 2 | Food cache, full of blackberries and sloes |
| | 5 | 68 | Food cache of seeds |
| | 5 | 69 | Old dried leaves, no structure |
| | 5 | 73 | Food cache of seeds |
| | 5 | 20 | Food cache of seeds |
| | 5 | 23 | Food cache of seeds and collection of brown leaves |
| | 5 | 8 | Food cache of seeds and collection of brown leaves |
| | 5 | 12 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| | 5 | 11 | Old, loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| | 5 | 58 | Small mammal nest of green leaves with very loose structure. |
| | 6 | 50 | Containing moss (emptied) |
| November | 1 | 88 | Hazelnut in tube |
| | 3 | 12 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| | 3 | 2 | x1 wood mouse in green leaves |

| Month | Survey Site | Tube reference | Observations |
|--------------|-------------|----------------|--|
| 3 | 3 | 36 | x2 yellow necked mouse |
| 3 | 3 | 37 | Hawthorn leaves, no structure |
| 3 | 3 | 39 | Very loose, unstructured small mammal nest comprising just several leaves layered flat atop each other |
| 4 | 4 | 14 | Feeding remains – rotting berries |
| 4 | 4 | 12 | Feeding remains – rotting berries |
| 4 | 4 | 11 | Feeding remains – rotting berries |
| 4 | 4 | 10 | Feeding remains – rotting berries |
| 4 | 4 | 9 | Feeding remains – rotting berries |
| 4 | 4 | 8 | Feeding remains – rotting berries |
| 4 | 4 | 7 | Feeding remains – rotting berries |
| 4 | 4 | 6 | Feeding remains – rotting berries |
| 4 | 4 | 5 | Feeding remains – rotting berries |
| 4 | 4 | 4 | Feeding remains – rotting berries |
| 4 | 4 | 3 | Feeding remains – rotting berries |
| 4 | 4 | 2 | Food cache - full of blackberries and sloes |
| 4 | 4 | 1 | Feeding remains – rotting berries |
| 5 | 5 | 44 | Very loose, partially constructed nest with no structure comprising leaves layered in a loose mass |
| 6 | 6 | 4 | A few brown leaves |
| 6 | 6 | 21 | Small mammal nest of green and brown leaves, with no structure |
| 2022 | | | |
| April | 8 | N/A | Land access denied |
| May | 8 | 28 | x1 wood mouse in nest of green leaves |
| June | 8 | N/A | Land access denied |

| Month | Survey Site | Tube reference | Observations |
|-----------|-------------|----------------|--|
| July | 8 | N/A | Land access denied |
| August | 8 | 28 | Wood mouse nest |
| | | 57 | Bird (tit) nest |
| September | 8 | 28 | Apodemus sp. Nest (unoccupied). Nest of leaves but no structure. |
| | | 31 | Acorn cache, Apodemus sp./Microtus sp. Feeding marks, definitely not dormouse |
| October | 7 | 59 | Woven nest of grass and dried leaves with internal chamber |
| | 7 | 70 | Juvenile dormouse flushed from box. Woven nest of grass and dried leaves with internal chamber |
| | 7 | 75 | Woven nest of grass and dried leaves with internal chamber |

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Annex C

Legislation

The Wildlife and Countryside Act 1981 (as amended)

The hazel dormouse is listed in Schedule 5 of The Wildlife and Countryside Act 1981 (as amended). The Act transposes into UK law the Convention on the Conservation of European Wildlife and Natural Habitats (commonly referred to as the 'Bern Convention'). Dormice are listed on Schedule 5 of the Act in respect of Section 9, which makes it an offence, inter alia, to:

- intentionally or recklessly kill, injure, or take (handle) a dormouse;
- intentionally or recklessly damage, destroy or obstruct access to any structure or place that a dormouse uses for shelter or protection; or
- intentionally or recklessly disturb a dormouse while it is occupying a structure or place that it uses for shelter or protection.

Regulation 41 of The Conservation of Habitats and Species Regulations 2010

The hazel dormouse receives further protection under Regulation 41 of The Conservation of Habitats and Species Regulations 2010, which make provision for the purpose of implementing the European Union Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora 1992. Here, they are listed on Annex IV, which means that member states are required to put in place a system of strict protection as outlined in Article 12, and this is done through inclusion on Schedule 2 of the Regulations, which makes it an offence, inter alia, to:

- deliberately capture, injure or kill any dormouse;
- deliberately disturb a dormouse, in particular any disturbance which is likely:
 - (a) to impair their ability
 - ▶ (i) to survive, to breed or reproduce, or to rear or nurture their young, or
 - ▶ (ii) to hibernate or migrate
 - (b) to affect significantly the local distribution or abundance of dormouse; or
- damage or destroy a breeding site or resting place of a dormouse.

Annex D

Scientific species names

Table D-1 below lists all species mentioned within this Appendix, note some species mentioned below were not recorded during hazel dormouse surveys.

Table D-1 Scientific names of species mentioned in this report

| Common name | Scientific name |
|---------------------|---------------------------------|
| Ash | <i>Fraxinus excelsior</i> |
| Blackthorn | <i>Prunus spinosa</i> |
| Bracken | <i>Pteridium sp.</i> |
| Bramble | <i>Rubus sp.</i> |
| Field maple | <i>Acer campestre</i> |
| Hawthorn | <i>Crataegus sp.</i> |
| Hazel | <i>Corylus avellana</i> |
| Hazel dormouse | <i>Muscardinus avellanarius</i> |
| Honeysuckle | <i>Lonicera periclymenum</i> |
| Oak | <i>Quercus sp.</i> |
| Silver birch | <i>Betula pendula</i> |
| White poplar | <i>Populus alba</i> |
| Wood mouse | <i>Apodemus sylvaticus</i> |
| Yellow-necked mouse | <i>Apodemus flavicollis</i> |



4.22.10



Volume 4, Appendix 22.10

Invertebrate Survey Report



Contents

| | | |
|-----------|--|-----------|
| 1. | Introduction | 3 |
| 1.1 | Background | 3 |
| 1.2 | Survey site selection | 3 |
| 1.3 | Structure of this appendix | 3 |
| 2. | Methods | 4 |
| 2.2 | Sweep netting | 4 |
| 2.3 | Spot sampling | 4 |
| 2.4 | Grubbing | 4 |
| 2.5 | Pitfall traps | 4 |
| 2.6 | Survey details | 4 |
| 3. | Results | 5 |
| 3.1 | Warningcamp Hill and New Down LWS | 5 |
| | Results analysis | 10 |
| | Warningcamp Hill and New Down LWS discussion | 14 |
| | Specific assemblage tables | 14 |
| 3.2 | Sullington Hill LWS | 16 |
| | Results analysis | 20 |
| 4. | Summary | 26 |
| 4.1 | Warningcamp Hill and New Down LWS Assessment Summary | 26 |
| 4.2 | Sullington Hill LWS Assessment Summary | 26 |
| 5. | References | 28 |

List of Tables

| | | |
|-----------|---|----|
| Table 3-1 | Summary of species breakdown recorded at Warningcamp Hill and New Down LWS | 5 |
| Table 3-2 | Species of importance recorded at Warningcamp Hill and New Down LWS during invertebrate surveys | 5 |
| Table 3-3 | Site resource-usage table (taken from Webb <i>et al.</i> , 2017) | 10 |
| Table 3-4 | Site SAT table (taken from Webb <i>et al.</i> , 2017) | 12 |
| Table 3-5 | Summary of species breakdown recorded at Sullington Hill LWS | 16 |
| Table 3-6 | Species of importance recorded at Sullington Hill LWS during invertebrate surveys | 16 |

| | |
|--|----|
| Table 3-7 Site resource-usage table (taken from Webb <i>et al.</i> , 2017) | 20 |
| Table 3-8 Site SAT table (taken from Webb <i>et al.</i> , 2017) | 22 |

List of Annexes

- Annex A Red Data Book Definitions
- Annex B Survey Results
- Annex C Survey conditions

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1. Introduction

1.1 Background

- 1.1.1 This appendix should be read in conjunction with **Chapter 22: Terrestrial Ecology and Nature Conservation, Volume 2** of the Environmental Statement (ES) which is provided in support of the delivery of an Environmental Impact Assessment (EIA) associated with the Rampion 2 Offshore Wind Farm, hereafter referred to as the 'Proposed Development' or 'Rampion 2'.
- 1.1.2 This appendix describes the survey method and summarises the results of an invertebrate survey undertaken in 2021. The survey focused on two Local Wildlife Sites (LWS) with the potential to be affected by Rampion 2. However, surveys were undertaken during the optioneering phase of the project before a final design freeze was reached. At the optioneering phase both LWS' were being considered for open-cut trenching. This report has been prepared following an identified Design Choice. At this juncture one of the two areas surveyed (Warningcamp Hill and New Down LWS) now falls outside of the proposed DCO Order Limits. Sullington Hill LWS is within proposed DCO Order Limits, however it will now be crossed trenchlessly. The results of the surveys from both LWS are presented **Section 3** as useful contextual information.

1.2 Survey site selection

- 1.2.1 At the time of survey, spring 2021, the proposed cable route for the scheme was to pass through two local wildlife sites: Warningcamp Hill and New Down LWS and Sullington Hill LWS. These LWS both have the potential to host important populations of invertebrates and therefore both were subject to invertebrate surveys. Surveys were undertaken by a professional entomologist.

1.3 Structure of this appendix

- 1.3.1 This appendix is structured as follows:
- **Section 2: Methods;**
 - **Section 3: Results;**
 - **Section 4: Summary;**
 - **Section 5: References;**
 - **Annex A: Red Data Book Definitions;**
 - **Annex B: Survey Results; and**
 - **Annex C: Survey conditions.**

2. Methods

- 2.1.1 The methods used for the assessment are those recommended in the Natural England guidance document *Surveying Terrestrial and Freshwater Invertebrates for Conservation Evaluation* (Drake *et al.*, 2007). In some instances, a bespoke method has been created for the site assessment but still retains the overall approach to assessing features and habitats for conservation assessment. The bespoke methods relate to the extent of the free-ranging sampling. This prioritized features that showed obvious interest, such as the tufa seepages and short sward and scrub fringe features.

2.2 Sweep netting

- 2.2.1 This method provides the main proportion of the survey element and is the most efficient method for cataloguing a site's invertebrate resource. Sweep netting involves the use of a long-handled sweep net being swept over vegetation such as stands of grasses or flowers, or along scrub fringes in order to gather invertebrate material.

2.3 Spot sampling

- 2.3.1 Spot sampling is employed to collect large, conspicuous invertebrates such as bees and wasps from flowering plants, and to supplement the sweep samples. Spot sampling is often the most effective method for recording species from high-fidelity niches.

2.4 Grubbing

- 2.4.1 Fallen deadwood, piles of rotting timber (for deadwood beetles), and short turf (for surface-running beetles) are fingertip-searched for any hiding or crawling invertebrates, principally beetles.

2.5 Pitfall traps

- 2.5.1 A series of pitfall traps were set out within the grassland for the duration of the survey.

2.6 Survey details

- 2.6.1 The survey areas were visited on five occasions: 26 May 2021; 24 June 2021; 14 July 2021; 11 August 2021 and 16 September 2021. Further survey details including weather conditions are show in **Annex C**.

3. Results

3.1 Warningcamp Hill and New Down LWS

- 3.1.1 A total of 265 species from the target groups were recorded during the surveys.
- 3.1.2 A total of 23 species recorded have a national status, though it is recognized by many of the national recording schemes that a number of these no longer warrant their current status and that they may need revising. This total does not include research-only moths.
- 3.1.3 **Table 3-1** shows the summary breakdown of species recorded at Warningcamp Hill and New Down LWS.
- 3.1.4 The full list of species recorded for the site is provided in Appendix B.

Table 3-1 Summary of species breakdown recorded at Warningcamp Hill and New Down LWS

| Total no. of species recorded | Total no. of species of importance* | Species of importance (%) |
|-------------------------------|-------------------------------------|---------------------------|
| 265 | 23 | 8.7 |

*Species do not warrant nationally significant status.

- 3.1.5 **Table 3-2** sets out the species of importance recorded at Warningcamp Hill and New Down LWS during the invertebrate surveys.

Table 3-2 Species of importance recorded at Warningcamp Hill and New Down LWS during invertebrate surveys

| Scientific name | Vernacular name | National / local status | Habitat preferences and species notes | Site notes |
|------------------------|-----------------|-------------------------|---|--|
| <i>Amara montivaga</i> | A ground beetle | Nationally Scarce | Associated with short turf and bare ground. | |
| <i>Andrena fulvago</i> | a mining bee | Notable a* | Associated with sparsely vegetated flowery grassland and brownfields with abundant yellow | Breeding confirmed on site in a southerly aspect exposure. |

| Scientific name | Vernacular name | National / local status | Habitat preferences and species notes | Site notes |
|-------------------------------------|------------------|-------------------------|---|------------|
| | | | composites, specifically hawkbits (<i>Leontodon</i> spp.). | |
| <i>Andrena minutuloides</i> | A mining bee | Notable a* | Nests in bare or patchy bare ground. Feeds from a range of flowers such as yellow composites. Now more common than its status suggests and possibly no longer warrants a nationally significant status. | – |
| <i>Andrena similis</i> | A mining bee | Notable b | Nests in bare or patchy bare ground. Feeds from a range of flowers and prefers established grassland swards for foraging. | – |
| <i>Asilus crabroniformis</i> | Hornet robberfly | NERC Act Section 41 | Its larvae are predators on dung beetle larvae. | – |
| <i>Atylotus rusticus</i> | A horsefly | Nationally Rare | A wetland species, not more common and thought to be spreading. | – |

| Scientific name | Vernacular name | National / local status | Habitat preferences and species notes | Site notes |
|-------------------------------------|-----------------------|---|---|---|
| <i>Ceratina cyanea</i> | Blue carpenter bee | Red Data Book 3* | Nests in broken dry stems and forages from a range of flowers. Prefers hot sites. Now more common than its status suggests. | – |
| <i>Cheiloisa nigripes</i> | A hoverfly | Nationally Scarce | A woodland/wood edge species associated with lady's mantle (<i>Alchemilla</i> spp.). | – |
| <i>Cistogaster globosa</i> | A parasitic fly | Red Data Book 1* | A parasite on bishop's-mitre shield bug. Expanded its range significantly and now no longer deserves a nationally significant status. | – |
| <i>Coenonympha pamphilus</i> | Small heath butterfly | NERC Act Section 41 | Fine-leaved grasses including <i>Agrostis</i> (bents). | Widespread and extensive across the site in open grassland areas. |
| <i>Dorycera graminum</i> | Phoenix fly | Provisionally Nationally Scarce; provisionally Near Threatened; NERC Act Section 41 | Associated with grasslands. Now much more common than its status suggests and is likely to be downgraded in future reviews. | |

| Scientific name | Vernacular name | National / local status | Habitat preferences and species notes | Site notes |
|---------------------------------------|--------------------------|-------------------------|---|--|
| <i>Erynnis tages</i> | Dingy skipper butterfly | NERC Act Section 41 | Bare ground and short turf with bird's-foot trefoil. | Widespread across the site along the tracks. |
| <i>Hylaeus cornutus</i> | A yellow-faced bee | Notable a* | Nests in broken dry plant stems. Feeds from a range of flowers. Now more common than its status suggests and no longer warrants a nationally significant status. | – |
| <i>Lasioglossum malachurum</i> | A mining bee | Notable b* | Nests in bare or patchy bare ground. Feeds from a range of flowers such as yellow composites. Now more common than its status suggests and possibly no longer warrants a nationally significant status. | – |
| <i>Megalonotus chiragra</i> | A ground bug | Notable b | Associated with short turf and bare ground. | – |
| <i>Megalonotus sabulicola</i> | A ground bug | Notable b | Associated with short turf and bare ground. | – |
| <i>Mordellistena parvula</i> | A tumbling flower beetle | Nationally Scarce | Associated with short turf and bare ground. | – |

| Scientific name | Vernacular name | National / local status | Habitat preferences and species notes | Site notes |
|-------------------------------|----------------------------|-------------------------|--|---|
| <i>Myopa pellicuda</i> | A thick-headed fly | Red Data Book 3 | Parasite on spring flying mining bees. | – |
| <i>Nomada fucata</i> | A nomad bee | Notable a* | A range of open habitats where its host lives. | – |
| <i>Nomada lathburiana</i> | A cuckoo bee | Red Data Book 3* | A solitary bee parasite, now very common and no longer warrants a nationally significant status. | – |
| <i>Pyrgus malvae</i> | Grizzled skipper butterfly | NERC Act Section 41 | Bare ground and short turf with prostrate growing Roseaceae including wild strawberry (<i>Fragaria vesca</i>) and creeping cinquefoil (<i>Potentilla reptans</i>). | No more than five individuals observed during their peak season (end of May). |
| <i>Sphecodes spinulosus</i> | A cuckoo bee | Red Data Book 2* | A parasite on the mining bee <i>Lasioglossum xanthopus</i> . Now more common than its status suggests. | – |
| <i>Trachyploeus alternans</i> | A weevil | Notable b | Associated with short turf and bare ground. | – |

*Accepted as being more common than this status suggests; likely to be downgraded. The most up-to-date information and species reviews are used in the assessment, largely derived from Pantheon (Webb *et al.*, 2017).

Results analysis

- 3.1.6 **Table 3-3** and **Table 3-4** have been generated using the Pantheon software package. Pantheon is an analytical tool developed by Natural England and the Centre for Ecology & Hydrology (CEH) to assist invertebrate nature conservation in England. Site data in the form of species lists can be imported into Pantheon, which then analyses the species within the lists, assigning them to habitats and resources. Pantheon also consigns the most up-to-date national status to the species where it is available.
- 3.1.7 Pantheon is also capable of other outputs such as Specific Assemblage Types (SATs) (see **Table 3-4**).
- 3.1.8 A SAT is characterized by stenotopic species (those that can withstand only a narrow range of environmental conditions). SATs are therefore more tightly defined than “*habitats*” or “*resources*” and sit within a parent habitat or Broad Assemblage Type (BAT). More than one SAT can sit within a parent BAT.
- 3.1.9 Example:
 BAT: **F2** – grassland and scrub matrix
 SAT: **F211** – herb-rich dense sward
F212 – dense scrub
- 3.1.10 The information obtained from Pantheon can then be used to assign quality to sites and their features, assist in management decisions, and facilitate requirement for further surveys, where required and appropriate.
- 3.1.11 Pantheon was first made publicly accessible in April 2018 and is the primary analytical tool used by entomologists in site evaluation. It is also the tool recognized and preferred by Natural England. For more information on this new resource, see <http://www.brc.ac.uk/pantheon/>.
- 3.1.12 Not all species of importance are expressed in the following tables, as they do not form part of the Pantheon analysis and/or their specific requirements are not yet fully understood.

Table 3-3 Site resource-usage table (taken from Webb *et al.*, 2017)

| Broad biotope | Habitat | No. of species | No. of species with conservation status (excluding research-only moths) | Species with conservation status (excluding research-only moths) |
|---------------|--------------------|----------------|---|---|
| Open habitats | Tall sward & scrub | 124 | 6 | <i>Erynnis tages</i> (S41; Vulnerable); <i>Asilus crabroniformis</i> (S41); <i>Myopa pellucida</i> (RDB3); <i>Cheilosia</i> |

| Broad biotope | Habitat | No. of species | No. of species with conservation status (excluding research-only moths) | Species with conservation status (excluding research-only moths) |
|-----------------|---------------------------|----------------|---|--|
| | | | | <i>nigripes</i> (NS); <i>Dorycera graminum</i> (pS41*); <i>Ceratina cyanea</i> (RDB3*) |
| Open habitats | Short sward & bare ground | 69 | 12 | <i>Coenonympha pamphilus</i> (Near Threatened, S41); <i>Amara montivaga</i> (NS); <i>Trachypoeus alternans</i> (Nb); <i>Megalonotus sabulicola</i> (Nb); <i>Andrena fulvago</i> (Na*); <i>Andrena minutuloides</i> (Na*); <i>Andrena similis</i> (Nb); <i>Nomada fucata</i> (Na*); <i>Nomada lathburiana</i> (RDB3*); <i>Lasioglossum malachurum</i> (Nb); <i>Sphecodes spinulosus</i> (RDB2*); <i>Pyrgus malvae</i> (S41) |
| Tree-associated | Decaying wood | 20 | 1 | <i>Hylaeus cornutus</i> (Na*) |
| Tree-associated | Shaded woodland floor | 15 | 1 | <i>Cheilosia nigripes</i> (NS) |
| Wetland | Acid & sedge peats | 14 | 1 | <i>Atylotus rusticus</i> (NR*) |
| Wetland | Marshland | 6 | – | – |
| Tree-associated | Arboreal | 6 | – | – |
| Wetland | Running water | 3 | – | – |
| Coastal | Saltmarsh | 1 | – | – |
| Coastal | Brackish pools & ditches | 1 | – | – |

*Accepted as being more common than this status suggests; likely to be downgraded.

Table 3-4 Site SAT table (taken from Webb *et al.*, 2017)

| Broad biotope | SAT | SAT code | No. of species | No. of species with conservation status (excluding research-only moths) | Conservation status | Reported condition |
|-----------------|----------------------|----------|----------------|---|---|---------------------------------|
| Open habitats | Rich flower resource | F002 | 42 | 8 | <i>Andrena fulvago</i> (Na*); <i>Andrena minutuloides</i> (Na*); <i>Andrena similis</i> (Nb); <i>Ceratina cyanea</i> (RDB3*); <i>Nomada fucata</i> (Na*); <i>Nomada lathburiana</i> (RDB3*); <i>Hylaeus cornutus</i> (Na*); <i>Lasioglossum malachurum</i> (Nb*) | Favourable |
| Tree-associated | Bark & sapwood decay | A212 | 17 | 1 | <i>Hylaeus cornutus</i> (Na*) | Unfavourable (17 of 19 species) |
| Open habitats | Scrub edge | F001 | 9 | 2 | <i>Cheilosia nigripes</i> (NS); <i>Hylaeus cornutus</i> (Na*) | Unfavourable (9 of 11 species) |
| Open habitats | Open short sward | F112 | 6 | 1 | <i>Coenonympha pamphilus</i> (S41) | Unfavourable (6 of 13 species) |
| Open habitats | Bare sand & chalk | F111 | 5 | 2 | <i>Amara montivaga</i> (NS); <i>Trachyploeus alternans</i> (Nb) | Unfavourable (5 of 19 species) |

| Broad biotope | SAT | SAT code | No. of species | No. of species with conservation status (excluding research-only moths) | Conservation status | Reported condition |
|-----------------|------------------------|----------|----------------|---|--------------------------------|--------------------------------|
| Open habitats | Scrub-heath & moorland | F003 | 2 | – | – | Unfavourable (2 of 9 species) |
| Wetland | Reed-fen & pools | W314 | 1 | 1 | <i>Atylotus rusticus</i> (NR*) | Unfavourable (1 of 11 species) |
| Tree-associated | Heartwood decay | A211 | 1 | – | – | Unfavourable (1 of 6 species) |

*Accepted as being more common than this status suggests; likely to be downgraded.

Warningcamp Hill and New Down LWS discussion

Habitats

- 3.1.13 The survey area at Warningcamp Hill and New Down LWS is represented by a range of habitats broadly covering three broad biotopes: “*open habitats*”, “*tree-associated*”, and “*wetland*”. The “*coastal*” biotope is also represented, though only by a single vagrant species.
- 3.1.14 It is the open terrestrial biotope that dominates the site in terms of species associations and physical extent of each habitat. This is supported by the other biotopes, in particular the tree-associated biotope, which form the overall mosaic of the site, but not withstanding the importance of the wetland biotope that serves to increase the invertebrate biodiversity.
- 3.1.15 The habitats that are the most prominent across all areas of the compartment are the tall sward and scrub with a total of 124 species of association recorded. The resource is dominated by beetles, true bugs such as shieldbugs and grassbugs, and also flies. These are complemented by bees, wasps, and butterflies. Six species are noted by Pantheon as being of particular value to the habitat.
- 3.1.16 The second most speciose habitat on the site is the short sward and bare-ground habitat, with 69 species of association. This habitat is piecemeal across the site, being found in discrete patches. Despite the overall limited area of habitat, the resource is significant and includes 12 species with a nationally significant status, although four are more common than their current status suggests. The suite of scarce species includes solitary bees and surface-running beetles.
- 3.1.17 The tree-associated element of the site is relatively poorly developed, being contained at the edges of the site. However, it has influence on the invertebrates that utilize the site. As there is a deadwood element on the site, 20 species of association are recorded, including one of a nationally significant status. However, *Hylaeus cornutus* (a yellow-faced bee) no longer deserves any status.
- 3.1.18 Although the site does not contain any significant waterbody, there is a wetland element to the site and, as such, a representative suite of invertebrates. There are 20 species recorded that are noted as being associated with wetland features, such as running water and marshes. There is one species of association from this biotope, and this species (the horsefly *Atylotus rusticus*) is thought to be a vagrant to the site, being well known for dispersing a long distance from their breeding sites.

Specific assemblage tables

- 3.1.19 There is one assemblage highlighted by the analysis as being in “*favourable condition*”: the rich flower resource (F002). This is an extensive and wide-ranging resource that encompasses all flowering plants at the site. The dominant flora are trefoils, especially common bird’s-foot trefoil but also yellow composites, and other Asteraceae such as knapweed (*Centaurea* spp.) and thistles (*Cirsium* spp.).

- 3.1.20 Despite the Warningcamp Hill and New Down LWS being a predominantly open grassland site, owing to its proximity to woodland and also the presence of deadwood on the site, there is a strong suite of bark and sapwood decay species (A212). A total of 17 species were recorded, and although this does not reach favourable status (threshold being 19 species), it is therefore of very high quality and status for the site.
- 3.1.21 The scrub fringe (F001) is also well represented, owing to the extensive interface between the grassland and woodland. Nine species were recorded (threshold = 11), and this is thought to be of significance to the site. It also includes the hoverfly *Cheilosia nigripes*, a Nationally Scarce species of calcareous grassland and scrub interfaces.
- 3.1.22 Although Warningcamp Hill and New Down LWS is a calcareous grassland, the associated assemblages, including the open short sward SAT (F112) and bare sand and chalk SAT (F111), are not significantly represented in the analysis, with only six and five species of association recorded respectively. These are difficult SATs to reach favourable status and at this site, both SATs are of limited extent and not in an optimal state; consequently, their resources are also small.

Species

- 3.1.23 The survey of Warningcamp Hill and New Down LWS recorded 265 species, with 23 species identified by Pantheon as being of value; however a number of species are more common than their status suggests, in time this number will be revised downwards as further status reviews are completed.
- 3.1.24 The lists contain a range of species, reflective of the habitats present on the site. The dominant species on the lists are those associated with rich flower resources and complex interfaces with scrub and woodland, and also those associated with tall flowery grasslands.
- 3.1.25 The site also includes a range of species synonymous with deadwood, in particular, species that have a requirement of deadwood to nest in (solitary bees and wasps) but also require plentiful swards flowers to forage from or hunt along.
- 3.1.26 The species lists include a number of localized and scarce species, and most are scarce, as they have exacting requirements from a site, for example, requiring plentiful flowers near bare ground or deadwood (solitary bees and wasps), or continuous inputs of dung and associated resources of dung beetle larvae (the hornet robberfly). Most of the scarce species therefore require sites that are complex and have a range of different features on them or adjacent to them. It is this complexity that helps drive the diversity of the site and increase the opportunities to the scarce and demanding species.
- 3.1.27 There is also a suite of butterfly species that are dependent upon open short, and sparse swards are present on the site. The dingy skipper, grizzled skipper, and small heath are all NERC Act Section 41 species and in decline, with the dingy skipper having declined by 61 percent (Butterfly Conservation, 2021a), grizzled skipper by 55 percent (Butterfly Conservation, 2021b), and small heath by 57 percent (Butterfly Conservation, 2021c) since the 1970s.

- 3.1.28 More broadly, as the site has an extensive flowery component, there is a corresponding rich pollinator resource. This resource is reliant on the extensive and diverse flowering plant component, ranging from spring blossom to late flowering grassland species such as knapweeds (*Centaurea* spp.) and yarrow (*Achillea millefolium*). A total of 25 rich flower resource species are noted during these surveys that are intrinsically linked to particular flowers or abundant flowering resources.

3.2 Sullington Hill LWS

- 3.2.1 A total of 168 species from the target groups were recorded during the surveys.
- 3.2.2 A total of 18 species recorded have a national status, though it is recognized by many of the national recording schemes that a number of these no longer warrant their current status and that they may need revising (those with an *). This total does not include research-only moths.
- 3.2.3 The full list of species recorded for the site is provided in **Annex B**.
- 3.2.4 **Table 3-5** shows the summary breakdown of species recorded at Sullington Hill LWS

Table 3-5 Summary of species breakdown recorded at Sullington Hill LWS

| Total no. of species recorded | Total no. of species of importance* | Species of importance (%) |
|-------------------------------|-------------------------------------|---------------------------|
| 168 | 18 | 10.17 |

*Species do not warrant nationally significant status.

- 3.2.5 **Table 3-6** sets out the species of importance recorded at Sullington Hill LWS during the invertebrate surveys.

Table 3-6 Species of importance recorded at Sullington Hill LWS during invertebrate surveys

| Scientific name | Vernacular name | National / local status | Habitat preferences and species notes | Site notes |
|--------------------------------|-----------------|-------------------------|--|------------|
| <i>Adscita statices</i> | Forrester moth | NERC Act Section 41 | Associated with calcareous grasslands with common sorrel (<i>Rumex acetosa</i>). | – |
| <i>Amara montivaga</i> | A ground beetle | Nationally Scarce | Associated with short turf and bare ground. | – |

| Scientific name | Vernacular name | National / local status | Habitat preferences and species notes | Site notes |
|---------------------------------------|-------------------------|---|---|--|
| <i>Andrena minutuloides</i> | A mining bee | Notable a* | Nests in bare or patchy bare ground. Feeds from a range of flowers such as yellow composites. Now more common than its status suggests and possibly no longer warrants a nationally significant status. | – |
| <i>Andrena roseae</i> | White bryony mining bee | Red Data Book 3 | Associated with open habitats with white bryony (<i>Bryonia alba</i>). The species is increasing in range, and its status is likely to be downgraded in the upcoming bees, wasps, and ants review. | Breeding is confirmed on site amongst bare-ground exposures. |
| <i>Blaesoxipha plumicornis</i> | A fly | provisionally Nationally Scarce: provisionally Near Threatened* | Parasitizes grasshoppers. Expanding its distribution and frequency, and therefore likely to be downgraded in future reviews. | – |
| <i>Cassida prasina</i> | A tortoise beetle | Nationally Scarce | Associated with yarrow (<i>Achillea millefolium</i>). | – |
| <i>Cistogaster globosa</i> | A parasitic fly | Red Data Book 1* | A parasite on bishop's-mitre shield bug. Expanded its | – |

| Scientific name | Vernacular name | National / local status | Habitat preferences and species notes | Site notes |
|---|-------------------------|------------------------------------|---|---|
| | | | range significantly and now no longer deserves a nationally significant status. | |
| <i>Coenonympha pamphilus</i> | Small heath butterfly | NERC Act Section 41 | Fine-leaved grasses including <i>Agrostis</i> (bents). | Widespread and extensive across the site in open grassland areas. |
| <i>Cryptocephalus bilineatus</i> | A leaf beetle | Nationally Scarce | Associated with kidney vetch (<i>Anthyllis vulnerarira</i>). | – |
| <i>Erynnis tages</i> | Dingy skipper butterfly | NERC Act Section 41 | Bare ground and short turf with bird's-foot trefoil (<i>Lotus corniculatus</i>). | Widespread across the site along the tracks. |
| <i>Euheptaulacus villosus</i> | A dung beetle | Nationally Scarce | Associated with short swards and bare ground. | – |
| <i>Hesperia comma</i> | Silver-spotted skipper | Nationally Scarce; Near Threatened | Short sward calcareous grassland with sheep's fescue (<i>Festuca ovina</i>), optimally over bare or patchy bare ground. | Two individuals observed, including an egg-laying female. |
| <i>Hylaeus dilatatus</i> | A yellow-faced bee | Red Data Book 3* | Nests in broken dry plant stems. Feeds from a range of flowers. Now more common than its status suggests and no longer warrants a | – |

| Scientific name | Vernacular name | National / local status | Habitat preferences and species notes | Site notes |
|---------------------------------------|-----------------|-------------------------|---|------------|
| | | | nationally significant status. | |
| <i>Lasioglossum malachurum</i> | A mining bee | Notable b* | Nests in bare or patchy bare ground. Feeds from a range of flowers such as yellow composites. Now more common than its status suggests and possibly no longer warrants a nationally significant status. | – |
| <i>Lasioglossum pauxillum</i> | A mining bee | Notable a* | Nests in bare or patchy bare ground. Feeds from a range of flowers such as yellow composites. Now more common than its status suggests and possibly no longer warrants a nationally significant status. | – |
| <i>Neiocarus faber</i> | A weevil | Notable b*; Notable b | Associated with short turf and bare ground. | – |
| <i>Nomada lathburiana</i> | A cuckoo bee | Red Data Book 3* | A solitary bee parasite, now very common and no longer warrants a nationally significant status. | – |

| Scientific name | Vernacular name | National / local status | Habitat preferences and species notes | Site notes |
|----------------------|----------------------------|-------------------------|--|--|
| <i>Pyrgus malvae</i> | Grizzled skipper butterfly | NERC Act Section 41 | Bare ground and short turf with prostrate growing Roseaceae including wild strawberry (<i>Fragaria vesca</i>) and creeping cinquefoil (<i>Potentilla reptans</i>). | More than five individuals observed during their peak season (end of May). |

*Accepted as being more common than this status suggests; likely to be downgraded. The most up-to-date information and species reviews are used in the assessment, largely derived from Pantheon (Webb *et al.*, 2017).

Results analysis

- 3.2.6 **Table 3-7** and **Table 3-8** have been generated using Sullington Hill LWS results and the Pantheon software package.
- 3.2.7 It is noted that not all species of importance are expressed in the tables, as they do not form part of the Pantheon analysis and/or their specific requirements are not yet fully understood.

Table 3-7 Site resource-usage table (taken from Webb *et al.*, 2017)

| Broad biotope | Habitat | No. of species | No. of species with conservation status (excluding research-only moths) | Species with conservation status (excluding research-only moths) |
|---------------|---------------------------|----------------|---|--|
| Open habitats | Tall sward & scrub | 83 | 4 | <i>Blaesoxipha plumicornis</i> (pNS: pNT) <i>Erynnis tages</i> (S41; Vulnerable); <i>Hylaeus dilatatus</i> (RDB3*); <i>Adscita statices</i> (S41) |
| Open habitats | Short sward & bare ground | 47 | 14 | <i>Euheptaulacus villosus</i> (NS); <i>Amara montivaga</i> (NS); <i>Cassida prasina</i> (NS); <i>Cryptocephalus bilineatus</i> (NS); <i>Neliocarus faber</i> |

| Broad biotope | Habitat | No. of species | No. of species with conservation status (excluding research-only moths) | Species with conservation status (excluding research-only moths) |
|------------------------|-----------------------|----------------|---|---|
| | | | | (Nb*:Nb); <i>Andrena minutuloides</i> (Na*); <i>Andrena rosae</i> (RDB2*); <i>Nomada lathburiana</i> (RDB3*); <i>Hylaeus dilatatus</i> (RDB3*); <i>Lasioglossum pauxillum</i> (Na*); <i>Hesperia comma</i> (NS:NT); <i>Pyrgus malvae</i> (S41); <i>Coenonympha pamphilus</i> (Near Threatened, S41) |
| Tree-associated | Shaded woodland floor | 6 | – | – |
| Wetland | Acid & sedge peats | 6 | – | – |
| Tree-associated | Decaying wood | 5 | – | – |
| Wetland | Marshland | 4 | – | – |
| Tree-associated | Arboreal | 4 | – | – |
| Wetland | Running water | 1 | – | – |

*Accepted as being more common than this status suggests; likely to be downgraded.

Table 3-8 Site SAT table (taken from Webb *et al.*, 2017)

| Broad biotope | SAT | SAT code | No. of species | No. of species with conservation status (excluding research-only moths) | Conservation status | Reported condition |
|-----------------|------------------------|----------|----------------|---|--|---------------------------------|
| Open habitats | Rich flower resource | F002 | 27 | 6 | <i>Andrena minutuloides</i> (na*); <i>Andrena rosae</i> (RDB2*); <i>Nomada lathburiana</i> (RDB3*); <i>Hylaeus dilatatus</i> (RDB3*); <i>Lasioglossum pauxillum</i> (Na*); <i>Lasioglossum malachurum</i> (Nb) | Favourable |
| Open habitats | Open short sward | F112 | 10 | 5 | <i>Coenonympha pamphilus</i> (Near Threatened; S41); <i>Cassida prasina</i> (NS); <i>Cryptocephalus bilineatus</i> (NS); <i>Neliocarus faber</i> (Nb*; Nb); <i>Hesperia comma</i> (NS; NT) | Unfavourable (10 of 13 species) |
| Open habitats | Scrub edge | F001 | 7 | – | – | Unfavourable (7 of 11 species) |
| Tree-associated | Ba:Drk & sapwood decay | A212 | 5 | – | – | Unfavourable (5 of 19 species) |
| Open habitats | Bare sand & chalk | F111 | 3 | 2 | <i>Euhepaulacus villosus</i> (NS); <i>Amara montivaga</i> (NS) | Unfavourable (3 of 19 species) |

*Accepted as being more common than this status suggests; likely to be downgraded.

Habitats

- 3.2.8 Sullington Hill LWS is represented by a range of habitats broadly covering three broad biotopes: “*open habitats*”, “*tree-associated*”, and “*wetland*”. However, it is the open terrestrial biotope that dominates the site in terms of species associations and physical extent of each habitat. This is supported by the other biotopes, in particular the tree-associated biotope, which form the overall mosaic of the site, but not withstanding the importance of the wetland biotope that serves to increase the invertebrate biodiversity despite there not being any obvious waterbodies on the site.
- 3.2.9 The habitats that are the most prominent across all areas of the compartment are the tall sward and scrub with a total of 83 species of association recorded. The resource is dominated by beetles, true bugs such as shieldbugs and grassbugs, and also flies. These are complemented by bees, wasps, and butterflies. Four species are noted by Pantheon as being of particular value to the habitat.
- 3.2.10 The second most speciose habitat on the site is the short sward and bare ground habitat, with 47 species of association. This habitat is extensive across much of the site, owing to the very short swards, produced by grazing cattle. As there are extensive short swards, there is also a suite of high-fidelity species associated with this feature. A total of 14 species are noted from this habitat that have nationally significant status, although a number are now no longer genuinely scarce.
- 3.2.11 The tree-associated element of the site is relatively poorly developed with a few species associated with this habitat type. This is to be expected, as there is little woodland presence on the site other than dense scrub and poorly developed scrub fringe.
- 3.2.12 The site includes a suite of wetland species, despite there not being any obvious water features on the site. They are therefore not intrinsic to the site but do add to the overall site value, since many wetland flies move out from the breeding wetland areas in order to find suitable nectar foraging, such as what this site offers.

Specific assemblage tables

- 3.2.13 There is one assemblage highlighted by the analysis as being in “*favourable condition*”: the rich flower resource (F002). This is an extensive and wide-ranging resource that encompasses all flowering plants at the site. The dominant flora are trefoils, especially common bird’s-foot trefoil but also common rock rose (*Helianthemum nummularium*), yellow composites, and Asteraceae such as knapweeds (*Centaurea* spp.). Bramble (*Rubus fruticosus*) also forms a strong component of the flowering resources at the site.
- 3.2.14 Although the open short sward SAT (F112) does not reach a favourable condition, it does hold 10 species of close association (threshold = 13) and is thought to be in good condition and of high value to the site. It includes a wide range of bees and wasps, and also beetles such as the leaf beetle *Cryptocephalus bilineatus*, a localized warmth-loving species dependent upon open and patchy short swards on calcareous soils.

- 3.2.15 The bare sand and chalk SAT (F111) is not well represented in the analysis, with only three species of association recorded. This is a particularly difficult SAT to reach favourable status, and at this site there is little open bare ground, with the exception of a track edge and small area of disturbed ground.
- 3.2.16 There are other SATs noted in the analysis, namely the bark and sapwood decay SAT (A212) and scrub edge (F001), but as they are not significant components of the site, they are poorly expressed within the SAT tables, being represented by five and seven species respectively, with neither SAT possessing species of conservation importance.

Species

- 3.2.17 The survey of Sullington Hill LWS recorded 168 species and 18 species identified by Pantheon as being of value; a number of species are more common now than their status suggests, so in time this number will be revised downwards as further status reviews are completed.
- 3.2.18 The total number of recorded species is low. This is thought to be due to the very short swards for much of the late spring and early summer impeding surveys, and the lack of flowers on the site resulting in little activity from invertebrates.
- 3.2.19 Despite the short list of species, the lists do contain a range of species, reflective of the habitats present on the site. The analysis also highlights the short turf species as being of greatest value.
- 3.2.20 The species lists also includes a proportionally strong inventory of localized and scarce species, especially butterflies and beetles.
- 3.2.21 This inventory of scarce species includes a suite of butterfly species that are dependent upon open short and sparse swards. The dingy skipper, grizzled skipper, and silver-spotted skippers are the butterflies of greatest value to the site, complemented by the small heath. All of the preceding species are listed on the NERC Act as Section 41 species, and all but the silver-spotted skipper are in decline, with the dingy skipper having declined by 61 percent (Butterfly Conservation, 2021a), grizzled skipper by 55 percent (Butterfly Conservation, 2021b), and small heath by 57 percent (Butterfly Conservation, 2021c) since the 1970s.
- 3.2.22 The dominant feature at the site is the short swards. This habitat includes a strong list of high-fidelity species including the ground beetle *Amara montivaga* (Nationally Scarce), a surface-running ground beetle of calcareous grasslands.
- 3.2.23 The site also includes a population of the white bryony mining bee (*Andrena rosae*). This species was once a considerable scarcity, though through recent range expansions, it is now not thought to be of Red Data Book 2 status. It is still, however, an interesting and valuable species to the site.

Survey limitations

- 3.2.24 Surveys were undertaken over a single season only. Whilst the results of the survey are not considered to be limited by prevailing weather conditions during the site visits, having only a single year's data to analyse could influence the recording

of species that were abundant during 2021, or under-record species that were having a particularly poor year.

- 3.2.25 At Sullington Hill LWS intensive grazing during spring, which was followed by cold weather for much of May, the calcareous sward did not grow or flower until after mid-June. This, therefore, effected the first two visits to the site, making sampling problematic owing to the reduced invertebrate activity and usage of the site.
- 3.2.26 Despite this slow start to the survey, it is considered that sufficient data has been attained to fairly appraise the site and its features of potential value to invertebrates.

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4. Summary

4.1 Warningcamp Hill and New Down LWS Assessment Summary

- 4.1.1 Warningcamp Hill and New Down LWS had a total of 265 species recorded, including 23 species of importance. This constitutes 8.7 percent of the total species recorded, which is regarded as a moderately significant percentage.
- 4.1.2 The overall number of species recorded from the target groups is moderately high, particularly when factoring in the comparatively small survey area. There is no single part of the site that is of greater significance than the other. Owing to the comparatively small area and complex character across the whole site, it is suggested that all areas have value, and each area appears to be intrinsically linked to the other, i.e. scrub fringe next to grassland or deadwood adjacent to rich flower resources.
- 4.1.3 Owing to the complexity of the site, it includes a suite of specialized and localized species. Although there is no single species or species group of greatest value to the site, the strong populations of scarce and declining butterflies are of particular note, as they are demanding species requiring significant patchworks of habitat to persist in any number at a location. Coupled with these, there are other specialized and demanding groups such as the bees and wasps, both the ground-nesting and also aerial (deadwood)-nesting assemblages that will require optimal and complex habitat mosaics in order to survive on the site alongside a Proposed Development.

4.2 Sullington Hill LWS Assessment Summary

- 4.2.1 Sullington Hill LWS had a total of 168 species recorded, including 18 species of importance. This constitutes 10.7 percent of the total species recorded.
- 4.2.2 This percentage is considered to be a significant proportion of the total species recorded, reflecting the value of short sard calcareous grasslands to scarce and high-fidelity species.
- 4.2.3 As previously stated, the overall number of species recorded is comparatively low, particularly when factoring in the type of habitat and geographical locality. However, owing to intensive grazing during spring, followed by cold weather for much of May, the sward and subsequent flowering of the plants did not recover until mid-June. This therefore effected the first two visits to the site.
- 4.2.4 The survey though did fairly appraise the habitat present and in particular recorded a strong suite of specialized and localized species, some of which, as an assemblage, may have county significance such as the suite of short-turf-dependent butterflies and beetles. To a lesser extent, the ground-nesting bee and wasp resource is also of some value.

- 4.2.5 The site comprises a moderately rich invertebrate fauna that includes a number of localized and specialized species.
- 4.2.6 The valuation of the site takes into consideration the range of species recorded, including the scarce species, the overall assemblages, and the importance of the habitats to the species. It also considers the context of the site and/or its species in relation to the local area and further afield.
- 4.2.7 From considering the above summary information and data collected from the surveys, it is suggested that any effect on the site's key features and species should be considered to be of at least County (medium) importance.
- 4.2.8 Sullington Hill LWS is considered to be of County (medium) importance and not one of a lower status, owing to the site holding significant populations of NERC Act Section 41 species, species with a nationally significant status, and also species whose distribution is restricted to this site and possibly only a few others in the county. The site also holds a suite of species that are unlikely to be replicated across the wider countryside owing to the site's juxtaposition of flowery calcareous grassland with short turfs alongside disturbed open bare ground.

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5. References

- Anon., 2008. *Acalypterate keys*. Unpublished test keys. Dipterists Forum.
- Ball, S., 2005. *Hoverfly Recording Scheme*. Available at: www.hoverfly.org.uk
- Butterfly Conservation (2021a). Dingy skipper species page. <https://butterfly-conservation.org/butterflies/dingy-skipper> [Accessed 30 May 2023].
- Butterfly Conservation (2021b). Grizzled skipper species page. <https://butterfly-conservation.org/butterflies/grizzled-skipper> [Accessed 30 May 2023].
- Butterfly Conservation (2021c). Small heath species page. <https://butterfly-conservation.org/butterflies/small-heath> [Accessed 30 May 2023].
- d'Annis Fonseca, E.C.M., 1978. *Diptera Orthorrhapha Brachyycera – Dolichopodidae*. Royal Entomological Society of London, London.
- Drake, C.M. et al., 2007. *NERR005. Surveying Terrestrial and Freshwater Invertebrates for Conservation Evaluation*. Natural England, Peterborough.
- Falk, S., 2015. *Field Guide to the Bees of Great Britain and Ireland*. British Wildlife Publishing, Totnes.
- Hubble, D.S., 2014. *A Review of the Scarce and Threatened Beetles of Great Britain: the Leaf Beetles and Their Allies. Species Status No. 19*. Natural England Commissioning Reports, Number 161.
- Lott, D. et al., 2007. *ISIS. Invertebrate Species-Habitat Information System, 2010 Build*. Natural England, Peterborough.
- Richards, O.W., 1980. *Scolioidea, Vespoidea and Sphecoidea: Hymenoptera, Aculeata*. Royal Entomological Society, London.
- Shirt, D.B., 1987. *British Red Data Books: 2. Insects*. Nature Conservancy Council, Peterborough.
- Stubbs, A.E., 2002. *British Hoverflies*. British Entomological and Natural History Society, Reading.
- Stubbs, A.E., Drake, M., 2001. *British Soldierflies and Their Allies*. British Entomological and Natural History Society, London.
- Webb, J., Heaver, D., Lott, D., Dean, H.J., van Breda, J., Curson, J., Harvey, M., Gurney, M., Roy, D.B., van Breda, A., Drake, M., Alexander, K.N.A. and Foster, G. (2017). *Pantheon – Database Version 3.7.4*. [online] Available at: <http://www.brc.ac.uk/pantheon/> [Accessed 30 May 2023].

Annex A

Red Data Book Definitions

Red Data Book category 1 (RDB 1) – Endangered

Species that are known or believed to occur as only a single population within one 10km square of the National Grid.

Red Data Book category 2 (RDB 2) – Vulnerable

Species declining throughout their range or in vulnerable habitats.

Red Data Book category 3 (RDB 3) – Rare

Species that are estimated to exist in only 15 or fewer post-1970 10km squares. This criterion may be relaxed where populations are likely to exist in over 15 10km squares but occupy small areas of especially vulnerable habitat.

Nationally Notable (Scarce) category A (NS A) – Notable A

Taxa that do not fall within the RDB category but that are nonetheless uncommon in Great Britain and thought to occur in 30 or fewer 10km squares of the National Grid or, for less well-recorded groups, between eight and 20 vice counties.

Nationally Notable (Scarce) category B (NS B) – Notable B

Taxa that do not fall within the RDB category but that are nonetheless uncommon in Great Britain and thought to occur in 31–100 10km squares of the National Grid or, for less well-recorded groups, between eight and 20 vice counties.

Nationally Notable (Scarce) (N) – Notable

Species that are estimated to occur within the range of 16–100 10km squares. The subdividing of this category into Notable A and Notable B has not been attempted for many species in this part of the review.

IUCN categories

EXTINCT (EX)

A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range, have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

CRITICALLY ENDANGERED (CR)

A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered, and it is therefore considered to be facing an extremely high risk of extinction in the wild.

ENDANGERED (EN)

A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered, and it is therefore considered to be facing a very high risk of extinction in the wild.

VULNERABLE (VU)

A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable, and it is therefore considered to be facing a high risk of extinction in the wild.

NEAR THREATENED (NT)

A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered, or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.

LEAST CONCERN (LC)

A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable, or Near Threatened. Widespread and abundant taxa are included in this category.

DATA DEFICIENT

A taxon is Data Deficient (DD) when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. DD is therefore not a category of threat.

GB Rarity Status categories and criteria

Broadly speaking, the Nationally Rare category is equivalent to the Red Data Book, namely: Endangered (RDB1), Vulnerable (RDB2), Rare (RDB3), Insufficiently Known (RDBK), and Extinct, which will not be used in this report.

The Nationally Scarce category is directly equivalent to the combined Nationally Notable A (Na) and Nationally Notable B (Nb) categories used in the assessment of various taxonomic groups, e.g. by Hyman and Parsons (1992) in assessing the status of beetles, but never used in a published format to assess these three families.

Nationally Rare Native species recorded from 15 or fewer hectads of the Ordnance Survey National Grid in Great Britain since 31 December 1989 and where there is reasonable confidence that exhaustive recording will not find them in more than 15 hectads. This category includes species that are probably extinct.

Nationally Scarce Native species that are not regarded as Nationally Rare AND have not been recorded from more than 100 hectads of the Ordnance Survey National Grid in Great Britain since 31 December 1989 and where there is reasonable confidence that exhaustive recording will not find them in more than 100 hectads.

England NERC S.41 Biodiversity Lists – England. England NERC S.41 Species ‘of principal importance for the purpose of conserving biodiversity’ covered under section 41 (England) of the NERC Act (2006) therefore need to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity. 2008 Natural Environment and Rural Communities Act 2006 – Species of Principal Importance in England (section 41) and Wales (section 42)

CONFIDENTIAL

Annex B

Survey Results

Warningcamp Hill and New Down LWS Results

Only species with a national status have been annotated. All others are common or local species.

| Scientific name | Taxonomic group | National status |
|-----------------------------------|-----------------|-------------------|
| <i>Acanthosoma haemorrhoidale</i> | Hemiptera | |
| <i>Aelia acuminata</i> | Hemiptera | |
| <i>Aglais io</i> | Lepidoptera | |
| <i>Agriotes acuminatus</i> | Coleoptera | |
| <i>Agriotes sputator</i> | Coleoptera | |
| <i>Agrypnus murinus</i> | Coleoptera | |
| <i>Amara convexior</i> | Coleoptera | |
| <i>Amara lunicollis</i> | Coleoptera | |
| <i>Amara montivaga</i> | Coleoptera | Nationally Scarce |
| <i>Amara similata</i> | Coleoptera | |
| <i>Amphimallon solstitiale</i> | Coleoptera | |
| <i>Andrena cineraria</i> | Hymenoptera | |
| <i>Andrena dorsata</i> | Hymenoptera | |
| <i>Andrena flavipes</i> | Hymenoptera | |
| <i>Andrena fulvago</i> | Hymenoptera | Notable a* |
| <i>Andrena labialis</i> | Hymenoptera | |
| <i>Andrena minutula</i> | Hymenoptera | |
| <i>Andrena minutuloides</i> | Hymenoptera | Notable a* |

| Scientific name | Taxonomic group | National status |
|---|-----------------|-----------------------------|
| <i>Andrena nitida</i> | Hymenoptera | |
| <i>Andrena similis</i> | Hymenoptera | Notable b |
| <i>Andrena wilkella</i> | Hymenoptera | |
| <i>Anobium fulvicorne</i> | Coleoptera | |
| <i>Anomoia purmunda</i> | Diptera | |
| <i>Anotylus sculpturatus</i> | Coleoptera | |
| <i>Anthocharis cardamines</i> | Lepidoptera | |
| <i>Aphodius sticticus</i> | Coleoptera | |
| <i>Aplomya confinis</i> | Diptera | |
| <i>Asilus crabroniformis</i> | Diptera | Section 41 Priority Species |
| <i>Athous haemorrhoidalis</i> | Coleoptera | |
| <i>Atylotus rusticus</i> | Diptera | Nationally Rare* |
| <i>Autographa gamma</i> | Lepidoptera | |
| <i>Bembecia ichneumoniformis</i> | Lepidoptera | |
| <i>Bibio leucopterus</i> | Diptera | |
| <i>Bithia spreta</i> | Diptera | |
| <i>Bombus (Thoracobombus) pascuorum</i> | Hymenoptera | |
| <i>Bombus hortorum</i> | Hymenoptera | |
| <i>Bombus hypnorum</i> | Hymenoptera | |
| <i>Bombus lapidarius</i> | Hymenoptera | |
| <i>Bombus pratorum</i> | Hymenoptera | |
| <i>Bombus terrestris</i> | Hymenoptera | |

| Scientific name | Taxonomic group | National status |
|--|-----------------|-------------------|
| <i>Bombus vestalis</i> | Hymenoptera | |
| <i>Bombylius major</i> | Diptera | |
| <i>Bruchidius varius</i> | Coleoptera | |
| <i>Bruchus rufimanus</i> | Coleoptera | |
| <i>Byrrhus pilula</i> | Coleoptera | |
| <i>Calliphora vicina</i> | Diptera | |
| <i>Cantharis nigricans</i> | Coleoptera | |
| <i>Cassida rubiginosa</i> | Coleoptera | |
| <i>Ceratina cyanea</i> | Hymenoptera | Red Data Book 3* |
| <i>Cetonia aurata</i> | Coleoptera | |
| <i>Chaetocnema hortensis</i> | Coleoptera | |
| <i>Chalcosyrphus nemorum</i> | Diptera | |
| <i>Cheilosia nigripes</i> | Diptera | Nationally Scarce |
| <i>Chelostoma campanularum</i> | Hymenoptera | |
| <i>Chloromyia formosa</i> | Diptera | |
| <i>Chorthippus albomarginatus</i> | Orthoptera | |
| <i>Chorthippus brunneus</i> | Orthoptera | |
| <i>Chorthippus parallelus</i> | Orthoptera | |
| <i>Chrysotoxum bicinctum</i> | Diptera | |
| <i>Chrysotoxum festivum</i> | Diptera | |
| <i>Cistogaster globosa</i> | Diptera | Red Data Book 1* |
| <i>Coccinella septempunctata</i> | Coleoptera | |

| Scientific name | Taxonomic group | National status |
|---|-----------------|--|
| <i>Coenonympha pamphilus</i> | Lepidoptera | Near Threatened; Section 41 Priority Species |
| <i>Conocephalus fuscus</i> | Orthoptera | |
| <i>Coremacera marginata</i> | Diptera | |
| <i>Coreus marginatus</i> | Hemiptera | |
| <i>Curculio glandium</i> | Coleoptera | |
| <i>Dasytes aeratus</i> | Coleoptera | |
| <i>Deraeocoris (Deraeocoris) ruber</i> | Hemiptera | |
| <i>Dioctria rufipes</i> | Diptera | |
| <i>Dolichopus griseipennis</i> | Diptera | |
| <i>Dolycoris baccarum</i> | Hemiptera | |
| <i>Dorycera graminum</i> | Diptera | Provisionally Nationally Scarce; provisionally Near Threatened; Section 41 Priority Species* |
| <i>Drusilla canaliculata</i> | Coleoptera | |
| <i>Episyrphus balteatus</i> | Diptera | |
| <i>Eriothrix rufomaculata</i> | Diptera | |
| <i>Eristalis abusivus</i> | Diptera | |
| <i>Eristalis arbustorum</i> | Diptera | |
| <i>Eristalis intricarius</i> | Diptera | |
| <i>Eristalis nemorum</i> | Diptera | |
| <i>Eristalis pertinax</i> | Diptera | |
| <i>Eristalis tenax</i> | Diptera | |
| <i>Erynnis tages</i> | Lepidoptera | Section 41 Priority Species; Vulnerable |
| <i>Eumerus strigatus</i> | Diptera | |

| Scientific name | Taxonomic group | National status |
|--------------------------------------|-----------------|-----------------|
| <i>Eupeodes corollae</i> | Diptera | |
| <i>Eurydema (Eurydema) oleracea</i> | Hemiptera | |
| <i>Gonepteryx rhamni</i> | Lepidoptera | |
| <i>Grammoptera ruficornis</i> | Coleoptera | |
| <i>Haematopota pluvialis</i> | Diptera | |
| <i>Halictus tumulorum</i> | Hymenoptera | |
| <i>Halyzia sedecimguttata</i> | Coleoptera | |
| <i>Harmonia axyridis</i> | Coleoptera | |
| <i>Harpalus rubripes</i> | Coleoptera | |
| <i>Harpalus rufipes</i> | Coleoptera | |
| <i>Helophilus pendulus</i> | Diptera | |
| <i>Helophilus trivittatus</i> | Diptera | |
| <i>Herina lugubris</i> | Diptera | |
| <i>Himacerus (Aptus) mirmicoides</i> | Hemiptera | |
| <i>Hoplitis claviventris</i> | Hymenoptera | |
| <i>Hylaeus communis</i> | Hymenoptera | |
| <i>Hylaeus confusus</i> | Hymenoptera | |
| <i>Hylaeus cornutus</i> | Hymenoptera | Notable a* |
| <i>Lasioglossum albipes</i> | Hymenoptera | |
| <i>Lasioglossum fulvicorne</i> | Hymenoptera | |
| <i>Lasioglossum leucopus</i> | Hymenoptera | |

| Scientific name | Taxonomic group | National status |
|--|-----------------|-----------------|
| <i>Lasioglossum malachurum</i> | Hymenoptera | Notable b* |
| <i>Lasioglossum morio</i> | Hymenoptera | |
| <i>Lasioglossum parvulum</i> | Hymenoptera | |
| <i>Lasioglossum villosulum</i> | Hymenoptera | |
| <i>Lasioglossum zonulum</i> | Hymenoptera | |
| <i>Lasius flavus</i> | Hymenoptera | |
| <i>Legnotus limbosus</i> | Hemiptera | |
| <i>Leptarthrus brevirostris</i> | Diptera | |
| <i>Leptogaster cylindrica</i> | Diptera | |
| <i>Leptophyes punctatissima</i> | Orthoptera | |
| <i>Leptopterna dolabrata</i> | Hemiptera | |
| <i>Limnia unguicornis</i> | Diptera | |
| <i>Longitarsus flavicornis</i> | Coleoptera | |
| <i>Longitarsus succineus</i> | Coleoptera | |
| <i>Lucilia caesar</i> | Diptera | |
| <i>Machimus atricapillus</i> | Diptera | |
| <i>Machimus atricapillus</i> | Diptera | |
| <i>Machimus cingulatus</i> | Diptera | |
| <i>Malachius bipustulatus</i> | Coleoptera | |
| <i>Maniola jurtina</i> | Lepidoptera | |

| Scientific name | Taxonomic group | National status |
|---------------------------------|-----------------|-------------------|
| <i>Meconema thalassinum</i> | Orthoptera | |
| <i>Megachile versicolor</i> | Hymenoptera | |
| <i>Megaloceroea recticornis</i> | Hemiptera | |
| <i>Megalonotus chiragra</i> | Hemiptera | |
| <i>Megalonotus sabulicola</i> | Hemiptera | Notable b |
| <i>Melanargia galathea</i> | Lepidoptera | |
| <i>Melanostoma mellinum</i> | Diptera | |
| <i>Melanostoma scalare</i> | Diptera | |
| <i>Meligethes aeneus</i> | Coleoptera | |
| <i>Melinda gentilis</i> | Diptera | |
| <i>Meliscaeva auricollis</i> | Diptera | |
| <i>Melitta leporina</i> | Hymenoptera | |
| <i>Merodon equestris</i> | Diptera | |
| <i>Mesembrina meridiana</i> | Diptera | |
| <i>Metopia argyrocephala</i> | Diptera | |
| <i>Minettia longipennis</i> | Diptera | |
| <i>Miridius quadrivirgatus</i> | Hemiptera | |
| <i>Mordellistena parvula</i> | Coleoptera | Nationally Scarce |
| <i>Musca autumnalis</i> | Diptera | |
| <i>Myathropa florea</i> | Diptera | |
| <i>Myopa pellucida</i> | Diptera | Red Data Book 3 |
| <i>Myrmus miriformis</i> | Hemiptera | |

| Scientific name | Taxonomic group | National status |
|---|-----------------|------------------|
| <i>Nedyus quadrimaculatus</i> | Coleoptera | |
| <i>Nemopoda nitidula</i> | Diptera | |
| <i>Nemotelus pantherinus</i> | Diptera | |
| <i>Neomyia viridescens</i> | Diptera | |
| <i>Nephrotoma flavescens</i> | Diptera | |
| <i>Nomada fabriciana</i> | Hymenoptera | |
| <i>Nomada flavoguttata</i> | Hymenoptera | |
| <i>Nomada fucata</i> | Hymenoptera | Notable a* |
| <i>Nomada goodeniana</i> | Hymenoptera | |
| <i>Nomada lathburiana</i> | Hymenoptera | Red Data Book 3* |
| <i>Nomada marshamella</i> | Hymenoptera | |
| <i>Nomada panzeri sensu lato</i> | Hymenoptera | |
| <i>Nomada sheppardana</i> | Hymenoptera | |
| <i>Nomada striata</i> | Hymenoptera | |
| <i>Nowickia ferox</i> | Diptera | |
| <i>Oedemera lurida</i> | Coleoptera | |
| <i>Oedemera nobilis</i> | Coleoptera | |
| <i>Olibrus liquidus</i> | Coleoptera | |
| <i>Onthophagus coenobita</i> | Coleoptera | |
| <i>Onthophagus joannae</i> | Coleoptera | |
| <i>Opomyza florum</i> | Diptera | |
| <i>Othius laeviusculus</i> | Coleoptera | |

| Scientific name | Taxonomic group | National status |
|-------------------------------|-----------------|-----------------|
| <i>Otiorhynchus ligneus</i> | Coleoptera | |
| <i>Oulema melanopus s.l.</i> | Coleoptera | |
| <i>Pachygaster atra</i> | Diptera | |
| <i>Pachygaster leachii</i> | Diptera | |
| <i>Palomena prasina</i> | Hemiptera | |
| <i>Panorpa communis</i> | Mecoptera | |
| <i>Pararge aegeria</i> | Lepidoptera | |
| <i>Passaloecus corniger</i> | Hymenoptera | |
| <i>Pemphredon lethifer</i> | Hymenoptera | |
| <i>Pentatoma rufipes</i> | Hemiptera | |
| <i>Peritrechus lundii</i> | Hemiptera | |
| <i>Phania funesta</i> | Diptera | |
| <i>Phasia hemiptera</i> | Diptera | |
| <i>Phasia obesa</i> | Diptera | |
| <i>Phasia pusilla</i> | Diptera | |
| <i>Pherbellia cinerella</i> | Diptera | |
| <i>Philophylla caesio</i> | Diptera | |
| <i>Phyllobius pomaceus</i> | Coleoptera | |
| <i>Phyllobius roboretanus</i> | Coleoptera | |
| <i>Phyllopertha horticola</i> | Coleoptera | |
| <i>Physocephala rufipes</i> | Diptera | |
| <i>Pieris brassicae</i> | Lepidoptera | |
| <i>Pieris rapae</i> | Lepidoptera | |
| <i>Pipizella viduata</i> | Diptera | |

| Scientific name | Taxonomic group | National status |
|---|-----------------|---|
| <i>Plagiognathus (Plagiognathus) arbustorum</i> | Hemiptera | |
| <i>Platycheirus albimanus</i> | Diptera | |
| <i>Platydracus stercorarius</i> | Coleoptera | |
| <i>Platystoma seminationis</i> | Diptera | |
| <i>Podops inuncta</i> | Hemiptera | |
| <i>Poecilobothrus nobilitatus</i> | Diptera | |
| <i>Pollenia amentaria</i> | Diptera | |
| <i>Pollenia rudis</i> | Diptera | |
| <i>Polygonia c-album</i> | Lepidoptera | |
| <i>Polyommatus icarus</i> | Lepidoptera | |
| <i>Propylea quattuordecimpunctata</i> | Coleoptera | |
| <i>Protapion apricans</i> | Coleoptera | |
| <i>Pseudomalus auratus</i> | Hymenoptera | |
| <i>Pseudospinolia neglecta</i> | Hymenoptera | |
| <i>Pterostichus madidus</i> | Coleoptera | |
| <i>Pyrgus malvae</i> | Lepidoptera | Section 41 Priority Species; Vulnerable |
| <i>Pyrochroa serraticornis</i> | Coleoptera | |
| <i>Pyronia tithonus</i> | Lepidoptera | |
| <i>Quedius semiobscurus</i> | Coleoptera | |

| Scientific name | Taxonomic group | National status |
|----------------------------------|-----------------|------------------|
| <i>Rhagonycha fulva</i> | Coleoptera | |
| <i>Rhingia campestris</i> | Diptera | |
| <i>Rhyzobius litura</i> | Coleoptera | |
| <i>Roeseliana roeselii</i> | Orthoptera | |
| <i>Rutpela maculata</i> | Coleoptera | |
| <i>Sarcophaga anaces</i> | Diptera | |
| <i>Sarcophaga filia</i> | Diptera | |
| <i>Sarcophaga pumila</i> | Diptera | |
| <i>Sarcophaga variegata</i> | Diptera | |
| <i>Scaeva pyrastris</i> | Diptera | |
| <i>Sepsis fulgens</i> | Diptera | |
| <i>Sicus ferrugineus</i> | Diptera | |
| <i>Siphona geniculata</i> | Diptera | |
| <i>Sitona lineatus</i> | Coleoptera | |
| <i>Sphaeridium scarabaeoides</i> | Coleoptera | |
| <i>Sphaerophoria scripta</i> | Diptera | |
| <i>Sphecodes ephippius</i> | Hymenoptera | |
| <i>Sphecodes geoffrellus</i> | Hymenoptera | |
| <i>Sphecodes spinulosus</i> | Hymenoptera | Red Data Book 2* |
| <i>Sphenella marginata</i> | Diptera | |
| <i>Stenocorus meridianus</i> | Coleoptera | |
| <i>Stenus ossium</i> | Coleoptera | |
| <i>Stenus picipes</i> | Coleoptera | |

| Scientific name | Taxonomic group | National status |
|--|-----------------|-----------------|
| <i>Stictopleurus punctatonervosus</i> | Hemiptera | |
| <i>Stratiomys singularior</i> | Diptera | |
| <i>Syntomus obscuroguttatus</i> | Coleoptera | |
| <i>Syritta pipiens</i> | Diptera | |
| <i>Tabanus bromius</i> | Diptera | |
| <i>Tachina fera</i> | Diptera | |
| <i>Tachyporus hypnorum</i> | Coleoptera | |
| <i>Tephritis formosa</i> | Diptera | |
| <i>Tephritis hyoscyami</i> | Diptera | |
| <i>Tephritis neesii</i> | Diptera | |
| <i>Terellia serratulae</i> | Diptera | |
| <i>Tetrops praeustus</i> | Coleoptera | |
| <i>Thereva plebeja</i> | Diptera | |
| <i>Thymelicus sylvestris</i> | Lepidoptera | |
| <i>Tipula vernalis</i> | Diptera | |
| <i>Trachyphloeus alternans</i> | Coleoptera | Notable b |
| <i>Trichrysis cyanea</i> | Hymenoptera | |
| <i>Trypoxylon attenuatum</i> | Hymenoptera | |
| <i>Tyria jacobaeae</i> | Lepidoptera | |
| <i>Urophora stylata</i> | Diptera | |
| <i>Vanessa atalanta</i> | Lepidoptera | |
| <i>Vanessa cardui</i> | Lepidoptera | |
| <i>Vespa crabro</i> | Hymenoptera | |

| Scientific name | Taxonomic group | National status |
|------------------------------------|-----------------|-----------------|
| <i>Volucella inflata</i> | Diptera | |
| <i>Volucella pellucens</i> | Diptera | |
| <i>Volucella zonaria</i> | Diptera | |
| <i>Xanthogramma citrofasciatum</i> | Diptera | |
| <i>Xantholinus longiventris</i> | Coleoptera | |
| <i>Xylota segnis</i> | Diptera | |
| <i>Xyphosia miliaria</i> | Diptera | |

*Widely accepted as being much more common than this status suggests; likely to be downgraded.

Sullington Hill LWS result

Only species with a national status have been annotated. All others are common or local species.

| Scientific name | Taxonomic group | National status |
|--------------------------------|-----------------|-----------------------------|
| <i>Adscita statices</i> | Lepidoptera | Section 41 Priority Species |
| <i>Aglais io</i> | Lepidoptera | |
| <i>Aglais urticae</i> | Lepidoptera | |
| <i>Agrypnus murinus</i> | Coleoptera | |
| <i>Aleochara bipustulata</i> | Coleoptera | |
| <i>Aleochara lanuginosa</i> | Coleoptera | |
| <i>Amara aenea</i> | Coleoptera | |
| <i>Amara montivaga</i> | Coleoptera | Nationally Scarce |
| <i>Amara plebeja</i> | Coleoptera | |
| <i>Anaceratagallia ribauti</i> | Hemiptera | |
| <i>Andrena dorsata</i> | Hymenoptera | |
| <i>Andrena flavipes</i> | Hymenoptera | |

| Scientific name | Taxonomic group | National status |
|--------------------------------|-----------------|---|
| <i>Andrena haemorrhoa</i> | Hymenoptera | |
| <i>Andrena minutuloides</i> | Hymenoptera | Notable a* |
| <i>Andrena nigroaenea</i> | Hymenoptera | |
| <i>Andrena rosae</i> | Hymenoptera | Red Data Book 2 |
| <i>Andrena wilkella</i> | Hymenoptera | |
| <i>Anomoia purmunda</i> | Diptera | |
| <i>Aphodius ater</i> | Coleoptera | |
| <i>Aphodius fossor</i> | Coleoptera | |
| <i>Aphodius pedellus</i> | Coleoptera | |
| <i>Aphodius pusillus</i> | Coleoptera | |
| <i>Athous haemorrhoidalis</i> | Coleoptera | |
| <i>Autographa gamma</i> | Lepidoptera | |
| <i>Barypeithes pellucidus</i> | Coleoptera | |
| <i>Bibio marci</i> | Diptera | |
| <i>Bithia spreta</i> | Diptera | |
| <i>Blaesoxipha plumicornis</i> | Diptera | Provisionally Nationally Scarce; provisionally Near Threatened* |
| <i>Bombus lapidarius</i> | Hymenoptera | |
| <i>Bombus pascuorum</i> | Hymenoptera | |
| <i>Calathus fuscipes</i> | Coleoptera | |
| <i>Camarota curvipennis</i> | Diptera | |
| <i>Cantharis decipiens</i> | Coleoptera | |
| <i>Carabus violaceus</i> | Coleoptera | |
| <i>Cassida prasina</i> | Coleoptera | Nationally Scarce |
| <i>Catharosia pygmaea</i> | Diptera | |

| Scientific name | Taxonomic group | National status |
|----------------------------------|-----------------|--|
| <i>Chaetocnema hortensis</i> | Coleoptera | |
| <i>Chloromyia formosa</i> | Diptera | |
| <i>Chorthippus brunneus</i> | Orthoptera | |
| <i>Chorthippus parallelus</i> | Orthoptera | |
| <i>Coccinella septempunctata</i> | Coleoptera | |
| <i>Coenonympha pamphilus</i> | Lepidoptera | Near Threatened; Section 41 Priority Species |
| <i>Cryptocephalus bilineatus</i> | Coleoptera | Nationally Scarce |
| <i>Dioctria baumhaueri</i> | Diptera | |
| <i>Dolichopus griseipennis</i> | Diptera | |
| <i>Dolichopus unguatus</i> | Diptera | |
| <i>Dolycoris baccarum</i> | Hemiptera | |
| <i>Drusilla canaliculata</i> | Coleoptera | |
| <i>Ectemnius continuus</i> | Hymenoptera | |
| <i>Ectemnius lituratus</i> | Hymenoptera | |
| <i>Empis tessellata</i> | Diptera | |
| <i>Episyrphus balteatus</i> | Diptera | |
| <i>Epuraea aestiva</i> | Coleoptera | |
| <i>Eriothrix rufomaculata</i> | Diptera | |
| <i>Eristalis arbustorum</i> | Diptera | |
| <i>Eristalis pertinax</i> | Diptera | |
| <i>Erynnis tages</i> | Lepidoptera | Section 41 Priority Species; Vulnerable |
| <i>Euheptaulacus villosus</i> | Coleoptera | Nationally Scarce |

| Scientific name | Taxonomic group | National status |
|---------------------------------|-----------------|--|
| <i>Eupeodes latifasciatus</i> | Diptera | |
| <i>Galeruca tanacetii</i> | Coleoptera | |
| <i>Geomyza tripunctata</i> | Diptera | |
| <i>Glomeris marginata</i> | Glomerida | |
| <i>Gonepteryx rhamni</i> | Lepidoptera | |
| <i>Gonocerus acuteangulatus</i> | Hemiptera | |
| <i>Grammoptera ruficornis</i> | Coleoptera | |
| <i>Halictus tumulorum</i> | Hymenoptera | |
| <i>Helophilus pendulus</i> | Diptera | |
| <i>Helophilus trivittatus</i> | Diptera | |
| <i>Herina lugubris</i> | Diptera | |
| <i>Herina nigrina</i> | Diptera | |
| <i>Hesperia comma</i> | Lepidoptera | Legal Protection; Nationally Scarce; Near Threatened |
| <i>Hoplitis claviventris</i> | Hymenoptera | |
| <i>Hylaeus dilatatus</i> | Hymenoptera | Red Data Book 3* |
| <i>Hylaeus hyalinatus</i> | Hymenoptera | |
| <i>Hypera plantaginis</i> | Coleoptera | |
| <i>Kalama tricornis</i> | Hemiptera | |
| <i>Lasiocampa quercus</i> | Lepidoptera | |
| <i>Lasioglossum albipes</i> | Hymenoptera | |
| <i>Lasioglossum calceatum</i> | Hymenoptera | |
| <i>Lasioglossum leucopus</i> | Hymenoptera | |

| Scientific name | Taxonomic group | National status |
|----------------------------------|-----------------|-----------------|
| <i>Lasioglossum malachurum</i> | Hymenoptera | Notable b* |
| <i>Lasioglossum morio</i> | Hymenoptera | |
| <i>Lasioglossum pauxillum</i> | Hymenoptera | Notable a* |
| <i>Lasioglossum villosulum</i> | Hymenoptera | |
| <i>Lasius flavus</i> | Hymenoptera | |
| <i>Leptarthrus brevisrostris</i> | Diptera | |
| <i>Linnaemya picta</i> | Diptera | |
| <i>Lycaena phlaeas</i> | Lepidoptera | |
| <i>Lydina aenea</i> | Diptera | |
| <i>Machimus atricapillus</i> | Diptera | |
| <i>Machimus cingulatus</i> | Diptera | |
| <i>Maniola jurtina</i> | Lepidoptera | |
| <i>Mecinus pyraister</i> | Coleoptera | |
| <i>Melanargia galathea</i> | Lepidoptera | |
| <i>Melanostoma mellinum</i> | Diptera | |
| <i>Melanostoma scalare</i> | Diptera | |
| <i>Meligethes aeneus</i> | Coleoptera | |
| <i>Melitta haemorrhoidalis</i> | Hymenoptera | |
| <i>Melitta leporina</i> | Hymenoptera | |
| <i>Microchrysa cyaneiventris</i> | Diptera | |
| <i>Minettia longipennis</i> | Diptera | |
| <i>Musca autumnalis</i> | Diptera | |

| Scientific name | Taxonomic group | National status |
|---------------------------------|-----------------|-----------------------|
| <i>Neliocarus faber</i> | Coleoptera | Notable b*; Notable b |
| <i>Neomyia viridescens</i> | Diptera | |
| <i>Nephrotoma appendiculata</i> | Diptera | |
| <i>Nephrotoma flavescens</i> | Diptera | |
| <i>Nomada flava</i> | Hymenoptera | |
| <i>Nomada flavoguttata</i> | Hymenoptera | |
| <i>Nomada goodeniana</i> | Hymenoptera | |
| <i>Nomada lathburiana</i> | Hymenoptera | Red Data Book 3* |
| <i>Nomada marshamella</i> | Hymenoptera | |
| <i>Nowickia ferox</i> | Diptera | |
| <i>Nyctia halterata</i> | Diptera | |
| <i>Ocypus aeneocephalus</i> | Coleoptera | |
| <i>Onthophagus joannae</i> | Coleoptera | |
| <i>Onthophagus similis</i> | Coleoptera | |
| <i>Opomyza germinationis</i> | Diptera | |
| <i>Oulema melanopus</i> | Coleoptera | |
| <i>Pachygaster atra</i> | Diptera | |
| <i>Pemphredon inornata</i> | Hymenoptera | |
| <i>Phania funesta</i> | Diptera | |
| <i>Phasia obesa</i> | Diptera | |
| <i>Pherbellia cinerella</i> | Diptera | |
| <i>Philonthus carbonarius</i> | Coleoptera | |

| Scientific name | Taxonomic group | National status |
|--|-----------------|---|
| <i>Philophylla caesio</i> | Diptera | |
| <i>Pholidoptera griseoptera</i> | Orthoptera | |
| <i>Phyllobius pyri</i> | Coleoptera | |
| <i>Phyllobius virideaeris</i> | Coleoptera | |
| <i>Phytocoris (Ktenocoris) varipes</i> | Hemiptera | |
| <i>Pieris napi</i> | Lepidoptera | |
| <i>Podops inuncta</i> | Hemiptera | |
| <i>Pollenia rudis</i> | Diptera | |
| <i>Polyommatus icarus</i> | Lepidoptera | |
| <i>Propylea quattuordecimpunctata</i> | Coleoptera | |
| <i>Pterostichus madidus</i> | Coleoptera | |
| <i>Pyrgus malvae</i> | Lepidoptera | Section 41 Priority Species; Vulnerable |
| <i>Pyronia tithonus</i> | Lepidoptera | |
| <i>Rhagonycha fulva</i> | Coleoptera | |
| <i>Rhinoncus leucostigma</i> | Coleoptera | |
| <i>Rhinophora lepida</i> | Diptera | |
| <i>Roeseliana roeselii</i> | Orthoptera | |
| <i>Sarcophaga anaces</i> | Diptera | |
| <i>Sarcophaga carnaria</i> | Diptera | |
| <i>Sarcophaga depressifrons</i> | Diptera | |
| <i>Sarcophaga incisilobata</i> | Diptera | |

| Scientific name | Taxonomic group | National status |
|--------------------------------|-----------------|-----------------|
| <i>Sarcophaga pumila</i> | Diptera | |
| <i>Scaeva selenitica</i> | Diptera | |
| <i>Sepsis cynipsea</i> | Diptera | |
| <i>Siphona geniculata</i> | Diptera | |
| <i>Sitona lineatus</i> | Coleoptera | |
| <i>Speyeria aglaja</i> | Lepidoptera | |
| <i>Sphaeroderma rubidum</i> | Coleoptera | |
| <i>Sphaerophoria scripta</i> | Diptera | |
| <i>Sphecodes geoffrellus</i> | Hymenoptera | |
| <i>Stenobothrus lineatus</i> | Orthoptera | |
| <i>Syntomus foveatus</i> | Coleoptera | |
| <i>Syritta pipiens</i> | Diptera | |
| <i>Tabanus bromius</i> | Diptera | |
| <i>Tachyporus hypnorum</i> | Coleoptera | |
| <i>Tephritis hyoscyami</i> | Diptera | |
| <i>Thecophora atra</i> | Diptera | |
| <i>Thereva plebeja</i> | Diptera | |
| <i>Trypoxylon attenuatum</i> | Hymenoptera | |
| <i>Urophora quadrifasciata</i> | Diptera | |
| <i>Vanessa atalanta</i> | Lepidoptera | |
| <i>Vanessa cardui</i> | Lepidoptera | |
| <i>Vespula germanica</i> | Hymenoptera | |
| <i>Xantholinus linearis</i> | Coleoptera | |

*Widely accepted as being much more common than this status suggests; likely to be downgraded.

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Annex C

Survey conditions

Table C-1 – Sullington Hill LWS dates of survey visits and weather conditions

| Visit no. | Date | Temperature (°C) | | Rain | Cloud cover (Oktas) | Ground moisture | Wind strength |
|-----------|------------|------------------|------|------|---------------------|-----------------|---------------|
| | | Min | Max | | | | |
| 1 | 26/05/2021 | 20.0 | 20.0 | None | 5/8 | Dry | Moderate |
| 2 | 24/06/2021 | 20.0 | 22.0 | None | 1/8 | Dry | Calm |
| 3 | 14/07/2021 | 25.0 | 26.0 | None | 0/8 | Dry | Calm |
| 4 | 11/08/2021 | 22.0 | 22.0 | None | 0/8 | Dry | Calm |
| 5 | 16/09/2021 | 18.0 | 21.0 | None | 2/8 | Dry | Calm |

Rain: None, light, occasional shower, rain. **Wind strength:** Calm - <3mph, Light- 4-12mph, Moderate -13-24mph, Strong - 25-31mph, Very strong - 32+ mph.

Table C-2 – Warningcamp Hill and New Down LWS dates of survey visits and weather conditions

| Visit no. | Date | Temperature (°C) | | Rain | Cloud cover (Oktas) | Ground moisture | Wind strength |
|-----------|------------|------------------|------|------|---------------------|-----------------|---------------|
| | | Min | Max | | | | |
| 1 | 26/05/2021 | 18.0 | 20.0 | None | 5/8 | Dry | Moderate |
| 2 | 24/06/2021 | 19.0 | 20.0 | None | 1/8 | Dry | Calm |
| 3 | 14/07/2021 | 22.0 | 24.0 | None | 0/8 | Dry | Calm |
| 4 | 11/08/2021 | 17.0 | 21.0 | None | 0/8 | Dry | Calm |
| 5 | 16/09/2021 | 18.0 | 21.0 | None | 2/8 | Dry | Calm |

Rain: None, light, occasional shower, rain. **Wind strength:** Calm - <3mph, Light- 4-12mph, Moderate -13-24mph, Strong - 25-31mph, Very strong - 32+ mph



4.22.12



Volume 4, Appendix 22.12

Reptile survey



Contents

| | | |
|------------|---|-----------|
| 1. | Introduction | 4 |
| 1.1 | Background | 4 |
| 1.2 | Legislation | 4 |
| 1.3 | Structure of this Appendix | 4 |
| 2. | Methods | 6 |
| 2.1 | Defining survey scope | 6 |
| 2.2 | Desk study | 6 |
| 2.3 | Field surveys | 7 |
| | Habitat scoping and refugia deployment | 7 |
| | Reptile presence / absence survey | 8 |
| | Weather conditions | 9 |
| 3. | Results | 10 |
| 3.2 | Incidental records | 12 |
| 3.3 | Survey limitations | 13 |
| 4. | Summary | 14 |
| 5. | References | 15 |

| | | |
|-----------|---|---|
| Table 2-1 | Title here | 6 |
| Table 2-2 | Survey area descriptions and detail of refugia deployed | 8 |

| | |
|--|----|
| Table 3-1 Title here | 10 |
| Table 3-2 North and South Survey Areas desk study results to 2km | 10 |
| Table 3-3 North Survey Area reptile survey results | 11 |
| Table 3-4 South Survey Area reptile survey results | 12 |
| Table 3-5 Incidental records | 12 |

| | |
|----------------------------|--|
| Annex A Figures | |
| Annex B Weather conditions | |

CONFIDENTIAL

1. Introduction

1.1 Background

- 1.1.1 This Appendix should be read in conjunction with **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the Environmental Statement (ES) which is provided in support of the delivery of an Environmental Impact Assessment (EIA) associated with the Rampion 2 Offshore Wind Farm, hereafter referred to as the “*Proposed Development*” or “*Rampion 2*”.
- 1.1.2 This Appendix describes the survey method and summarises the results of a reptile survey undertaken in 2021.

1.2 Legislation

- 1.2.1 Four-widespread species of reptile that are native to Britain, namely viviparous lizard (*Zootoca vivipara*), slow worm (*Anguis fragilis*), adder (*Vipera berus*) and grass snake (*Natrix natrix*), are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are afforded limited protection under Section 9 of this Act. This makes it an offence, inter alia, to:
- Intentionally kill or injure any of these species.
- 1.2.2 In addition, the rarer reptile species of smooth snake (*Coronella austriaca*) and sand lizard (*Lacerta agilis*) are designated and protected as European Protected Species (EPS). EPS are protected under The Conservation of Habitats and Species Regulations 2017, which makes it an offence to:
- deliberately kill, injure, disturb or capture them;
 - deliberately take or destroy their eggs;
 - damage or destroy their breeding sites and resting places; or
 - possess, control or transport them (alive or dead).

1.3 Structure of this Appendix

- 1.3.1 This Appendix is structured as follows:
- **Section 2: Methods;**
 - **Section 3: Results;**
 - **Section 4: Summary;**
 - **Section 5: Glossary of terms and abbreviations;**
 - **Section 6: References;**
 - **Annex A: Figures; and**

- **Annex B: Survey weather conditions.**

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2. Methods

2.1 Defining survey scope

2.1.1 The methods to establish a baseline for reptiles comprised the following:

- desk study of reptile records;
- field based scoping of suitable reptile habitat, refugia deployment; and
- reptile presence / absence survey.

2.1.2 In line with good practice guidelines (Froglife, 1999), reptile surveys focused on those areas where reptiles could be significantly affected by the Proposed Development, or for which the Proposed Development could result in the contravention of relevant legislation, and that therefore required more detailed assessment.

2.1.3 The areas where reptiles could be significantly affected are at the locations of permanent above ground infrastructure namely the proposed substation at Oakendene and the connection to the National Grid at Bolney Substation. These areas are referred to in this appendix as the North and South Survey Areas respectively.

2.2 Desk study

2.2.1 To inform the reptile survey, a desk study was undertaken to aid survey design (see [Appendix 22.2: Terrestrial ecology desk study, Volume 4](#)). The desk study requested all reptile records held by Sussex Biological Records Centre (SxBRC) up to 5km from the proposed Development Consent Order (DCO) Order Limits as defined in [Chapter 4: Proposed Development, Volume 2](#).

Table 2-1 Records of reptiles returned by SxBRC

| Species | No. of records | Number of individuals recorded | Date of most recent record | Distance and direction of nearest record to the proposed DCO Order Limits |
|-------------------|----------------|--------------------------------|----------------------------|---|
| Grass snake | 113 | 154 | 13 September 2022 | 0.3km west |
| Adder | 61 | 99 | 26 September 2022 | 0.4km north |
| Viviparous Lizard | 135 | 310 | 18 August 2022 | 0.1km north |
| Slow worm | 224 | 821 | 19 October 2022 | 0.1km east |

| Species | No. of records | Number of individuals recorded | Date of most recent record | Distance and direction of nearest record to the proposed DCO Order Limits |
|-------------|----------------|--------------------------------|----------------------------|---|
| Sand Lizard | 4 | 4 | 18 April 2019 | 0.1km northwest |

2.3 Field surveys

Habitat scoping and refugia deployment

2.3.1 Within this Appendix, the following areas are referred to:

- ‘North Survey Area’ represents the onshore substation location at Oakendene. This area comprises mostly arable fields with suitable reptile habitat predominantly located along the rough grassland margins between fields.
- ‘South Survey Area’ represents the connection point to the existing National Grid Bolney substation. The area surveyed was the habitat most suitable for reptiles in the vicinity of the connection works.

2.3.2 These areas are shown in **Figure 1.1 (Annex A)**.

2.3.3 Reptile surveys were not conducted in areas along the cable route as the extent of temporary habitat loss (at a given point) is such that the risk to reptiles can be effectively managed (see **Outline Code of Construction Practice [document ref]**).

2.3.4 Habitat suitable to support reptiles within the North Survey Area and South Survey Area comprised of rough grassland, scrub and tall ruderal vegetation connected by a matrix of ditches / waterways and hedgerows (**Table 2-1**).

2.3.5 An initial site visit was undertaken by an experienced ecologist on 18 August 2021 in the South Survey Area and 26 August 2021 in the North Survey Area to determine best access routes and the most suitable locations for deploying artificial refugia.

2.3.6 Artificial refugia of two types were deployed in late August 2021 comprising of bitumen felt, or “*felts*”, measuring 500mm x 1,000mm and corrugated metal sheets, or “*tins*”, measuring 500mm x 1,000mm. As per the guidance (Froglife, 2015), a combination of both refugia types is used due to their use by reptiles at different temperature ranges.

2.3.7 A total of 147 artificial refugia (comprised of 110 felts and 37 tins) were set out in the South Survey Area within all areas of suitable reptile habitat. A total of 42 artificial refugia (22 felts and 20 tins) were set out in the North Survey Area within all areas of suitable reptile habitat (see **Figure 2.2, Annex A** for locations of felt and tin deployment).

- 2.3.8 The two survey areas, and details of refugia deployment in each, are described in **Table 2-2**. As indicated, the density of refugia deployment exceeded the minimum recommended density of 5-10 refugia per hectare (Froglife, 2015), thereby maximising the opportunity to detect reptiles.

Table 2-2 Survey area descriptions and detail of refugia deployed

| Survey Area | Description of Survey Area | Total refugia deployed | Average number of refugia per hectare (ha) |
|--------------|---|------------------------|--|
| North | Approximately 3.5ha of poor semi-improved and improved grassland, scattered mature broadleaved trees and hedgerows bordered by arable, dense continuous scrub, broadleaved woodland, waterbodies and streams. | 22 felts and 20 tins | 12 |
| South | Approximately 9.8ha of bare ground, tall ruderal, semi-improved and improved grassland with scattered and dense scrub bordered by broadleaved woodland, hedgerows and waterbodies. | 110 felts and 37 tins | 15 |

Reptile presence / absence survey

- 2.3.9 After allowing two weeks for the refugia to “*bed-in*” in suitable habitat that could be utilised by reptiles for commuting, basking, sheltering, breeding and hibernating, seven survey visits were undertaken in appropriate weather conditions between 6 September and 21 October (see **Annex B**). Seven survey visits are considered optimal for determining presence / likely absence of reptiles only, but not determining population size or the distribution of each species (Froglife, 2015).
- 2.3.10 In accordance with good practice methodology (Froglife, 2015), the reptile survey included a combination of inspections on top of and below the artificial refugia which are designed to entice reptiles out to bask and shelter, searches of any existing refugia (such as log piles) and visual searches of other suitable basking sites. All survey visits were undertaken in September and October 2021 (see **Table 3-1** for dates of survey visits) due to limited access (see **Section 3.3 Survey limitations**). All species, their age, gender and numbers were recorded on every survey visit.

Weather conditions

- 2.3.11 Reptile activity is highly dependent on the weather, as reptiles must bask in order to warm themselves and become active. April, May and September are key months for basking reptiles, as more continuous mid-summer heat means reptiles require less basking time to become active, however successful surveys may still be carried out from June to August and in October if weather conditions are suitable.
- 2.3.12 The influence of weather on reptile detection is complex and may vary depending on the target species (e.g. different species have different optimal body temperatures), the time of year (whether early or late in the survey season), the prevailing weather conditions in the weeks prior to the survey, and the geographic location in which the survey is being carried out (e.g. which region of the UK). In general, guidance suggests that reptile surveys should ideally be conducted on warm, dry days with intermittent sunshine; particularly after a spell of cooler or wetter weather. Various publications suggest optimal temperatures for detecting reptiles, with the figures quoted ranging between 9°C to 20°C (Froglife, 1999, Griffiths and Inns, 1998, Froglife, 2015) although the Joint Nature Conservation Committee (JNCC) recommend a minimum of 15°C (JNCC, 2004).
- 2.3.13 Outside of these conditions weather may still be suitable for surveying (e.g. surveys during light summer showers interspersed with sunny spells can be very productive). As such, while survey visits were conducted as far as was practically possible in optimum conditions, an element of professional judgement was applied by the experienced surveyor leading the survey work as to what constituted suitable conditions.

3. Results

- 3.1.1 The desk study returned 537 records of reptiles within 5km of the proposed DCO Order Limits. These are summarised in **Table 3-1**.

Table 3-1 Records of reptiles returned by SxBRC

| Species | No. of records | Number of individuals recorded | Date of most recent record | Distance and direction of nearest record to the proposed DCO Order Limits |
|-------------------|----------------|--------------------------------|----------------------------|---|
| Grass snake | 113 | 154 | 13 September 2022 | 0.3km west |
| Adder | 61 | 99 | 26 September 2022 | 0.4km north |
| Viviparous Lizard | 135 | 310 | 18 August 2022 | 0.1km north |
| Slow worm | 224 | 821 | 19 October 2022 | 0.1km east |
| Sand Lizard | 4 | 4 | 18 April 2019 | 0.1km northwest |

- 3.1.2 A subset of these for the North Survey Area and South Survey Area to 2km are shown below in **Table 3-2** and in **Figure 2.1 (Annex A)**.
- 3.1.3 A total of eight records were provided by SxBRC within 2km of the Survey Areas, four records of slow worm, three of grass snake and a single record of viviparous lizard.

Table 3-2 North and South Survey Areas desk study results to 2km

| Species | No. of records | Date range of records | Distance and direction of nearest record to the North Survey Area | Distance and direction of nearest record to the South Survey Area |
|-------------|----------------|-----------------------|---|---|
| Grass snake | 3 | 2014-2017 | No records within 2km | 0.9km south |
| Slow worm | 4 | 2019-2022 | 1.4km west | 1.9km south |

| Species | No. of records | Date range of records | Distance and direction of nearest record to the North Survey Area | Distance and direction of nearest record to the South Survey Area |
|-------------------|----------------|-----------------------|---|---|
| Viviparous lizard | 1 | 2015 | No records within 2km | 1.8km southeast |

- 3.1.4 The reptile presence / absence survey was conducted between 6 September 2021 and 21 October 2021.
- 3.1.5 Two species of reptile including grass snake and slow worm were recorded, with no observations of viviparous lizard or adder on any of the survey visits at either Survey Area.
- 3.1.6 Results of the seven visits at the North Survey Area are shown in **Table 3-3** and **Figure 3.1, Annex A**. The results for the South Survey Area are shown in **Table 3-4** and **Figure 3.1, Annex A**. The weather conditions during each survey visit are provided in **Annex B**.

Table 3-3 North Survey Area reptile survey results

| Visit number | Date | Reptiles recorded | | Total count adult reptiles | |
|--------------|-------------------|---------------------------|------------------------|----------------------------|-------------|
| | | Slow worm | Grass snake | Slow worm | Grass snake |
| 1 | 10 September 2021 | 5 (4 female, 1 male) | 0 | 5 | 0 |
| 2 | 16 September 2021 | 3 (1 female, 2 subadults) | 1 (female) | 1 | 1 |
| 3 | 20 September 2021 | 0 | 2 (1 male, 1 subadult) | 0 | 1 |
| 4 | 22 September 2021 | 1 (male) | 1 (male), | 1 | 1 |
| 5 | 24 September 2021 | 0 | 1 (male) | 0 | 1 |
| 6 | 18 October 2021 | 1 (female) | 0 | 1 | 0 |
| 7 | 21 October 2021 | No reptiles recorded | | 0 | |

Table 3-4 South Survey Area reptile survey results

| Visit number | Date | Reptiles recorded | | Total count adult reptiles | |
|--------------|-------------------|----------------------|--------------|----------------------------|-------------|
| | | Slow worm | Grass snake | Slow worm | Grass snake |
| 1 | 06 September 2021 | 0 | 1 (juvenile) | 0 | 0 |
| 2 | 10 September 2021 | No reptiles recorded | | 0 | |
| 3 | 16 September 2021 | No reptiles recorded | | 0 | |
| 4 | 20 September 2021 | No reptiles recorded | | 0 | |
| 5 | 22 September 2021 | No reptiles recorded | | 0 | |
| 6 | 24 September 2021 | No reptiles recorded | | 0 | |
| 7 | 21 October 2021 | No reptiles recorded | | 0 | |

3.2 Incidental records

3.2.1 In addition to the formal survey results (see **Section 3.1**), incidental sightings were also recorded by surveyors while conducting other ecological surveys within the proposed DCO Order Limits and surrounding 100m buffer. These findings are presented in **Table 3-5**.

Table 3-5 Incidental records

| Species | Date | Grid reference | Distance and direction of nearest incidental record to the proposed DCO Order Limits |
|--------------------------|-------------------|----------------|--|
| Viviparous lizard | 04 September 2021 | TQ0899611068 | Within proposed DCO Order Limits |
| Viviparous lizard | 07 August 2020 | TQ0135402590 | <0.1km west |
| Slow worm | 26 October 2021 | TQ0169603298 | <0.1km west |
| Grass snake | 22 June 2021 | TQ0293306523 | 1.5km northeast |

3.3 Survey limitations

- 3.3.1 Due to land access restrictions, land access was only permitted from 18 August 2021 in the South Survey Area and 26 August 2021 in the North Survey Area. This focused the survey effort into the late summer/autumn period. However, this is not considered to have affected the survey results.

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4. Summary

- 4.1.1 The presence / absence reptile survey provided records of both slow worm and grass snake in the North Survey Area with grass snake only in the South Survey Area. A maximum count of five adult slow worm and one adult grass snake was recorded in the North Survey Area with a maximum count of one juvenile grass snake recorded in the South Survey Area.
- 4.1.2 Desk study results show that slow worm, is the only reptile to occur within 2km of both Survey Areas, in low numbers. Grass snake and viviparous lizard also occur within 2km of the South Survey Area only, in low numbers.
- 4.1.3 Incidental records of viviparous lizard were made within the proposed DCO Order Limits, with slow worm, grass snake and viviparous lizard recorded within the wider area surrounding the proposed DCO Order Limits.

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5. Glossary of terms and abbreviations

| Term | Definition |
|--------------|-------------------------------------|
| EIA | Environmental Impact Assessment |
| EPS | European Protected Species |
| ES | Environmental Statement |
| JNCC | Joint Nature Conservation Committee |
| SxBRC | Sussex Biological Record Centre |

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6. References

Froglife (1999). *Reptile Survey: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife, Halesworth

Froglife (2015). *Surveying for reptiles. Tips, techniques and skills to help you survey for reptiles*. Froglife, Halesworth

Griffiths, R. and Inns, H. (1998). Surveying. In: Gent, A. H. and Gibson, S. D. eds. *Herpetofauna workers' manual*. Joint Nature Conservation Committee, Peterborough, pp1-13.

Joint Nature Conservation Committee (2004). *Common Standards Monitoring Guidance for Reptiles and Amphibians. Version February 2004*. JNCC, Peterborough.

The Conservation of Habitats and Species Regulations 2017 (SI 1012:2017). [Online] Available at: <https://www.legislation.gov.uk/ukxi/2017/1012/introduction/made> [Accessed 05 June 2023].

Wildlife and Countryside Act 1981. [Online] Available at: <https://www.legislation.gov.uk/ukpga/1981/69/contents> [Accessed 05 June 2023].

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Annex A

Figures

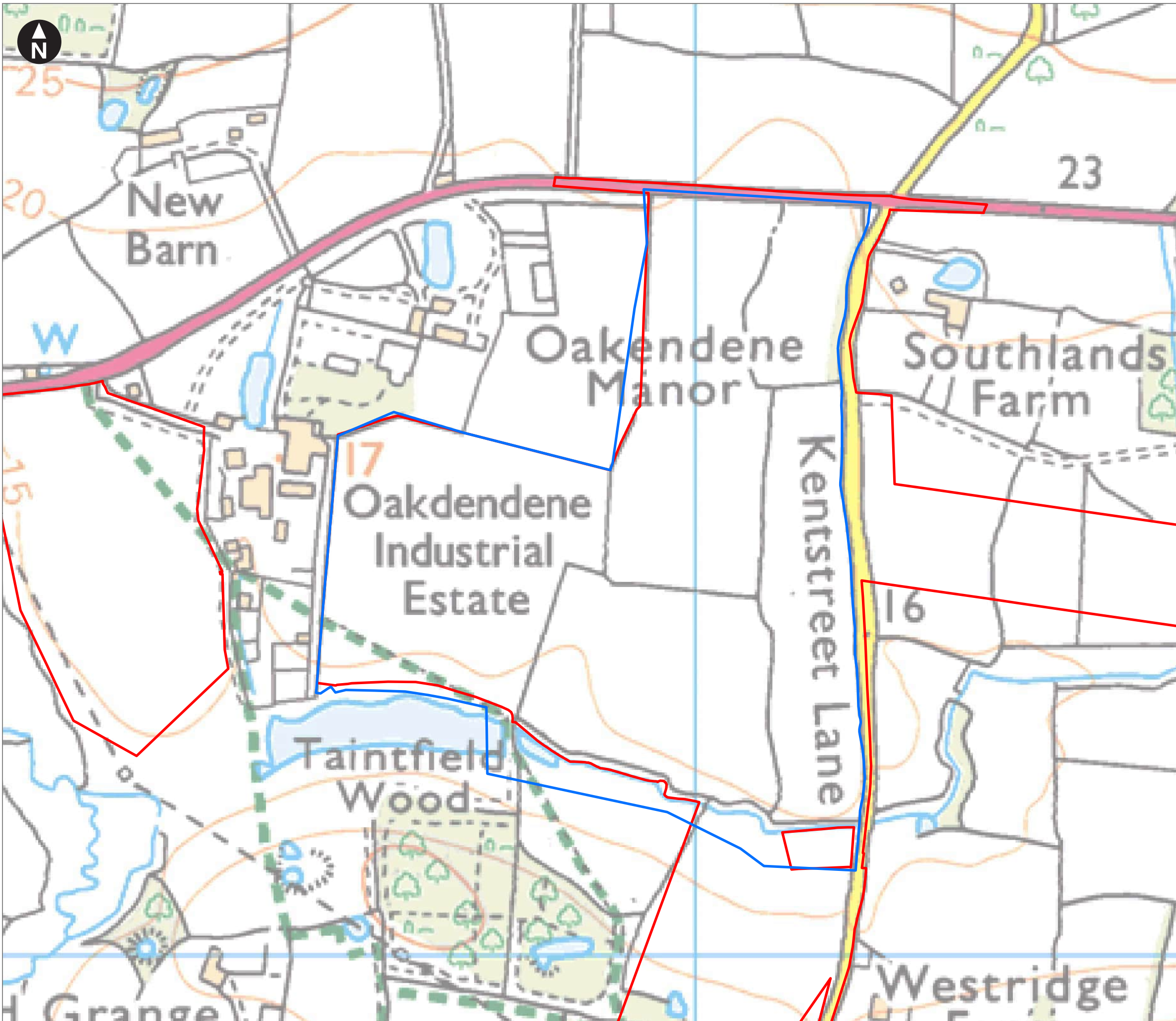
Figure 1.1 Reptile survey areas

Figure 2.1 Desk study results

Figure 2.2 Refugia deployment locations

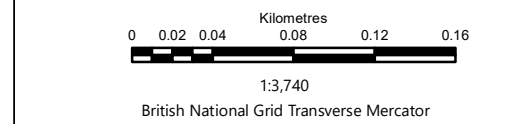
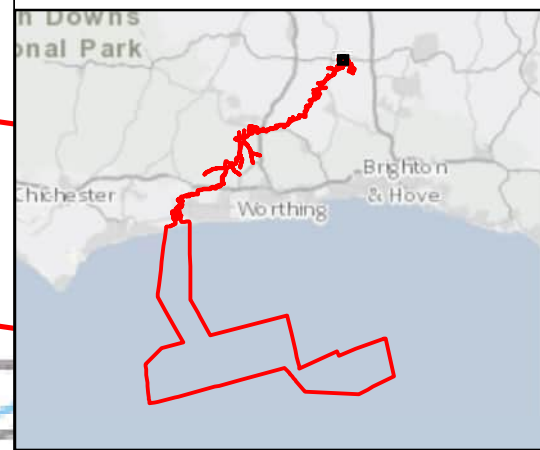
Figure 3.1 Reptile survey results

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Key

- DCO Order Limits
- South area of proposed habitat disturbance
- South Survey Area
- North Survey Area



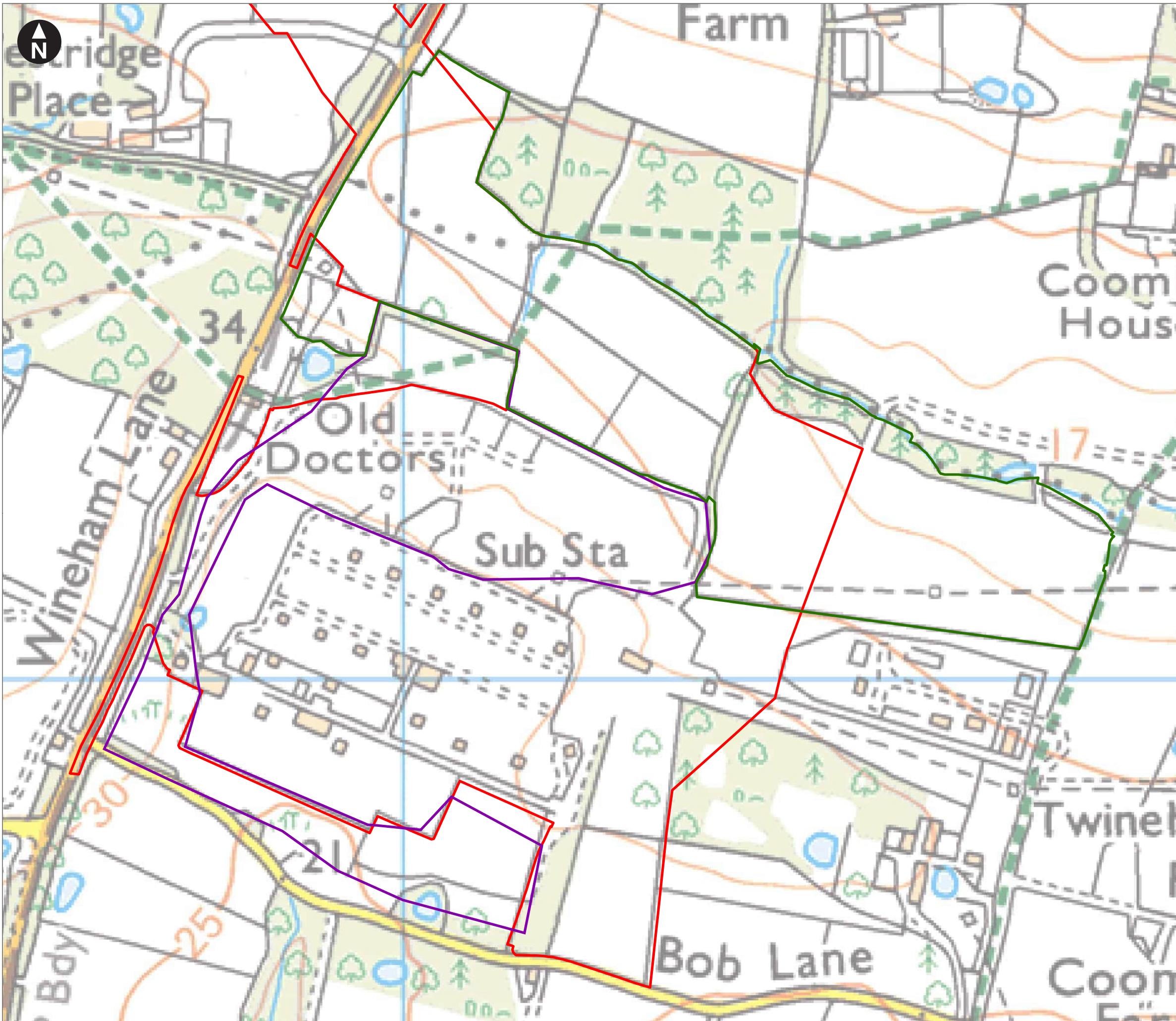
Rampion Extension Development

Rampion 2 Offshore Wind Farm

Figure 1.1 Reptile survey areas

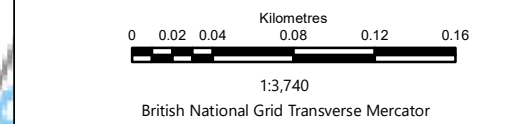
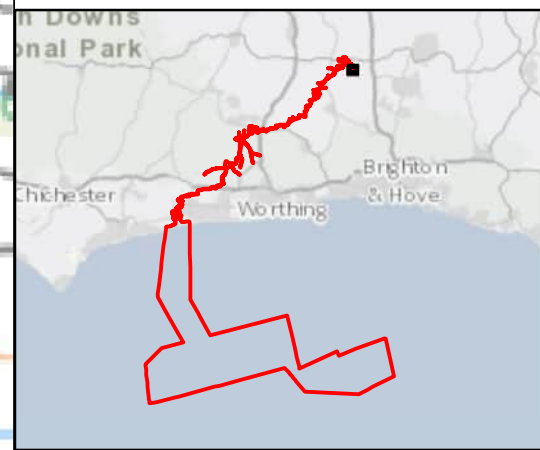
| | |
|-----------------------------|----------|
| System Identifier: | Version: |
| 42285-WOOD-PE-ON-FG-OO-7818 | 2.0 |

| | | | | |
|----------|-----------|------------|-------------|---------|
| Company: | Drawn By: | Chk/Prvrd: | Drawn Date: | Status: |
| WSP | HADJE | SUTET | 03/05/2023 | DRAFT |



Key

- DCO Order Limits
- South area of proposed habitat disturbance
- South Survey Area
- North Survey Area

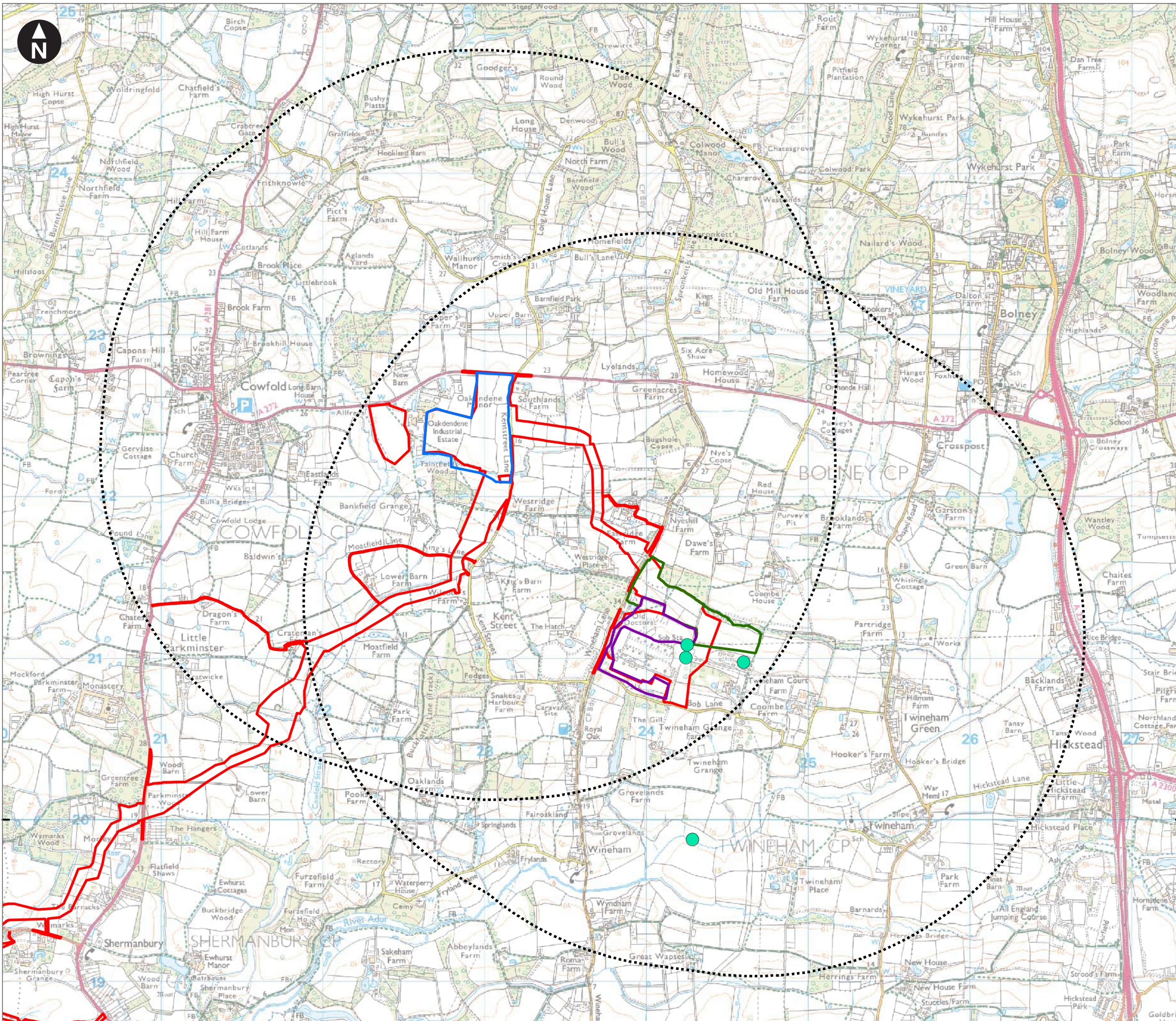


Rampion Extension Development

Rampion 2 Offshore Wind Farm
Figure 1.1 Reptile survey areas

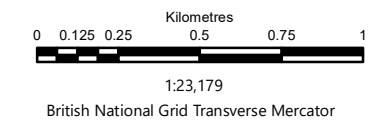
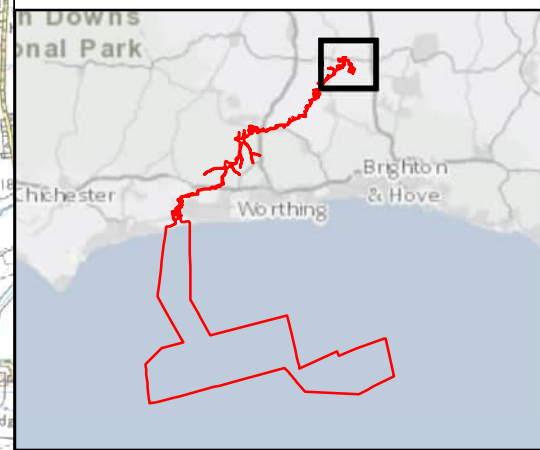
System Identifier: 42285-WOOD-PE-ON-FG-OO-7818 Version: 2.0

| | | | | |
|--------------|-----------------|-----------------|------------------------|---------------|
| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET | Drawn Date: 03/05/2023 | Status: DRAFT |
|--------------|-----------------|-----------------|------------------------|---------------|



Key

- DCO Order Limits
- 2km site buffer
- South area of proposed habitat disturbance
- South Survey
- North Survey
- Grass Snake



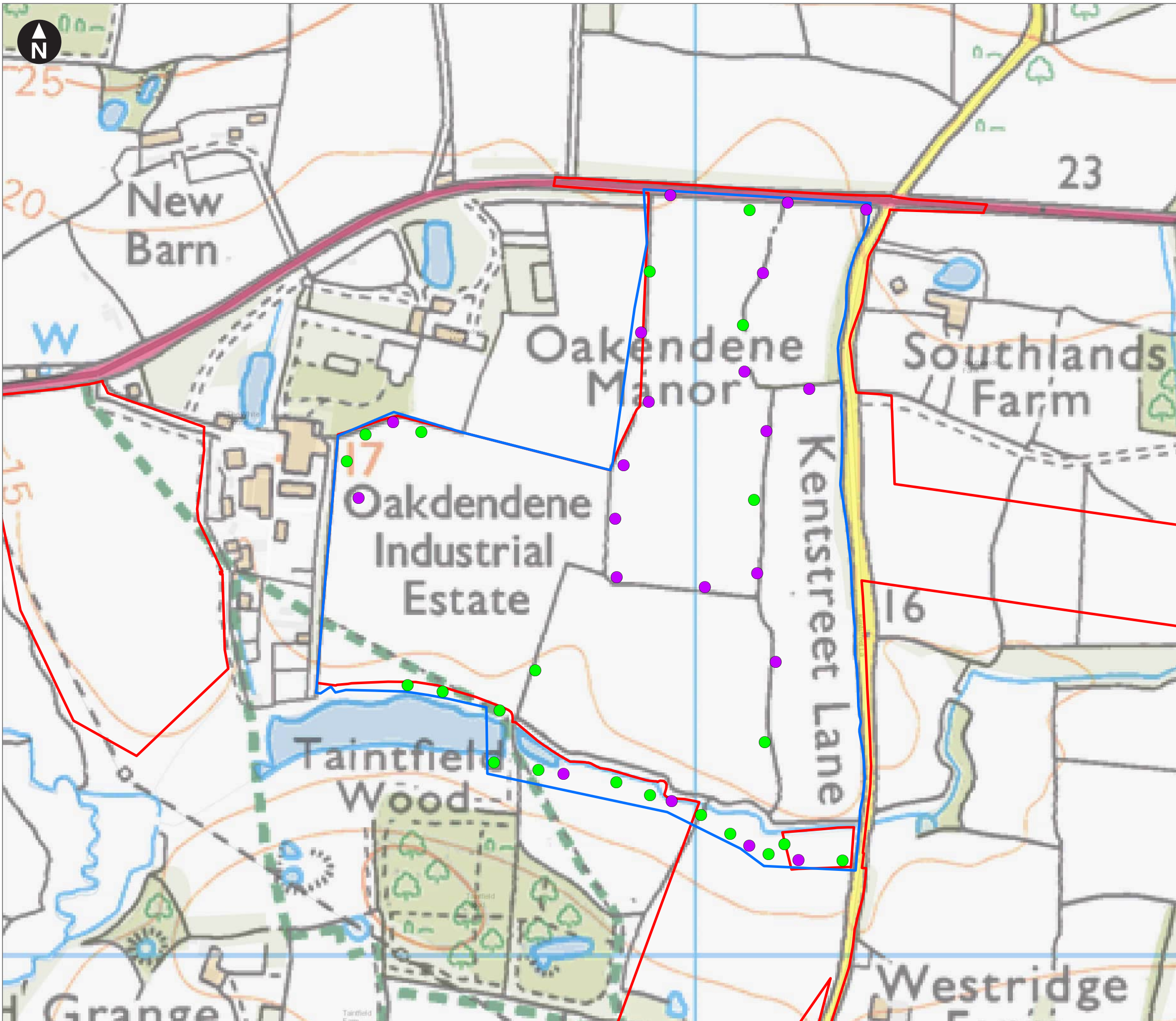
Rampion Extension Development



Rampion 2 Offshore Wind Farm
 Figure 2.1 Desk study results

| | |
|---|-----------------|
| System Identifier: 42285-WOOD-PE-ON-FG-OO-1727 | Version: 2.0 |
|---|-----------------|

| | | | | |
|-----------------|--------------------|--------------------|---------------------------|------------------|
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|-----------------|--------------------|--------------------|---------------------------|------------------|

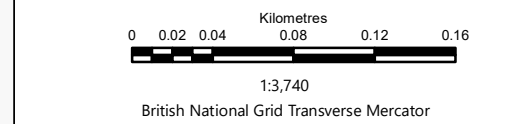
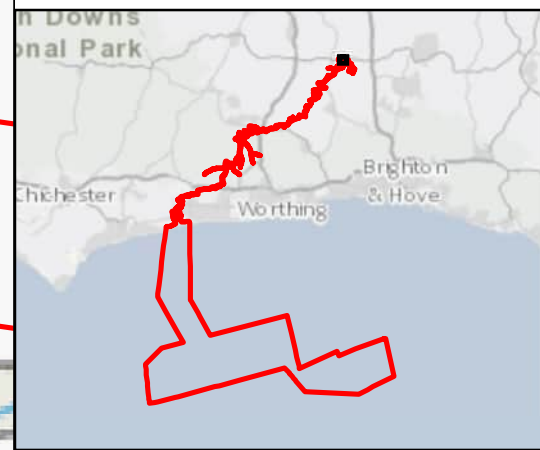


Key

- Proposed DCO Order Limits
- North Survey
- South Survey
- South area of proposed habitat disturbance

Reptile Refugia - Type

- Tin
- Felt

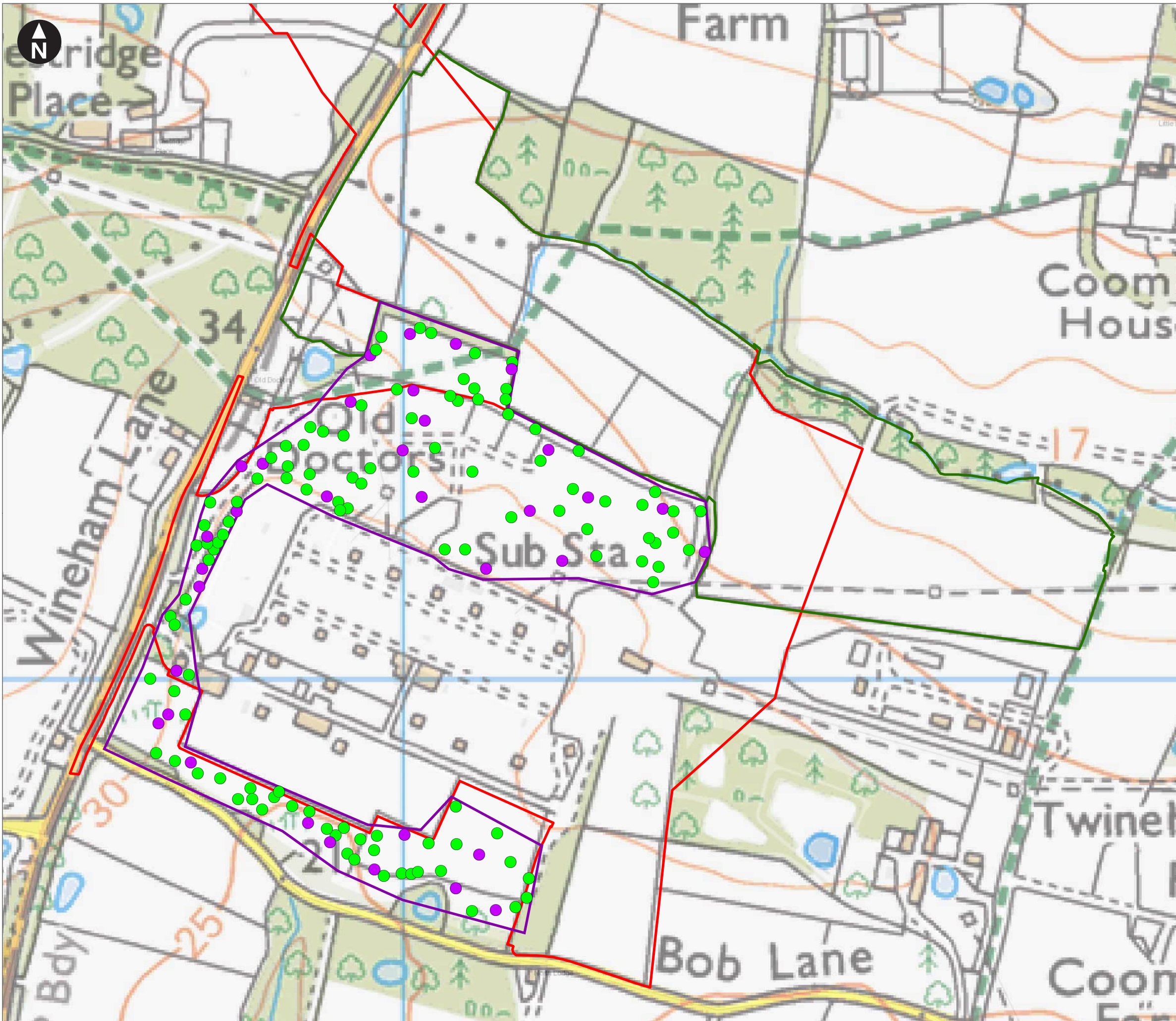


Rampion Extension Development

Rampion 2 Offshore Wind Farm

Figure 2.2 Refugia deployment locations

| | | | | |
|---|--------------------|---------------------|---------------------------|------------------|
| System Identifier: 42285-WOOD-PE-ON-FG-OO-3171 | | | | Version: 2.0 |
| Company: WSP | Drawn By: HADJE | Chk/Prvrd: SUTET | Drawn Date: 03/05/2023 | Status: DRAFT |

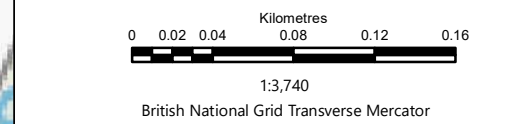
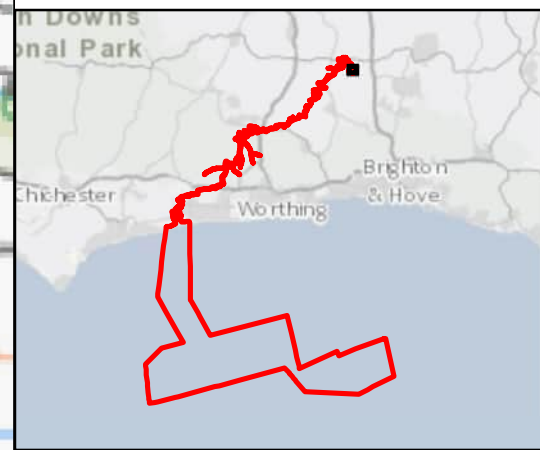


Key

- Proposed DCO Order Limits
- North Survey
- South Survey
- South area of proposed habitat disturbance

Reptile Refugia - Type

- Tin
- Felt

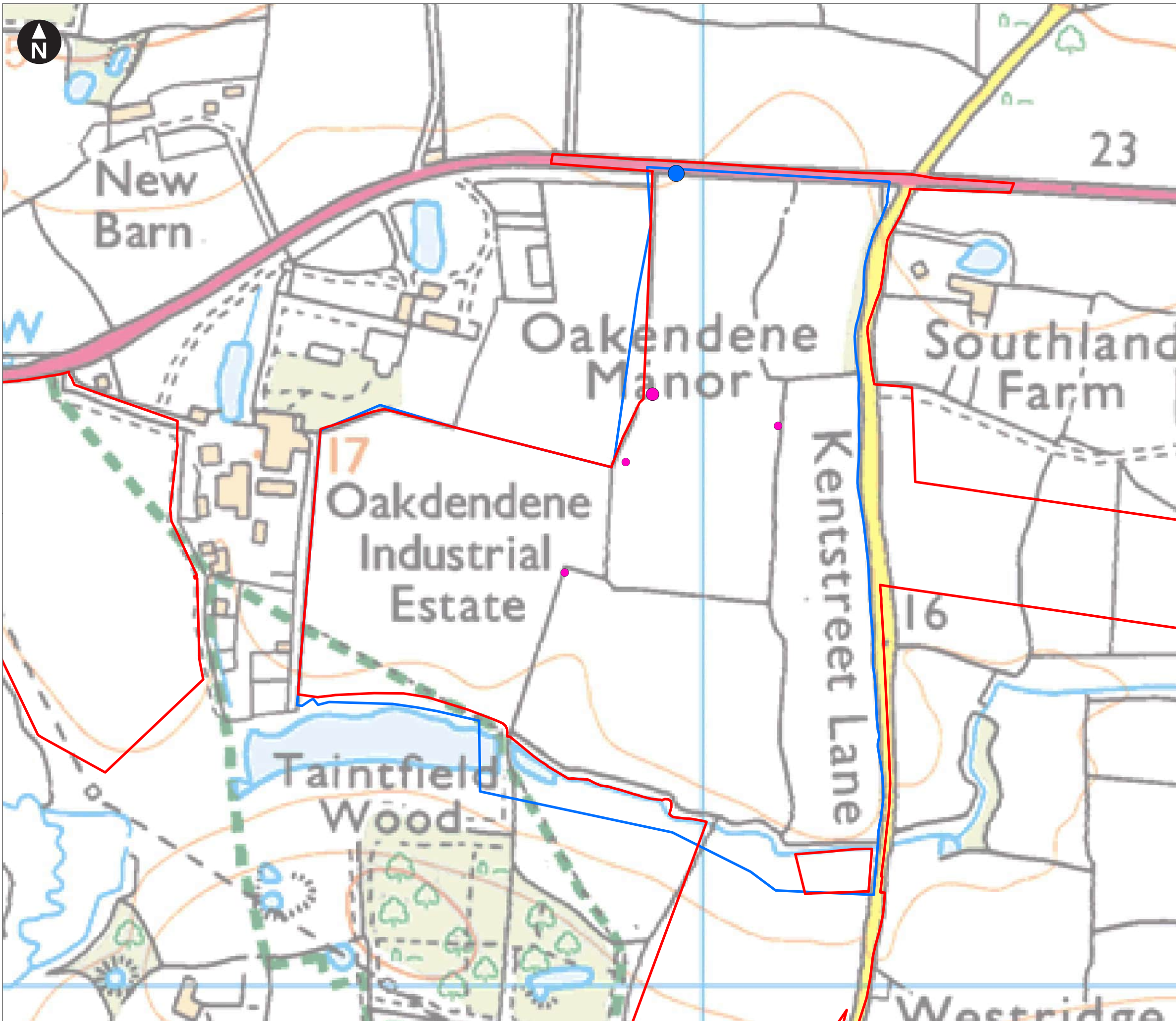


Rampion Extension Development

Rampion 2 Offshore Wind Farm
Figure 2.2 Refugia deployment locations

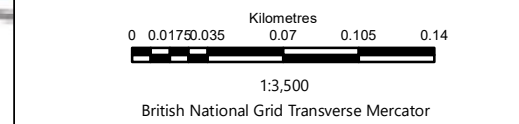
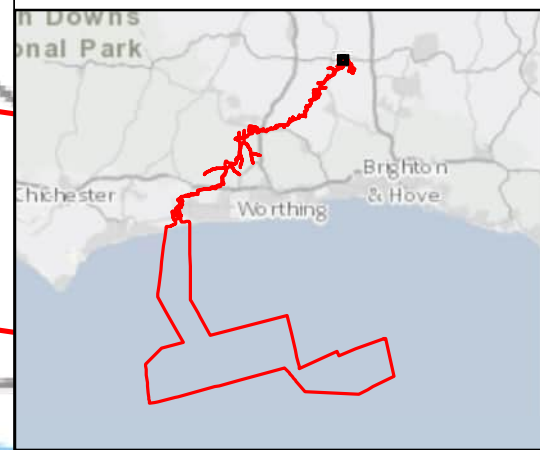
System Identifier: 42285-WOOD-PE-ON-FG-OO-3171
Version: 2.0

| | | | | |
|--------------|-----------------|-----------------|------------------------|---------------|
| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET | Drawn Date: 03/05/2023 | Status: DRAFT |
|--------------|-----------------|-----------------|------------------------|---------------|



Key

- Proposed DCO Order Limits
- South area of proposed habitat disturbance
- South Survey Area
- North Survey Area
- Slow worm - Total 1
- Slow worm - Total 2
- Slow worm - Total 3+
- Grass snake - Total 1
- Grass snake - Total 2
- Grass snake - Total 3+

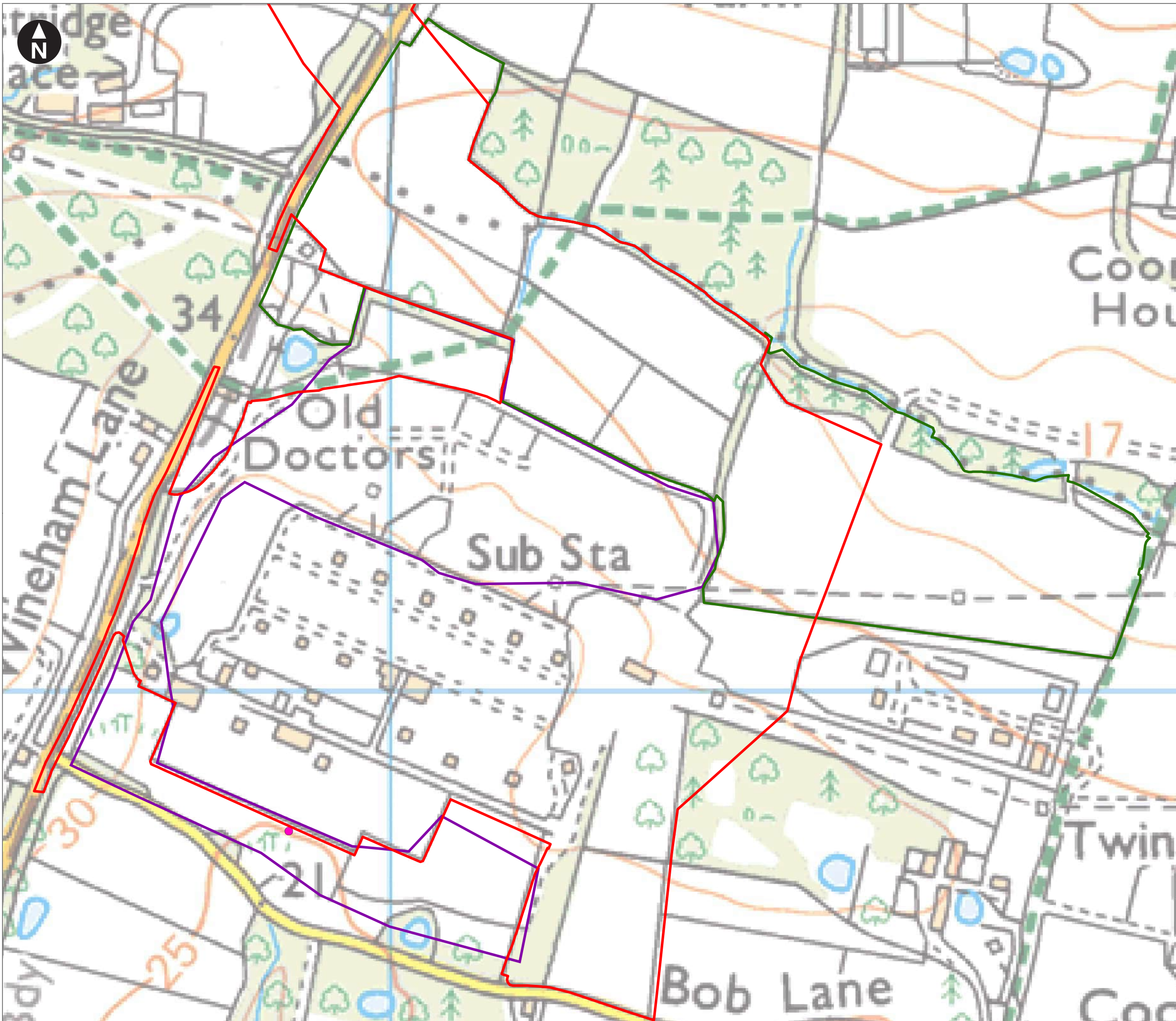


Rampion Extension Development

Rampion 2 Offshore Wind Farm

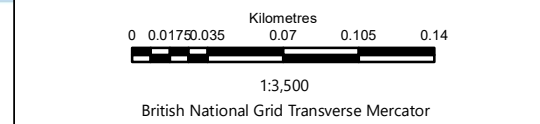
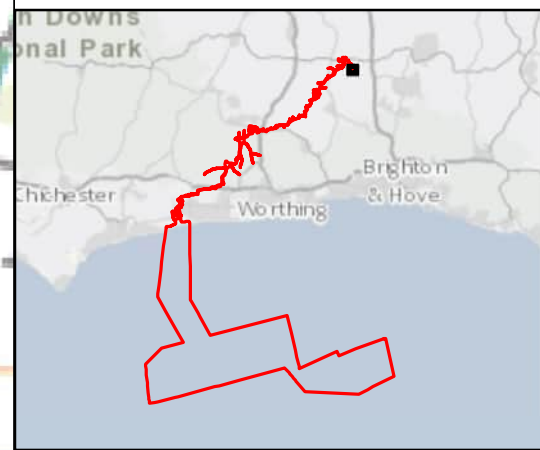
Figure 3.1 Reptile survey results

| | | | | |
|-----------------------------|-----------|------------|-------------|----------|
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| 42285-WOOD-PE-ON-FG-OO-5033 | | | | 2.0 |
| Company: | Drawn By: | Chk/Aprvd: | Drawn Date: | Status: |
| WSP | HADJE | SUTET | 03/05/2023 | DRAFT |



Key

- Proposed DCO Order Limits
- South area of proposed habitat disturbance
- South Survey Area
- North Survey Area
- Slow worm - Total 1
- Slow worm - Total 2
- Slow worm - Total 3+
- Grass snake - Total 1
- Grass snake - Total 2
- Grass snake - Total 3+



Rampion Extension Development

Rampion 2 Offshore Wind Farm

Figure 3.1 Reptile survey results

| | | | | |
|-----------------------------|-----------|------------|-------------|----------|
| System Identifier: | | | | Version: |
| 42285-WOOD-PE-ON-FG-OO-5033 | | | | 2.0 |
| Company: | Drawn By: | Chk/Aprvd: | Drawn Date: | Status: |
| WSP | HADJE | SUTET | 03/05/2023 | DRAFT |

Annex B

Weather conditions

Table B-1 North Survey Area dates of survey visits and weather conditions

| Visit no. | Date | Time | | Temperature (°C) | | Rain | Cloud cover (%) | Ground moisture | Wind strength |
|-----------|-------------------|-------|-------|------------------|------|------|-----------------|-----------------|---------------|
| | | Start | End | Min | Max | | | | |
| 1 | 10 September 2021 | 08:40 | 10:25 | 18.0 | 19.0 | None | 100 | Damp | Calm |
| 2 | 16 September 2021 | 09:50 | 11:00 | 16.0 | 17.0 | None | 40 | Damp | Calm |
| 3 | 20 September 2021 | 11:30 | 12:20 | 18.0 | 20.0 | None | 50 | Dry | Calm |
| 4 | 22 September 2021 | 10:30 | 11:15 | 10.0 | 18.0 | None | 10 | Damp | Calm |
| 5 | 24 September 2021 | 11:00 | 11:55 | 16.0 | 18.0 | None | 30 | Dry | Calm |
| 6 | 18 October 2021 | 11:05 | 11:55 | 15.0 | 16.0 | None | 100 | Wet | Light |
| 7 | 21 October 2021 | 13:55 | 15:20 | 12.0 | 14.0 | None | 10 | Damp | Calm |

Rain: None, light, occasional shower, rain. **Wind strength:** Calm - <3mph, Light- 4-12mph, Moderate -13-24mph, Strong - 25-31mph, Very strong - 32+ mph.

Table B-2 South Survey Area dates of survey visits and weather conditions

| Visit no. | Date | Time | | Temperature (°C) | | Rain | Cloud cover (%) | Ground moisture | Wind strength |
|-----------|-------------------|-------|-------|------------------|------|------|-----------------|-----------------|---------------|
| | | Start | End | Min | Max | | | | |
| 1 | 06 September 2021 | 07:30 | 10:20 | 14.0 | 20.0 | None | 0 | Damp | Calm |
| 2 | 10 September 2021 | 06:40 | 08:20 | 16.0 | 17.0 | None | 100 | Damp | Light |
| 3 | 16 September 2021 | 08:15 | 09:45 | 12.0 | 15.0 | None | 40 | Damp | Calm |
| 4 | 20 September 2021 | 10:00 | 11:20 | 16.0 | 18.0 | None | 50 | Dry | Calm |
| 5 | 22 September 2021 | 09:00 | 10:25 | 17.0 | 18.0 | None | 10 | Damp | Calm |
| 6 | 24 September 2021 | 09:00 | 10:55 | 15.0 | 16.0 | None | 30 | Dry | Calm |
| 7 | 21 October 2021 | 12:20 | 13:50 | 12.0 | 15.0 | None | 10 | Damp | Calm |

Rain: None, light, occasional shower, rain. **Wind strength:** Calm - <3mph, Light- 4-12mph, Moderate -13-24mph, Strong - 25-31mph, Very strong - 32+ mph



4.22.14



Volume 4, Appendix 22.14

Onshore winter bird report 2020- 2022



Contents

| | | |
|-----------|---|-----------|
| 1. | Introduction | 4 |
| 1.1 | Background | 4 |
| 1.2 | Legislation | 4 |
| 1.3 | Structure of this appendix | 5 |
| 2. | Methods | 6 |
| 2.1 | Defining scope of data collection | 6 |
| 2.2 | Desk study | 6 |
| 2.3 | Intertidal survey | 7 |
| | Data collection locations | 7 |
| | Data collection methods | 7 |
| | Deviations, constraints and limitations | 8 |
| 2.4 | Winter bird surveys | 9 |
| | Data collection locations | 9 |
| | Data collection methods | 9 |
| | Deviations, constraints and limitations | 10 |
| 3. | Results | 12 |
| 3.1 | Statutory designated sites of ornithological importance | 12 |
| 3.2 | Species records | 14 |
| 3.3 | Intertidal survey | 16 |
| 3.4 | Winter bird survey results | 23 |
| 3.5 | Comparison of results across winter survey periods | 27 |
| 4. | Glossary | 29 |
| 5. | References | 30 |

List of Tables

| | | |
|-----------|---|----|
| Table 3-1 | Details of statutory designated sites of ornithological importance | 12 |
| Table 3-2 | Summary of Bewick's swan Desk Study records winter 2010/11 to 2020/21 | 15 |
| Table 3-3 | Monthly peak counts of target species recorded during the intertidal surveys (September 2020 to March 2021) | 17 |

| | | |
|-----------|---|----|
| Table 3-4 | Monthly peak counts of target species recorded during the intertidal surveys (November 2021 to February 2022) | 17 |
| Table 3-5 | Monthly peak counts of secondary species recorded during the intertidal surveys September 2020 to March 2021 | 19 |
| Table 3-6 | Monthly peak counts of secondary species recorded during the intertidal survey November 2021 to February 2022 | 20 |
| Table 3-7 | Summary of target species recorded during the winter bird surveys | 23 |

List of Annexes

Annex A Figures:

- Figure 22.3.1 Ornithology Intertidal survey area 2020/2021
- Figure 22.3.2 Ornithology Winter bird survey area – Arun Valley
- Figure 22.3.3 Ornithology Winter bird survey area – Adur Valley
- Figure 22.3.4 Cumulative counts of Pintail recorded during all ornithology surveys winter 2020/21
- Figure 22.3.5 Cumulative counts of Shoveler recorded during all ornithology surveys winter 2020/21
- Figure 22.3.6 Cumulative counts of Teal recorded during all ornithology surveys winter 2020/21
- Figure 22.3.7 Cumulative counts of Wigeon recorded during all ornithology surveys winter 2020/21

Annex B Species records

Annex C Full survey details

1. Introduction

1.1 Background

- 1.1.1 This appendix should be read in conjunction with **Chapter 22: Terrestrial Ecology and Nature Conservation, Volume 2** of the Environmental Statement (ES) which is provided in support of the delivery of an Environmental Impact Assessment (EIA) associated with the Rampion 2 Offshore Wind Farm, hereafter referred to as the 'Proposed Development' or 'Rampion 2'.
- 1.1.2 This appendix describes the survey method and summarises the results of onshore winter bird surveys undertaken between September 2020 and March 2021, and November 2021 and February 2022 inclusive.

1.2 Legislation

- 1.2.1 The main legislation relating to the protection of habitats and birds within the UK are: The Conservation of Habitats and Species Regulations 2017 ("the Habitats Regulations") as amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019; Wildlife and Countryside Act 1981 (as amended) (WCA) and the Natural Environment and Rural Communities (NERC) Act 2006 (as amended).
- 1.2.2 The Habitat Regulations and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 transposed Council Directive 92/43/EEC on the conservation of natural habitats and wild flora and fauna ('the Habitats Directive') into national law. They also transposed elements of Council Directive 2009/147/EC on the conservation of wild birds ('the Birds Directive'). The Habitats Regulations provide the framework for the protection of Natura 2000 sites (now referred to as the national site network following amendments that came into force on 31 December 2020). The regulations set out the process regarding the assessment of development including Habitats Regulations Assessments associated with designated sites.
- 1.2.3 The WCA 1981, (as amended), amongst other matters provides protection for wild birds, certain flora and fauna, under the Act *it is illegal to kill, injure or 'take' any wild bird, take or damage the nest of any wild bird whilst in use or being built or take, destroy or be in possession of any eggs of wild birds*. Some birds are afforded further protection under Schedule 1 of the Act, making it an offence to 'intentionally or recklessly disturb at, or near an 'active' nest any bird listed on Schedule 1, including young dependent upon a nest structure.
- 1.2.4 Section 41 of The NERC Act 2006 (as amended) lists habitats and species of principal importance for use for biodiversity conservation. The list, including 56 habitats of principal importance (HPI) and 943 species of principal importance (SPI), including 59 bird species. The list aids public bodies, helping them meet their 'biodiversity duty' to be aware of conservation in their policy and decision making.

1.3 Structure of this appendix

1.3.1 This appendix is structured as follows:

- **Section 2:** Methods;
- **Section 3:** Results;
- **Section 4:** Glossary;
- **Section 5:** References;
- **Annex A:** Figures;
- **Annex B:** Species records;
- **Annex C:** Full survey details

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2. Methods

2.1 Defining scope of data collection

2.1.1 The data collection effort comprised the following:

- Desk study records of statutory and non-statutory designated sites of ornithological importance and records of notable bird species;
- Intertidal surveys along the shoreline at Climping Beach, where the electricity transmission cable for Rampion 2 makes landfall;
- Winter bird surveys within the Arun and Adur valley floodplains;

2.1.2 Due to the scale and nature of the proposed development, it is not proportionate to undertake winter bird surveys across the entire site, instead a sampling method was used, with surveys focusing within areas most likely to support aggregations of wintering birds (particularly those associated with nearby designated sites). Survey areas and ornithological interest features were identified during the desk study.

2.1.3 Surveys were undertaken during the optioneering phase of the project before design freeze was reached. As such, some of the recording areas now fall outside of the draft Order Limits. The results of all surveys are here reported as they provide useful contextual information. All survey locations are shown in context to the proposed Development Consent Order (DCO) Order Limits on **Figures 22.3.1 – 22.3.3, Annex A**.

2.2 Desk study

2.2.1 An environmental desk study was undertaken to identify statutory designated sites of international and national importance for ornithology within 10km of the proposed DCO Order Limits, and non-statutory designated sites of ornithological importance within 5km of it. The search was carried out using the website www.magic.gov.uk (a Web-based Multi-Agency Geographic Information for the Countryside (MAGIC) database, provided by Defra (2021)). Information on the designated sites identified was gathered from the websites of Natural England and the Joint Nature Conservation Committee (JNCC, 2021) - www.designatedsites.naturalengland.org.uk and www.jncc.defra.gov.uk.

2.2.2 In addition to the desk study for designated sites, species specific data was gathered from the Royal Society for the Protection of Birds (RSPB), Sussex Ornithological Society (SOS) and Sussex Biological Record Centre (SxBRC) within 2km of the draft Order Limits¹. Species specific data was requested for all protected or notable species occurring in winter.

¹ The exact distance varied for the record search provided by SOS as their data is specified by tetrad.

2.3 Intertidal survey

- 2.3.1 Intertidal surveys were undertaken between September 2020 and March 2021 inclusive, and between November 2021 and February 2022 inclusive, as there is the potential for important numbers of wintering birds to occur within the proposed DCO Order Limits, particularly along the coastline. The purpose of the intertidal bird survey was to collect data to confirm the typical distribution and assemblages of waterbird² species associated with nearby designated sites (see **Section 3.1: Results**). The surveys followed the so-called ‘look-see’ methodology (Bibby *et al.* 2000), whereby the observer undertakes a census of all waterbird species within a predefined waterbody/wetland area. The surveys focussed on the diurnal distribution of birds, and movements across tidal cycles.

Data collection locations

- 2.3.2 The survey focused on intertidal habitats and fields directly behind the seawall within 1km of the indicative cable landfall location. For the purposes of the intertidal survey, this area was divided into two survey sectors. These survey sectors were observed simultaneously by two surveyors (**Figure 22.3.1, Annex A**). The survey employed a roving observation point technique, used to observe all birds within the sectors during the survey period.
- 2.3.3 Full survey details, including visit dates, times and weather conditions are available in **Table C1, Annex C**.

Data collection methods

Instantaneous Scan Samples

- 2.3.4 Instantaneous Scan Samples (ISS) are ‘snapshots’ that record how waterbirds use each survey sector within an area at a given interval. On each survey date two surveyors undertook six hours of simultaneous survey, one located within each sector in order to observe any changes/patterns in the distribution of waterbirds across the tide. During each six-hour period, a series of seven ISS counts were undertaken using the ‘look-see’ methodology (Bibby *et al.* 2000) at 60-minute intervals within each sector, the first being at the start of the survey. ISS intervals were chosen to coincide with tidal movements with surveys observing high tide +/- 3 hours, and low tide +/-3 hours, each month. The species present, number and behaviour of all target³ species was recorded on a new field map for each ISS.
- 2.3.5 All other wildfowl and wader species recorded during the surveys are considered secondary species, these were recorded to provide an accurate representation of

² Waterbirds are here considered to be birds that frequent water, especially habitual wading, or swimming birds. This term includes ducks, geese, swans and their relatives; seabirds; herons, egrets and storks; grebes and divers; wading birds; gulls and terns; and rails, crakes and allies. All waterbirds are considered non-passerine.

³ Target species for the Intertidal survey are species included on the designations of the Solent and Dorset Coast Special Protected Area (SPA) and the Climping Beach Site of Special Scientific Interest (SSSI). These species are identified in **Table 3-7**.

birds utilising the survey sectors. These birds had the same information as recorded for target species.

- 2.3.6 Surveyors started at the same time and remained in contact throughout the survey to minimise the risk of double counting at count sector boundaries. Bird activity was recorded using four categories:
- Feeding/foraging;
 - Loafing/preening;
 - Roosting; and
 - Other (specified by the surveyor).
- 2.3.7 Each ISS count plotted flocks or single birds accurately on the field map and counts were tallied for each species and activity.
- 2.3.8 In addition to ISS, where species peak counts were observed outside of, but between ISS, the peak counts of species present were noted with an accurate timestamp. Therefore, peak counts of birds were recorded within the survey period, even if not occurring during the ISS.
- 2.3.9 As disturbance was considered a potential factor influencing survey results, the number of people using the beach during each ISS was noted to assess baseline conditions and ascertain the influence of their presence upon the results of the survey.

Deviations, constraints and limitations

- 2.3.10 Intertidal surveys aim to undertake two surveys per month covering the high tide period +/- 3 hours and a low tide period +/-3 hours. Due to the commencement date of the survey, there were not two suitable tidal ranges during the September 2020 recording period. The first visit was therefore undertaken on the 24 September 2020 with the second visit (also considered herein as September) being on 02 October 2020. This lapse of two days is considered a minor deviation. There were no other deviations during the survey period.
- 2.3.11 Typically target species are prioritised for detailed recording on occasions when there are large numbers of waterbirds present in an area. Although the survey method was set up to allow for this, the relatively small number of birds (compared, for example, to large areas of intertidal mudflat) present in the count sectors throughout the winter of 2020/2021 did not require a switch to the recording of coarser grained information for secondary species.
- 2.3.12 Following Natural England's request for additional data, winter bird surveys during winter 2021-22 were conducted between November 2021 and February 2022, this is a shortening of three months compared to the assessment undertaken in 2020-21. This deviation is not considered detrimental to the overall assessment as target species are expected to peak within the core months assessed during the second winter period.
- 2.3.13 There were no further deviations, constraints or limitations during the wintering surveys November 2021 – February 2022.

2.4 Winter bird surveys

2.4.1 Due to the proximity of the indicative cable corridor (during the optioneering phase) to the Arun Valley Ramsar site and SPA, winter bird surveys targeting wildfowl and wading birds associated with the SPA/Ramsar and the underlying SSSI designations (at Pulborough Brooks and Amberley Wild Brooks) were undertaken. These targeted the floodplains and wet fields within and close to the proposed DCO Order Limits on the River Arun and River Adur floodplains between September 2020 and March 2021, and November 2021 to February 2022 inclusive. The purpose of the winter bird survey is to collect data on the distribution and assemblages of waterbird species that utilise this land as functionally linked habitat from the nearby designated sites. The surveys focussed on diurnal distribution of target species throughout the survey period.

Data collection locations

- 2.4.2 The survey focused on the floodplains and fields surrounding the River Arun and River Adur within draft Order Limits and within 500 metres of it. For the purposes of the winter bird survey, this area was divided into two survey areas. These survey areas were observed simultaneously by two surveyors (**Figures 22.3.2 and 22.3.3, Annex A**). The survey employed a roving observation point technique, used to observe all birds within the survey areas during the survey period.
- 2.4.3 Following an initial scoping assessment in September 2020, winter bird surveys were undertaken within the potential functionally linked habitat on a monthly basis between 28 September 2020 and 12 March 2021 during the first winter period, and between 17 November 2021 and 02 February 2022 during the second winter period. Full survey details, including dates, times and weather conditions can be found in **Annex C, Table C2**.

Data collection methods

- 2.4.4 The winter bird survey covered two survey areas, both observed on a single day allowing a snapshot record of the number and distribution of wintering birds present each month to be recorded, whilst minimising the chance of duplicate counts.
- 2.4.5 The aim of these surveys was to determine whether any of the notable species defined below, regularly feed or roost within or close to the proposed DCO Order Limits.
- 2.4.6 Notable species are defined as:
- Species listed as notified features on nearby designated sites: Bewick's swan, shoveler, teal, wigeon, pintail and ruff;
 - All other waders and wildfowl (excluding feral/domestic birds, mallard, Canada goose and greylag goose) for consideration to overall winter assemblage number;
 - Species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended);

- Species listed on Annex 1 of the EU Birds Directive; and
 - Birds of Conservation Concern (BoCC) red list species (Stanbury *et al.*, 2021);
- 2.4.7 Surveyors recorded accurate locations of species directly onto survey maps recording the following details:
- Species (using standard British Trust for Ornithology [BTO] 2-letter codes);
 - Number of individuals;
 - location of records; and
 - activity (foraging, loafing, roosting etc.).
- 2.4.8 The presence of species that do not qualify as notable using the criteria were noted to record a full species list for each survey area, however, information on numbers, distribution and behaviour were not recorded.
- 2.4.9 All surveys avoided heavy rain, or strong or cold winds, minimising variation in bird activity levels due to weather conditions, wherever possible. All visits started at least an hour after dawn and were completed by 15:00 hours.

Deviations, constraints and limitations

- 2.4.10 There were no deviations from the proposed methodology during the winter bird surveys.
- 2.4.11 An identifiable constraint was a lack of land access across parts of the survey area, although many areas of open floodplain can be viewed from highways/byways and Public Rights of Way (PRoW).
- 2.4.12 **Figures 22.3.2 and 22.3.3, Annex A** represent the areas where suitable coverage was available within the survey area, the blank gaps within the floodplains represent areas where access was not possible. In **Figure 22.3.2** the area shown between the River Arun and the railway near Littlehampton was not fully visible due to the raised railway embankment. Surveyors spent time in the area to try to audibly record any target species. There were no constraints to access within the areas shown on **Figure 22.3.3**.
- 2.4.13 Counts undertaken at the private waterbodies by St Mary Magdalene's Church should be taken as minimum counts as visibility was limited due to fencing/vegetation/banks. Although restricted viewing resulted in minimum total counts rather than unrestricted counts, it is not considered that these counts were grossly inaccurate. Approximately 80% of the waterbodies could be viewed at any one time, with surveyor movement between three or four viewing areas (dependent on height of surveyor and visibility through vegetation) taking less than two minutes. It is not likely that birds moving around within the waterbody would be counted as duplicates, but birds may not be recorded if moving to areas previously checked by surveyors. These counts were judged by the surveyors as being accurate to within ~10% of total number of birds present.
- 2.4.14 Contrastingly, if access was available to these waterbodies, the presence of surveyors entering the site would undoubtedly have flushed the target species

from the area causing unnecessary disturbance, potentially resulting in a less accurate assessment of behaviours.

- 2.4.15 Despite the limitations described above the dataset is considered to provide a robust approximation of the waders and wildfowl population present during daylight hours on the relevant sections of the River Arun and Adur floodplains in the winter periods of 2020/21 and 2021/22.
- 2.4.16 Following consultation comments and additional records being returned in March 2021, an additional survey effort was made in winter 2021-22 to identify the location and number of Bewick's swans wintering within the regular winter herd known to frequent the floodplains within 3km of the proposed DCO Order Limits; results are presented in **paragraph 3.4.7**.

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3. Results

3.1 Statutory designated sites of ornithological importance

3.1.1 Ten designated sites were identified within the search area as sites of ornithological importance, with five sites principally designated for over-wintering species. See **Table 3-1** below.

3.1.2 Three statutory designated sites of international importance were identified within 10km of the proposed DCO Order Limits, these are identified in **Table 3-1**. Six nationally designated sites of ornithological importance were identified within 5km of the proposed DCO Order Limits. One of these sites (Climping Beach SSSI) overlaps with the proposed DCO Order Limits.

Table 3-1 Details of statutory designated sites of ornithological importance

| Site name | Designated features | Distance and direction from the draft Order Limits |
|--|---|--|
| Internationally important sites | | |
| Arun Valley SPA | Bewick's swan (non-breeding) Waterfowl assemblage (non-breeding): including shoveler, teal, wigeon and Bewick's swan. | 4.8km north-west |
| Arun Valley RAMSAR | Qualifies under Ramsar Criterion 5 for winter assemblage of international importance: 13774 waterfowl. | 4.8km north-west |
| Solent and Dorset Coast SPA | Sandwich tern (breeding), Common tern and little tern (breeding) | 2.3km south-west |
| Nationally important sites | | |
| Amberley Wild Brooks SSSI | Redshank (breeding) Bewick's swan, shoveler and teal (non-breeding). Breeding bird assemblage – mixed lowland damp grassland, woodland. | 4.8km north-west |

| Site name | Designated features | Distance and direction from the draft Order Limits |
|-------------------------------|---|--|
| Arundel Park SSSI | Breeding bird assemblage – mixed: scrub, woodland | 2.9km north-west |
| Chanctonbury Hill SSSI | Breeding bird assemblage – mixed: lowland damp grassland, woodland | 0.7km south |
| Cissbury Ring SSSI | Breeding bird assemblage – mixed: scrub, woodland | 4.2km south-east |
| Climping Beach SSSI | Sanderling – winter assemblage of up to 300 individuals represent 1% of West European population. | Within proposed DCO Order Limits |
| Sullington Warren SSSI | Breeding bird assemblage – mixed: scrub, woodland | 0.7km east |

3.1.3 Though most of these designated sites do not overlap with the proposed DCO Order Limits, except Climping Beach SSSI, there is the potential for birds notified on all designations to utilise the habitats that the indicative cable corridor crosses, it is therefore necessary to assess these habitats as potentially functionally linked.

3.1.4 The following species are listed as individual qualifying features of the designated sites (see **paragraphs 3.1.5 to 3.1.9**) or as part of the relevant overwintering assemblages relevant to the winter bird survey effort:

- **SPA and Ramsar listed:** Bewick's swan *Cygnus columbianus bewickii*, common tern *Sterna hirundo*, little tern *Sterna albifrons*, sandwich tern *Sterna sandvicensis*, shoveler *Spatula clypeata*, teal *Anas crecca*, wigeon *Mercea penelope*, pintail *Anas acuta* and ruff *Calidris pugnax*.
- **SSSI listed:** Sanderling *Calidris alba*.

3.1.5 The Arun Valley SPA/Ramsar site lies 4.8km north-west of the indicative cable corridor, between Pulborough and Amberley within the River Arun Valley in West Sussex. The SPA/Ramsar site consists of three component SSSI (Amberley Wild Brooks SSSI; Pulborough Brooks SSSI and Waltham Brooks SSSI). Together these sites comprise an area of wet meadows on the floodplain of the River Arun. The neutral wet grassland which is subject to winter, and occasional summer flooding, is dissected by a network of ditches, several of which support rich aquatic flora and invertebrate fauna. The combined area of these three component sites is 529 Hectares, with both SPA and Ramsar designations covering the same area.

3.1.6 The Arun Valley SPA qualifies under Article 4.1 qualification (*Council Directive 79/409/EEC*). Over winter the area regularly supports: Bewick's swan (Western Siberia/North-eastern & North-western Europe) 1.6% of the population in Great Britain (GB) 5 year peak mean for 1992/93 to 1996/7 and Article 4.2 qualification

(*Council Directive 79/409/EEC*): An internationally important assemblage of birds, over winter the area regularly supports: 27241 waterfowl (5 year peak mean 1991/92-1995/96) Including: Bewick's swan.

- 3.1.7 The Arun Valley Ramsar is considered an area of outstanding ornithological importance notably for wintering wildfowl and breeding waders. The site qualifies as a Ramsar under criterion 5 assemblages of international importance: Species with peak counts in winter: 13,774 waterfowl (5-year peak mean 1998/99-2002/03). Noteworthy fauna include: Eurasian wigeon, North-west Europe 4,742 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1998/9 – 2002/3); Eurasian teal, North-west Europe, 2,931 individuals, representing an average of 1.5% of the GB population (5 year peak mean 1998/9 – 2002/3); Northern shoveler, North-west and Central Europe, 222 individuals, representing an average of 1.5% of the GB population (5 year peak mean 1998/9 – 2002/3); and Ruff, Europe and West Africa, 27 individuals, representing an average of 3.8% of the GB population (5 year peak mean 1998/9-2002/3).
- 3.1.8 Climping Beach SSSI lies 0.1km east of the landfall location for the indicative cable corridor, between Atherington and Littlehampton. The site is a stretch of coast with vegetated shingle beach, backed by a sand dune system. The intertidal zone supports important populations of wintering birds and the numbers of wintering sanderling, in particular are of European significance.
- 3.1.9 Solent and Dorset Coast SPA lies 2.3km south-west of the landfall location for the indicative cable corridor at the nearest point; Middleton-on-Sea. The SPA is noted for importance to breeding tern populations, qualifying under Article 4.1 (*Council Directive 79/409/EEC*) during the breeding season as the area regularly supports: sandwich tern - 4.01% of the GB breeding population (5-year mean 2010-2014, 441 pairs). common tern - 4.77% of the GB breeding population (5-year mean 2009-2014, 492 pairs). little tern - 3.31% of the GB breeding population (5-year mean 2009-2014, 63 pairs).

3.2 Species records

- 3.2.1 As part of the environmental desk study, species data for birds likely to be wintering within proximity of the indicative cable corridor were gathered from the RSPB, SOS and SxBRC. Records of dark-bellied brent goose and Bewick's swan in particular were considered notable due to their notifications on nearby statutory designated sites.
- 3.2.2 Dark-bellied brent goose are a qualifying feature of the nearby Pagham Harbour Ramsar under Ramsar criterion 6 – species / populations occurring at levels of international importance. 2,512 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9-2002/3). Brent geese forage within intertidal areas and arable fields, often roosting and foraging within fields when the tidal state is unfavourable to forage. Brent geese are considered here as there is the potential for birds to utilise the area close to the landfall site.
- 3.2.3 The data requests returned 208 brent goose records and 443 Bewick's swan records within 3km of the indicative cable corridor, between winter of 2010/11 and 2020/21; records older than ten winter periods have been discounted as they are

no longer considered accurate reflections of the status of target species within the area.

3.2.4 The majority of the brent goose records (201 of 208) are from Climping/Climping Beach/Elmer rocks area near where the indicative cable corridor makes landfall; the average count of birds in the Climping area is 233 with records ranging from single birds to a peak count of 1,500. There were three records of brent goose in Partridge green, towards the northern end of the indicative cable corridor. Two records in 2011: Six individuals 13 January 2011, and an unconfirmed report of 100 birds 20 August 2011. There was a lone bird with greylag geese 15 January 2015. The final four brent goose records returned were from Arundel or further south toward the coast.

3.2.5 The 443 Bewick's swan records from winter 2010/11 to 2020/21 reflect a regularly occurring winter herd of swans within the search area, records are summarised in **Table 3-2** below.

Table 3-2 Summary of Bewick's swan Desk Study records winter 2010/11 to 2020/21

| Winter period | Number of records | Mean count | Peak count | Date of first record | Date of last record | Date of Peak count |
|--------------------|-------------------|------------|------------|----------------------|---------------------|------------------------------|
| 2010/11 | 44 | 14.9 | 42 | 29/10/2010 | 05/03/2011 | 02/02/2011 |
| 2011/12 | 34 | 25.7 | 33 | 29/11/2011 | 20/02/2012 | 11-15/02/2012 |
| 2012/13 | 47 | 19.6 | 40 | 14/11/2012 | 10/03/2013 | 09/02/2013 |
| 2013/14 | 22 | 7.5 | 14 | 17/11/2013 | 28/02/2014 | 26/11/2013; 10-18/12/2013 |
| 2014/15 | 90 | 25.1 | 42 | 29/11/2014 | 25/02/2015 | 30/12/2014 |
| 2015/16 | 25 | 4.2 | 11 | 22/11/2015 | 27/02/2016 | 19/02/2016 |
| 2016/17 | 64 | 11.0 | 22 | 29/11/2016 | 03/03/2017 | 21/01/2017- 26/01/2017 |
| 2017/18 | 21 | 6.3 | 13 | 05/12/2017 | 09/03/2018 | 14/01/2018 |
| 2018/19 | 49 | 8.7 | 14 | 04/11/2018 | 12/04/2019 | 06/01/2019 |
| 2019/20 | 34 | 3.4 | 6 | 29/10/2019 | 18/02/2020 | 05-18/02/2020 |
| 2020/21 | 13 | 9 | 14 | 22/12/2020 | 21/02/2021 | 12/02/2021 |
| Total Mean* | 40.3 | 12.3 | 22.8 | 20 November | 28 February | 11 February |

| Winter period | Number of records | Mean count | Peak count | Date of first record | Date of last record | Date of Peak count |
|---------------|-------------------|------------|------------|----------------------|---------------------|--------------------|
|---------------|-------------------|------------|------------|----------------------|---------------------|--------------------|

The total mean is the sum of all yearly values/number of years recording (11). This row also provides: The mean number of annual records, mean annual Mean, peak mean, average arrival date, average departure date and average date of peak count.

- 3.2.6 From Bewick's swan records returned as part of the desk study, there is evidence of a regular wintering herd around Burpham/Wepham water meadows. This herd are regularly recorded in their wintering grounds >2km north/north-west of the proposed DCO Order Limits; shielded from the indicative cable corridor by an escarpment and blocks of ancient woodland. The peak annual counts show overall decline reflecting the national trend for this declining winter visitor, there is also evidence suggesting reduction in overall numbers of birds returning to the area along with later arrival dates, earlier departure dates and overall shorter wintering presence within the wider area.

3.3 Intertidal survey

- 3.3.1 Across both winter survey periods, a total of 45 target and secondary species were recorded during the intertidal survey (35 species in 2020-21 and 35 species in 2021-22), including five target species that are a qualifying feature of the Arun Valley SPA / Ramsar site, Solent and Dorset Coast SPA or Climping Beach SSSI:

- Three species are listed as individual qualifying features of the Arun Valley SPA and Arun Valley Ramsar site (pintail, teal and wigeon);
- One species is listed as an individual qualifying feature of the Solent and Dorset Coast SPA (sandwich tern); and
- One species is a monitored feature of Climping Beach SSSI (sanderling).

- 3.3.2 **Table 3-3**, below, shows peak monthly counts of target species recorded during the intertidal surveys, September 2020 to March 2021. **Table 3-4** below, shows peak monthly counts of target species recorded during the intertidal surveys, November 2021 – February 2022. These peak counts represent the maximum number of target species within the survey area throughout the individual survey days. Peak counts presented below are considered the outright peak number of birds during the survey effort and in-combination counts of simultaneously obtained ISS results. The peak counts shown in bold represent the peak count during the survey periods; September 2020 – March 2021 inclusive, and November 2021-February 2022 inclusive.

Table 3-3 Monthly peak counts of target species recorded during the intertidal surveys (September 2020 to March 2021)

| Species | Conservation Status* | September | October | November | December | January | February | March |
|----------------------|----------------------|-----------|---------|-----------|----------|-----------|-----------|-------|
| Pintail | Amber | 15 | - | - | - | 18 | - | - |
| Sanderling | Amber | 3 | 15 | 80 | 19 | 60 | 32 | 12 |
| Sandwich tern | Annex I, Amber | 3 | 2 | - | - | - | - | - |
| Teal | Amber | - | - | - | - | 2 | 1 | - |
| Wigeon | Amber | 13 | 2 | - | - | 18 | 19 | - |

* Annex I = Annex I of the EU Birds Directive; SPI = Species of Principal Importance; Red / Amber/ Green = BoCC5 red / amber / green listed species.

Table 3-4 Monthly peak counts of target species recorded during the intertidal surveys (November 2021 to February 2022)

| Species | Conservation Status* | November | December | January | February |
|-------------------|----------------------|-----------|-----------|---------|----------|
| Pintail | Amber | - | - | - | 4 |
| Sanderling | Amber | 15 | 33 | 20 | - |
| Teal | Amber | - | 6 | - | - |
| Wigeon | Amber | 39 | - | 4 | - |

* Annex I = Annex I of the EU Birds Directive (*Council Directive 79/409/EEC*); SPI = Species of Principal Importance; Red / Amber/ Green = BoCC5 red / amber / green listed species.

- 3.3.3 There were no records of Bewick's swan, common tern, little tern, ruff or shoveler during the intertidal surveys.
- 3.3.4 Pintail were recorded on four of 22 survey visits on 24 September 2020; 02 October 2020; 13 January 2021 and 01 February 2022. All records relate to birds flying over the sea within 300m of mean high water springs level. There was no evidence of birds foraging within the survey sectors. The peak pintail count was 18 birds on 13 January 2021, where the birds flew west an hour before high tide.
- 3.3.5 Sanderling were recorded on 18 of 22 survey visits, with records in every month from September 2020 to March 2021, and during all visits from November 2021 to February 2022. The distribution of records was fairly even within the survey sectors, with 57% of records in Sector 2. Birds were regularly recorded foraging in small numbers across both sectors. The peak count was 80 birds roosting over high tide on 03 November 2020.
- 3.3.6 Sandwich tern were recorded on four of 22 visits, with all records between September and October 2020. All records were of birds foraging offshore, with a peak count of three birds on 02 October 2020. There were no records between November 2021 and February 2022.
- 3.3.7 Teal were recorded on four of 22 visits on 02 October 2020; 13 January 2021; 12 February 2021; and 06 December 2021. Records consisted of three fly-over counts and a single record of a lone bird roosting (12 February 2021). There was no evidence of Teal foraging within the survey sectors. The peak count of teal was six birds on 06 December 2021.
- 3.3.8 Wigeon were recorded on six of 22 visits between 02 October 2020 and 11 February 2022. Numbers of birds recorded on visits remained low throughout the survey period, with a peak count of 39 birds flying over the sea on 18 November 2021. There were six observations of birds flying over the survey area, seven observations of birds loafing / preening on the sea and a single observation of eight birds foraging at high tide on 02 October 2020.

Secondary species

- 3.3.9 Secondary species account for 40 of the 45 species recorded during the intertidal survey, including:
- Nine species listed on Annex I of the Birds Directive (*Directive 2009/147/EC*) (black-throated diver, red-throated diver, great northern diver, guillemot, little egret, Mediterranean gull, golden plover, Slavonian grebe and barnacle goose);
 - Six Species of Principal Importance (SPI) (common scoter, dark-bellied brent goose, herring gull, black-tailed godwit, curlew and lapwing); and
 - Eight species listed on Birds of Conservation Concern (BoCC) Red list Stanbury et al. (2021) (common scoter, herring gull, lapwing, ringed plover, black-tailed godwit, dunlin, kittiwake, and Slavonian grebe).
- 3.3.10 **Table 3-5** below, shows peak monthly counts of secondary species recorded during the intertidal survey, September 2020 to March 2021. **Table 3-6** below,

shows peak monthly counts of secondary species recorded during the intertidal survey, November 2021 to February 2022. These peak counts represent the maximum number of secondary species within the survey area throughout the individual survey days. Peak counts presented below considered the outright peak number of birds during the survey effort and in-combination counts of simultaneously obtained ISS results. The peak counts shown in bold represent the peak count during the survey period September 2020 – March 2021 inclusive; and November 2021 - February 2022 inclusive.

Table 3-5 Monthly peak counts of secondary species recorded during the intertidal surveys September 2020 to March 2021

| SECONDARY SPECIES | | Sept 2020 | Oct 2020 | Nov 2020 | Dec 2020 | Jan 2021 | Feb 2021 | Mar 2021 |
|---------------------------------|----------------|-----------|------------|-----------|------------|-----------|-----------|-----------|
| Black-headed gull | Amber | - | 145 | 43 | - | 1 | 6 | 50 |
| Common gull | Amber | - | 178 | 18 | - | - | 70 | 2 |
| Common Scoter | SPI, Red | 19 | 1 | 1 | 4 | 18 | 4 | 1 |
| Cormorant | Green | 2 | 3 | 2 | - | 6 | 2 | 9 |
| Dark-bellied brent goose | SPI, Amber | 1 | 1 | 620 | 640 | 187 | 160 | 188 |
| Dunlin | Red | 6 | 1 | 3 | 5 | 6 | - | 4 |
| Gadwall | Amber | - | 1 | - | - | 2 | - | - |
| Gannet | Amber | 5 | - | - | 2 | 1 | 14 | 2 |
| Great crested grebe | Green | - | 1 | 1 | 6 | 24 | 3 | 18 |
| Great northern diver | Annex I, Amber | - | 1 | - | - | - | - | - |
| Grey plover | Amber | 3 | 6 | 71 | 47 | 37 | - | 7 |
| Guillemot | Annex I, Amber | - | - | - | 1 | 1 | - | - |
| Herring gull | SPI, Red | - | - | - | - | - | 2 | 26 |
| Knot | Amber | - | - | 1 | - | - | - | - |
| Lapwing | SPI, Red | - | - | - | - | - | 16 | - |

| SECONDARY SPECIES | | Sept 2020 | Oct 2020 | Nov 2020 | Dec 2020 | Jan 2021 | Feb 2021 | Mar 2021 |
|---------------------------------|----------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Lesser black-backed gull | Amber | - | - | - | - | - | - | 7 |
| Mediterranean gull | Annex 1, Amber | 149 | 56 | 26 | 9 | 13 | 20 | 6 |
| Oystercatcher | Amber | 6 | 16 | 7 | 4 | 12 | 8 | 15 |
| Red-breasted merganser | Green | - | - | 3 | 8 | 28 | 7 | 46 |
| Red-throated diver | Annex I | 1 | - | 1 | 12 | 7 | 2 | 1 |
| Ringed plover | Red | 14 | 4 | 19 | 27 | 4 | 7 | 3 |
| Slavonian grebe | Annex I, Red | - | - | 1 | - | - | - | 2 |
| Turnstone | Amber | 48 | 37 | 73 | 100 | 60 | 13 | 48 |

Table 3-6 Monthly peak counts of secondary species recorded during the intertidal survey November 2021 to February 2022

| SECONDARY SPECIES | | Nov 2021 | Dec 2021 | Jan 2022 | Feb 2022 |
|---------------------------------|----------------|-------------|-------------|-------------|-------------|
| Barnacle goose | Annex I, Amber | - | 1 | - | - |
| Black-tailed godwit | SPI, Red | - | - | 1 | - |
| Black-throated diver | Annex I, Amber | - | - | 1 | 1 |
| Common Scoter | SPI, Red | 5 | - | - | - |
| Cormorant | Green | 3 | 1 | 1 | 3 |
| Curlew | SPI, Red | 6 | 7 | - | 4 |
| Dark-bellied brent goose | SPI, Amber | 56 | 150 | 2 | 64 |

SECONDARY SPECIES

| | | Nov 2021 | Dec 2021 | Jan 2022 | Feb 2022 |
|------------------------|----------------|-------------|-------------|-------------|-------------|
| Dunlin | Red | 6 | 3 | 48 | 73 |
| Eider | Amber | - | 3 | - | - |
| Fulmar | Amber | - | - | 1 | - |
| Gannet | Amber | 1 | 6 | 1 | 1 |
| Golden plover | Annex I, Green | - | - | - | 1 |
| Great crested grebe | Green | 15 | 14 | 14 | 6 |
| Great northern diver | Annex I, Amber | - | - | 1 | - |
| Greylag goose | Amber | - | - | - | 1 |
| Grey plover | Amber | 47 | 37 | - | 7 |
| Guillemot | Annex I, Amber | 1 | 9 | 1 | 7 |
| Kittiwake | Red | - | 11 | 1 | 1 |
| Knot | Amber | 1 | - | - | - |
| Little egret | Annex I, Green | 1 | - | - | - |
| Mallard | Amber | - | - | - | 2 |
| Mediterranean gull | Annex 1, Amber | 109 | 108 | 40 | 44 |
| Mute swan | Green | - | - | 3 | 2 |
| Oystercatcher | Amber | 9 | 2 | - | 4 |
| Razorbill | Amber | 1 | 2 | - | 11 |
| Red-breasted merganser | Green | 13 | 27 | 5 | 21 |
| Red-throated diver | Annex I, Green | 1 | 14 | 10 | 7 |
| Ringed plover | Red | 16 | 4 | - | 10 |
| Shelduck | Amber | 1 | 5 | 7 | - |
| Slavonian grebe | Annex I, Red | - | 1 | 1 | 3 |
| Turnstone | Amber | 45 | 195 | 128 | 55 |

- 3.3.11 There were two secondary species recorded on all 22 survey visits: Mediterranean gull and Turnstone.
- 3.3.12 Mediterranean gull were recorded on all visits, with peak numbers ranging from two birds to 149 individuals recorded on 24 September 2020. Observations were spread across the count sectors and the tidal range, with birds foraging and preening / loafing widely within the recording area. During winter 2020-21 survey, following the early autumn peak, numbers dropped in October 2020 to 56 birds before continuing to drop through November 2020 to a regular wintering number of five to 20 individuals. During winter 2021-22 survey, numbers peaked at 109 individuals recorded on 30 November 2021, numbers remained high through December 2021 before dropping to between three and 40 birds for the remainder of the survey period.
- 3.3.13 Turnstone were the most frequently recorded species during the survey period, with 226 records across 22 visits. Observations were spread across the count sectors and the tidal range with most records (177 of 226) showing birds foraging along the strandline and shingle beach. There was a noticeable reduction in turnstone numbers during the high tide period, as birds moved to the groynes at Littlehampton to roost.
- 3.3.14 Of the remaining secondary species, grey plover and great crested grebe were noted on 18 visits; with red-throated diver noted on 17 visits and dark-bellied brent goose noted on 16 visits. Other secondary species were recorded less often, and in small numbers only typically <10 individuals excepting dunlin, gannet, lapwing and red-breasted merganser where single flocks of 73, 14, 16 and 46 respectively increased the peak/mean counts considerably.
- 3.3.15 There were 68 records of brent goose during the survey period with 35 records within Sector 1 and 33 records in Sector 2. Of these records 25 records were of flocks foraging, 33 records were of birds flying over the count sector and ten were of birds loafing / preening. The records are spread across the tidal range, though there are more records (36/68) during the low tide cycle of low tide +/-3hours, than of high tide +/-3 hours (32/68). Numbers of brent goose using the survey area peaked between late November 2020 (25/11/2020) to mid-December 2020 (09/12/20) visits with 620 and 650 birds, respectively. During the winter survey period 2020-21 brent goose were observed foraging in the fields directly behind the seawall and also foraging on the sea during early morning counts. During the winter survey period 2021-22 there were no observations of brent geese foraging in the fields directly behind the seawall or on the beach at Climping.
- 3.3.16 There were 106 records of grey plover during the survey period with 47 records within Sector 1 and 59 records in Sector 2. Grey plover used the beach and shingle areas within Sector 1 to forage frequently with 34 observations of birds foraging and thirteen observations of preening / loafing. Sector 2 was predominantly used for preening / loafing with 36 of 59 observations noting those behaviours. There were 18 records of grey plover foraging within Sector 2, and five fly-over records of birds moving between sectors or moving east toward Littlehampton. The peak count of grey plover was 63 individuals foraging within Sector 1 on 18 January 2022.

- 3.3.17 There were 22 records of common scoter during the survey period, with 15 records within 300m of the shore in Sector 1 and 7 records within 300m of the shore in Sector 2. Records were spread across the tidal range, with 13 observations of birds flying over sectors, eight loafing / preening and a single record of three birds foraging within 300m of the shoreline in Sector 1. The majority of records (20 of 22) were less than 10 birds, with the exception of 18 recorded on one occasion on 13 January 2021 and a peak count of 19 birds on 02 October 2020. Common scoter were regularly recorded outside of the recording area at more than 1 kilometre from the shoreline.

3.4 Winter bird survey results

- 3.4.1 Three target species were recorded during the winter bird surveys across the Arun and Adur Valleys within 500m of the onshore part of the draft Order Limits: pintail, teal and wigeon. These four species are listed as a qualifying feature of Arun Valley SPA/Ramsar site. There were no records of Bewick's swan, shoveler or ruff within 500m of the proposed DCO Order Limits during the winter bird survey.
- 3.4.2 During the winter bird surveys 2020-21, there were five records of target species within the Arun Valley survey area and nine records of target species within the Adur Valley survey area. During the winter bird surveys 2021-22, there were five records of target species within the Arun Valley survey area and ten records of target species within the Adur Valley survey area. **Table 3-7** below, summarises all records of target species recorded within the winter bird surveys (including those more than 500m from the proposed DCO Order Limits).

Table 3-7 Summary of target species recorded during the winter bird surveys

| Species | Date | UK National Grid reference | Number | Survey Area | Closest distance and direction to proposed DCO Order Limits (metres) |
|---------|------------|----------------------------|--------|-------------|--|
| Wigeon | 16.10.2020 | TQ 02235 04937 | 7 | Arun Valley | 290 North |
| Wigeon | 12.11.2020 | TQ 02235 04937 | 78 | Arun Valley | 290 North |
| Wigeon | 17.12.2020 | TQ 02235 04937 | 62 | Arun Valley | 290 North |
| Wigeon | 19.01.2021 | TQ 02235 04937 | 100 | Arun Valley | 290 North |
| Wigeon | 02.02.2021 | TQ 02235 04937 | 40 | Arun Valley | 290 North |

| Species | Date | UK National Grid reference | Number | Survey Area | Closest distance and direction to proposed DCO Order Limits (metres) |
|-----------------|-------------|-----------------------------------|---------------|--------------------|---|
| Wigeon | 17.12.2020 | TQ19741821 | 16 | Adur Valley | 30 North-east |
| Shoveler | 19.01.2021 | TQ 19620 16853 | 15 | Adur Valley | 520 South-east |
| Teal | 19.01.2021 | TQ 19620 16853 | 82 | Adur Valley | 520 East |
| Teal | 19.01.2021 | TQ 19401 16418 | 1+ | Adur Valley | 700 East |
| Teal | 19.01.2021 | TQ 19829 18342 | 151 | Adur Valley | 75 East |
| Wigeon | 19.01.2021 | TQ 19829 18342 | 600 | Adur Valley | 75 East |
| Wigeon | 02.02.2021 | TQ1975 1813 | 90 | Adur Valley | Within proposed DCO Order Limits |
| Teal | 12.03.2021 | TQ 19871 18132 | 90 | Adur Valley | 100 North-east |
| Wigeon | 12.03.2021 | TQ 19871 18132 | 122 | Adur Valley | 100 North-east |
| Wigeon | 17.11.2021 | TQ 02235 04937 | 58 | Arun Valley | 290 North |
| Wigeon | 01.12.2021 | TQ 02235 04937 | 116 | Arun Valley | 290 North |
| Wigeon | 12.01.2022 | TQ 02235 04937 | 86 | Arun Valley | 290 North |
| Teal | 12.01.2022 | TQ 02235 04937 | 3 | Arun Valley | 290 North |
| Wigeon | 02.02.2022 | TQ 02235 04937 | 48 | Arun Valley | 290 North |
| Wigeon | 17.11.2021 | TQ 1977 1834 | 26 | Adur Valley | 50 east |

| Species | Date | UK National Grid reference | Number | Survey Area | Closest distance and direction to proposed DCO Order Limits (metres) |
|---------|------------|----------------------------|--------|-------------|--|
| Teal | 17.11.2021 | TQ 1977 1834 | 34 | Adur Valley | 50 east |
| Wigeon | 01.12.2021 | TQ 1995 1876 | 99 | Adur Valley | Within proposed DCO Order Limits |
| Teal | 01.12.2021 | TQ 1995 1876 | 41 | Adur Valley | Within proposed DCO Order Limits |
| Wigeon | 12.01.2022 | TQ 1980 1833 | 158 | Adur Valley | 60 east |
| Teal | 12.02.2022 | TQ 1980 1833 | 80 | Adur Valley | 60 east |
| Teal | 02.02.2022 | TQ 1980 1834 | 6 | Adur Valley | 60 east |
| Pintail | 02.02.2022 | TQ 1980 1834 | 4 | Adur Valley | 60 east |
| Teal | 02.02.2022 | TQ 1957 1838 | 7 | Adur Valley | Within proposed DCO Order Limits |
| Wigeon | 02.02.2022 | TQ 1957 1838 | 4 | Adur Valley | Within proposed DCO Order Limits |

- 3.4.3 Target species records from the Arun Valley survey area identified a flock of wigeon that wintered on a small private pond by St Mary Magdalene's Church in Lyminster during both winter survey periods. The peak count was 116 individuals on 01 December 2021. There was a single observation of three teal with the wigeon flock at St Magdalene's Church 12 January 2022. All target species records from the Arun Valley survey area are from outside of (though within 500m of) the onshore part of the proposed DCO Order Limits. The ponds at St Mary Magdalene's Church are 290m outside of the onshore part of the proposed DCO Order Limits at the nearest point, screened from the development by industrial and residential buildings within Lyminster
- 3.4.4 There were nineteen observations of target species from the Adur Valley survey area, nine records of teal, eight records of wigeon and single records of shoveler and pintail. The results suggest that target species numbers in the Adur Valley peaked in January 2021 with a single day peak of 234 teal (combined counts), 15 shoveler and 600 wigeon. Peak counts in winter 2021-22 also occurred in January,

with 158 wigeon and 80 teal observed in a single day. There was a single pintail record of four birds 02 February 2022.

- 3.4.5 Overall, there were five observations of target species within the onshore part of the proposed DCO Order Limits during the winter bird surveys. Three records of wigeon and two teal records. The wigeon records from within the onshore part of the proposed DCO Order Limits were 90 birds observed flying over the onshore part of the proposed DCO Order Limits at TQ1975 1813 on 02 February 2021; 99 birds foraging, preening and loafing within flooded fields at TQ 1995 1876 on 01 December 2021; and four birds foraging within flooded fields at TQ 1957 1838 on 02 February 2022. Teal records from within the onshore part of the proposed DCO Order Limits were of birds foraging with wigeon flocks and included: 41 birds at TQ 1995 1876 on 01 December 2021; and seven birds at TQ 1957 1838 on 02 February 2022.
- 3.4.6 The peak daily count of target species across both survey areas was on 19 January 2021 with a combined total of 234+ teal, 15 shoveler and 700 wigeon.
- 3.4.7 As part of the additional survey effort for winter 2021-22, there were three records of Bewick's swan recorded foraging within Burpham water meadows: Two adults were recorded at TQ 03568 08948 on 13 December 2021; eleven individuals (eight adults and three cygnets) were recorded at TQ 03422 08742 on 12 January 2022; and a peak count of 15 individuals were recorded at TQ 03422 08742 02 February 2022 (twelve adults, three cygnets). All Bewick's swan records are >2km outside of the proposed DCO Order Limits; shielded from the onshore cable corridor by an escarpment and blocks of ancient woodland.
- 3.4.8 There were 79 secondary species recorded during the winter bird surveys including:
- Six species listed on Annex I of the Birds Directive (Directive 2009/147/EC) (little egret, marsh harrier, Mediterranean gull, kingfisher, red kite and Peregrine);
 - Six Wildlife and Countryside Act (WCA, 1981) (as amended), Schedule 1 listed species (Cetti's warbler, kingfisher, marsh harrier, Mediterranean gull, peregrine and red kite);
 - Fourteen SPI (NERC, 2006) (bullfinch, corn bunting, dunnock, herring gull, lapwing, lesser redpoll, linnet, marsh tit, reed bunting, skylark, song thrush, starling, white-fronted goose and yellowhammer); and
 - Thirteen species listed on BoCC (Stanbury et al., 2021) Red list (corn bunting, fieldfare, grey partridge, herring gull, house sparrow, lapwing, linnet, marsh tit, mistle thrush, skylark, starling, white-fronted goose and yellowhammer).
- 3.4.9 Results presented below relate to waterfowl and waders for which full count and behavioural data is available.
- 3.4.10 Six little egret records centred around the rivers with birds foraging along the Arun and Adur. The peak count was four individuals on 12 March 2021.
- 3.4.11 Mediterranean gull are listed on Annex I of the Birds Directive (EU) (*Directive 2009/147/EC*) and as Schedule 1 (Sch.1) listed species on the Wildlife and

Countryside Act 1981 (as amended) (WCA, 1981) affording them heightened protection through the breeding season. There were four records of Mediterranean gull throughout the survey period with all records around the River Arun. The peak count was seven individuals on 01 December 2021.

- 3.4.12 Peregrine are listed on Annex I of the Birds Directive (EU) (*Directive 2009/147/EC*) and Sch.1 listed on WCA 1981. There were two observations of Peregrine during the winter bird surveys, both records were within 500m of the onshore part of the proposed DCO Order Limits with a peak count of three individuals on 16 October 2020, where two adults and a juvenile bird were foraging together over the River Arun at Tortington.
- 3.4.13 There were four records of marsh harrier during the winter bird surveys. All records related to birds foraging over floodplains adjacent to the River Arun, with three records of individual birds, and a peak count of two birds on 01 December 2021.
- 3.4.14 There were three records of red kite during the winter bird surveys. All records were of birds foraging in the Adur Valley survey area, with a peak count of two birds on 12 November 2020.
- 3.4.15 There were sixteen observations of lapwing during the winter bird surveys. Ten records from the Arun Valley survey area and six from the Adur Valley. A peak count within the Arun Valley (overall peak) was 389 birds preening / loafing in the fields by Tortington on 17 November 2021, further records from the Arun Valley range from two individuals to 307, with a mean of 161 individuals. The peak count for the Adur Valley was 110 birds preening / loafing on 12 January 2022 within 500m of the onshore part of the proposed DCO Order Limits, further records from the Adur Valley range from 13 individuals to 107, the mean count was 73 individuals.
- 3.4.16 There were three records of (greater) white-fronted goose within the winter bird surveys, all records were from the River Adur survey area and include repeat observations of the same flock. A peak count of 30 birds was recorded on 17 December 2020, in-keeping with a national influx at the time. There were two further observations of single birds, latterly associating with greylag and Canada goose flocks on 12 March 2021.
- 3.4.17 Herring gull were widespread within the survey areas in relatively low numbers, the threshold for recording gulls accurately is flock sizes of 20+ birds, this count was achieved on a single occasion within the Arun Valley survey area on 19 January 2021, where 130 birds were foraging in flooded fields.
- 3.4.18 Whilst farmland birds and passerines make up most secondary species records, data recorded notes species presence only.
- 3.4.19 A full list of species observed during the winter bird surveys is presented in **Annex B**.

3.5 Comparison of results across winter survey periods

- 3.5.1 Results of both the winter bird survey and the intertidal survey remained consistent across wintering periods 2020/21 and 2021/22. Whilst survey effort was reduced

during the second wintering period to four months of data gathering rather than six, the spatial results, target species records and counts of target species were similar across both seasons.

- 3.5.2 Within the intertidal surveys the number of species recorded, their abundance and behaviours recorded were similar across both wintering periods (Five target species and 30 secondary species during winter 2020/21 and four target species and 31 secondary species during 2021/22) with similar levels of disturbance seen along the shoreline.
- 3.5.3 There was a notable reduction in brent goose observations during the 2021/22 intertidal surveys with 16 records, including a peak count of 150 birds on the 06 December 2021 compared with the 52 records, including a peak count of 650 birds on 09 December 2020. This reduction in both observations and number is considered to be linked with local crop-rotations and the presence of less palatable crops directly behind the seawall during the 2021/22 survey period.
- 3.5.4 Numbers of grebes, divers, and seabirds offshore but within 300m of Mean High Water Springs (MHWS) were consistent across both seasons, with a slight increase in seabird diversity during the 2021/22 season. This increase is linked to local weather conditions during the survey period with an extended period of strong onshore winds and rough seas.
- 3.5.5 During the winter bird surveys 2020/21 there were three observations of target species within 500m of the onshore part of the proposed DCO Order Limits compared with four observations during the 2021/22 wintering period.
- 3.5.6 Target species favoured similar areas across both wintering periods with a small private waterbody at St Mary Magdalene's Church near Lyminster providing all records of target species within the Arun Valley, and the flooded fields north-west of the River Adur providing all records of target species within the Adur valley.
- 3.5.7 Within the Arun valley during the 2020/21 wintering period there were five records of wigeon utilising the waterbody at St Mary Magdalene's Church, including a peak count of 100 wigeon on 19 January 2021, compared with four records of wigeon and a peak count of 116 birds on 01 December 2021. There was a single record of three teal foraging within the waterbody at St Mary Magdalene's Church on 12 January 2022.
- 3.5.8 Within the Adur valley during the 2020/21 wintering period extensive flooding within the fields adjacent to the River Adur provided foraging opportunity for large flocks of waterbirds including target species: wigeon, teal and shoveler. There were five records of wigeon, four records of teal and a single record of shoveler. All peak counts occurred 19 January 2021: 600 wigeon; 241 teal; and 15 shoveler.
- 3.5.9 Within the 2021/22 wintering period, flooding around the Adur was much reduced from the previous year with numbers of birds utilising the area reflecting a reduction in available foraging habitat. There were four records of wigeon, five records of teal and a single record of pintail. Wigeon and teal numbers again peaked in January with counts of 158 wigeon and 80 teal foraging on 12 January 2022; there was a single record of four pintail on 02 February 2022.

4. Glossary

| Term (Acronym) | Definition |
|----------------|--|
| BF | Beaufort |
| BoCC | Birds of Conservation Concern |
| BTO | British Trust for Ornithology |
| Defra | Department for Environment, Food and Rural Affairs |
| EIA | Environmental Impact Assessment |
| EEC | European Economic Community |
| EU | European Union |
| ISS | Instantaneous Scan Sample |
| JNCC | Joint Nature Conservation Committee |
| Km | Kilometre |
| MHWS | Mean High Water Springs |
| RSPB | Royal Society for the Protection of Birds |
| SOS | Sussex Ornithological Society |
| SxBRC | Sussex Biological Records Centre |
| SPA | Special Protected Area |
| SSSI | Site of Special Scientific Interest |
| WCA | Wildlife and Countryside Act 1981 (as amended) |

5. References

Bibby, C.J., Burgess, N.D., Hill, D.A., and Mustoe, S.H., (2000). *Bird Census Techniques, 2nd Ed.* Academic Press, London.

Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds. [Online] Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:31979L0409&from=EN> [Accessed 30 May 2023].

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild flora and fauna. [Online] Available at: <https://www.legislation.gov.uk/eudr/1992/43/introduction> [Accessed 30 May 2023].

Department for Environment, Food and Rural Affairs (Defra), (2021). *MAGIC webpage.* [Online]. Available at <https://magic.defra.gov.uk/> [Accessed 30 May 2023].

Directive 2009/147/EC of The European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (codified version). [Online] Available at <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0147&from=EN> [Accessed 30 May 2023].

Joint Nature Conservation Committee (JNCC), (n.d.). *JNCC Resource Hub.* [Online]. Available at: <https://jncc.gov.uk/> [Accessed 30 May 2023].

Natural England, (n.d.). *Designated Sites View.* [Online]. Available at: <https://designatedsites.naturalengland.org.uk/> [Accessed 30 May 2023].

Natural Environment and Rural Communities Act., (2006). [Online]. Available at <https://www.legislation.gov.uk/ukpga/2006/16/section/41> [Accessed 30 May 2023].

The Conservation of Habitats and Species Regulations 2017. [Online] Available at: <https://www.legislation.gov.uk/uksi/2017/1012/introduction/made> [Accessed 30 May 2023].

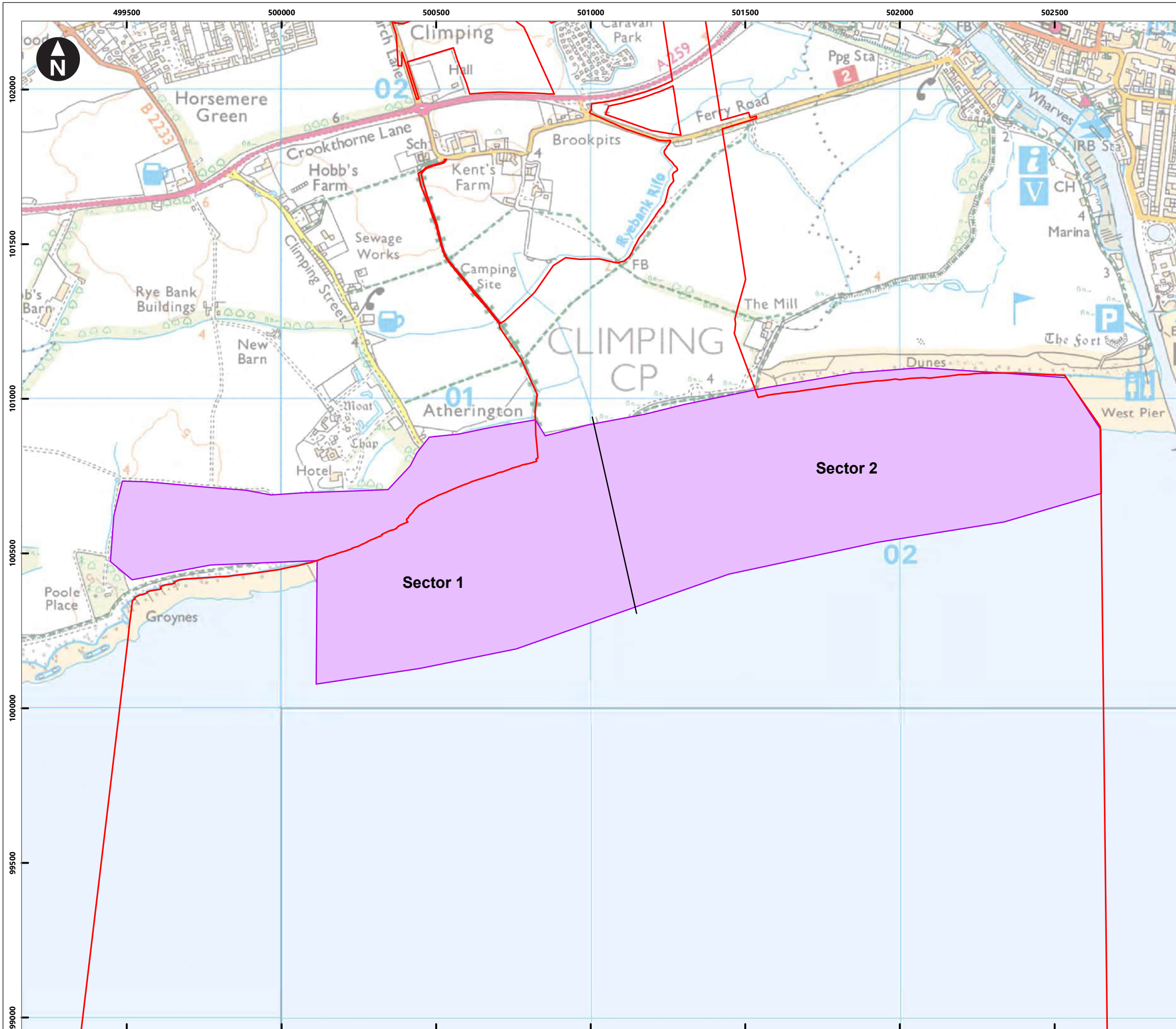
Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. 2021. *The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain.* British Birds, 114, pp. 723-747.

Wildlife and Countryside Act 1981. [Online] Available at: [Accessed 30 May 2023].

Annex A

Figures

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 Ordnance Survey 0100031673

Key

- Proposed DCO Order
- Intertidal Survey Area

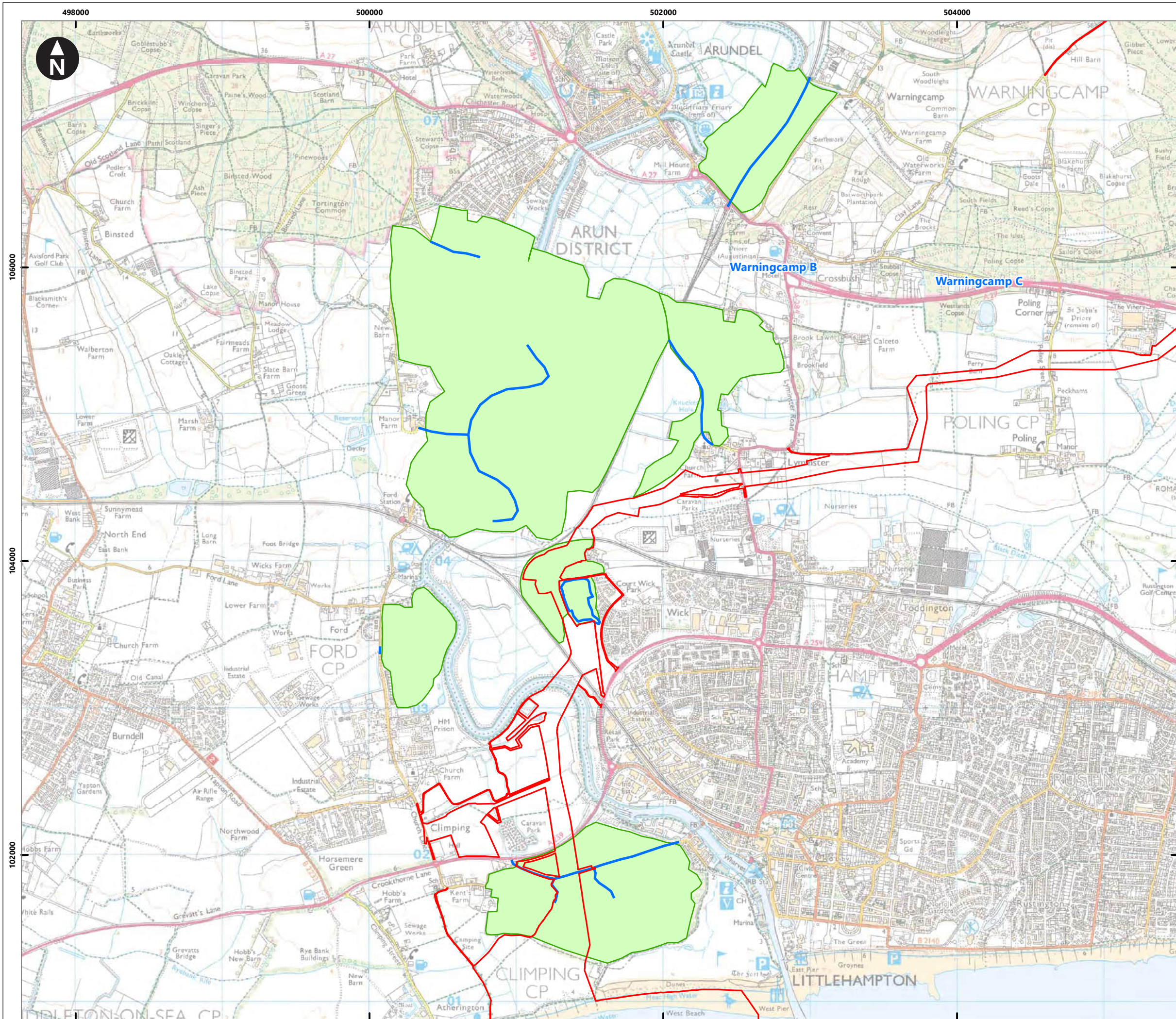


Kilometres
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 1:12,000
 British National Grid Transverse Mercator

Rampion Extension Development


Rampion 2 Offshore Wind Farm
 Figure 23.2.1
 Ornithology Intertidal Survey Area

| | | | | |
|--|--------------------|---------------------|---------------------------|------------------|
| System Identifier: 42285-WSP-ES-ON-FG-OO-2105 | | | | Version: 1.0 |
| Company: WSP | Drawn By: HADJE | Chk/Aprvd: KIRBA | Drawn Date: 01/06/2023 | Status: FINAL |



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 Ordnance Survey 0100031673

Key

- DCO Order Limits
- Winter Bird Survey Area
- Terrestrial Walkover Transect

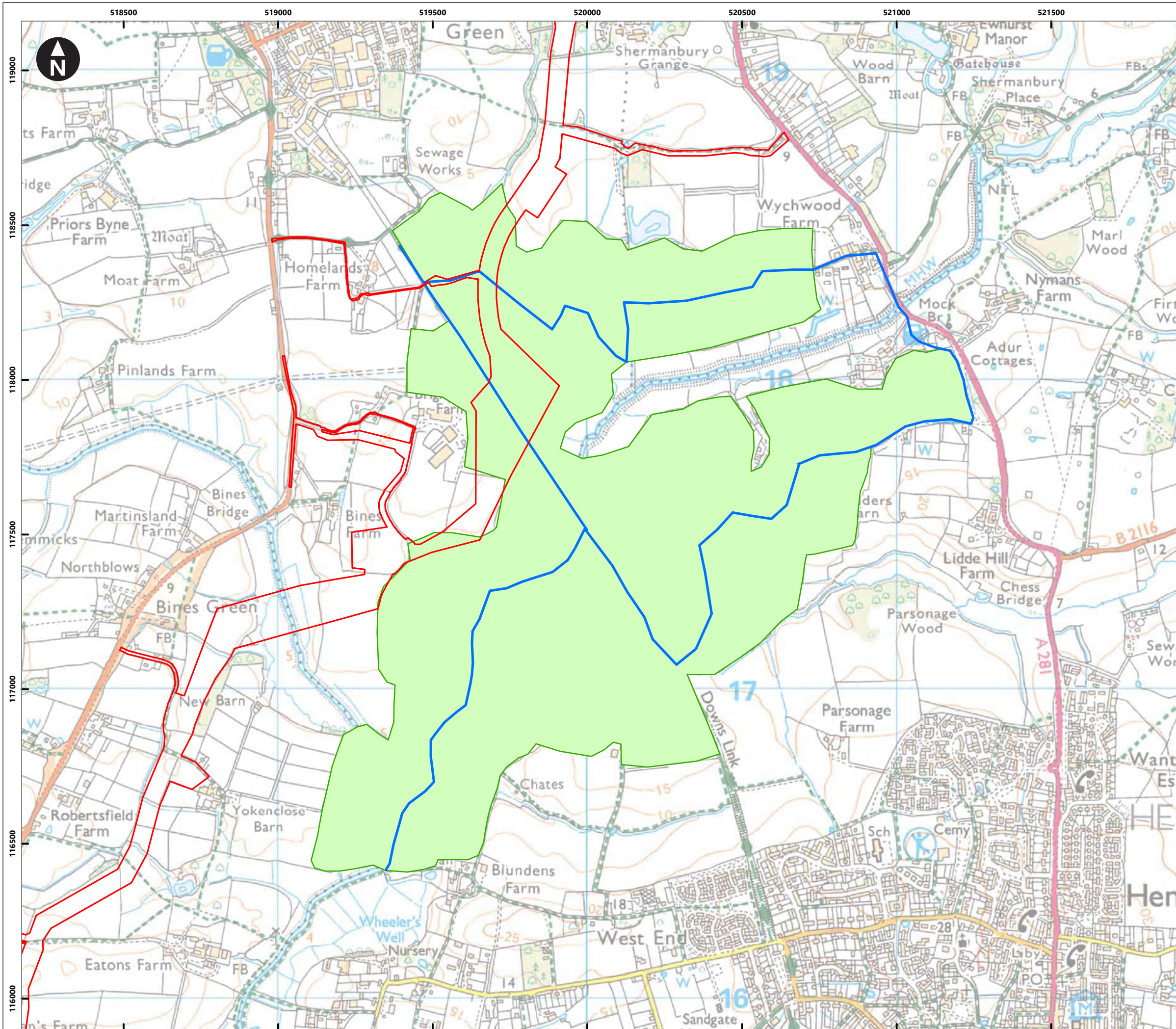
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 Kilometres
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 British National Grid Transverse Mercator

Rampion Extension Development

Rampion 2 Offshore Wind Farm

Figure 22.3.2 Ornithology Winter bird survey area - Arun Valley

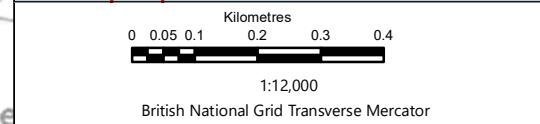
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| Status: DRAFT | | | |



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 Ordnance Survey 0100031673

Key

- Proposed DCO Order Limits
- Winter Bird Survey Area
- Terrestrial Walkover Transect



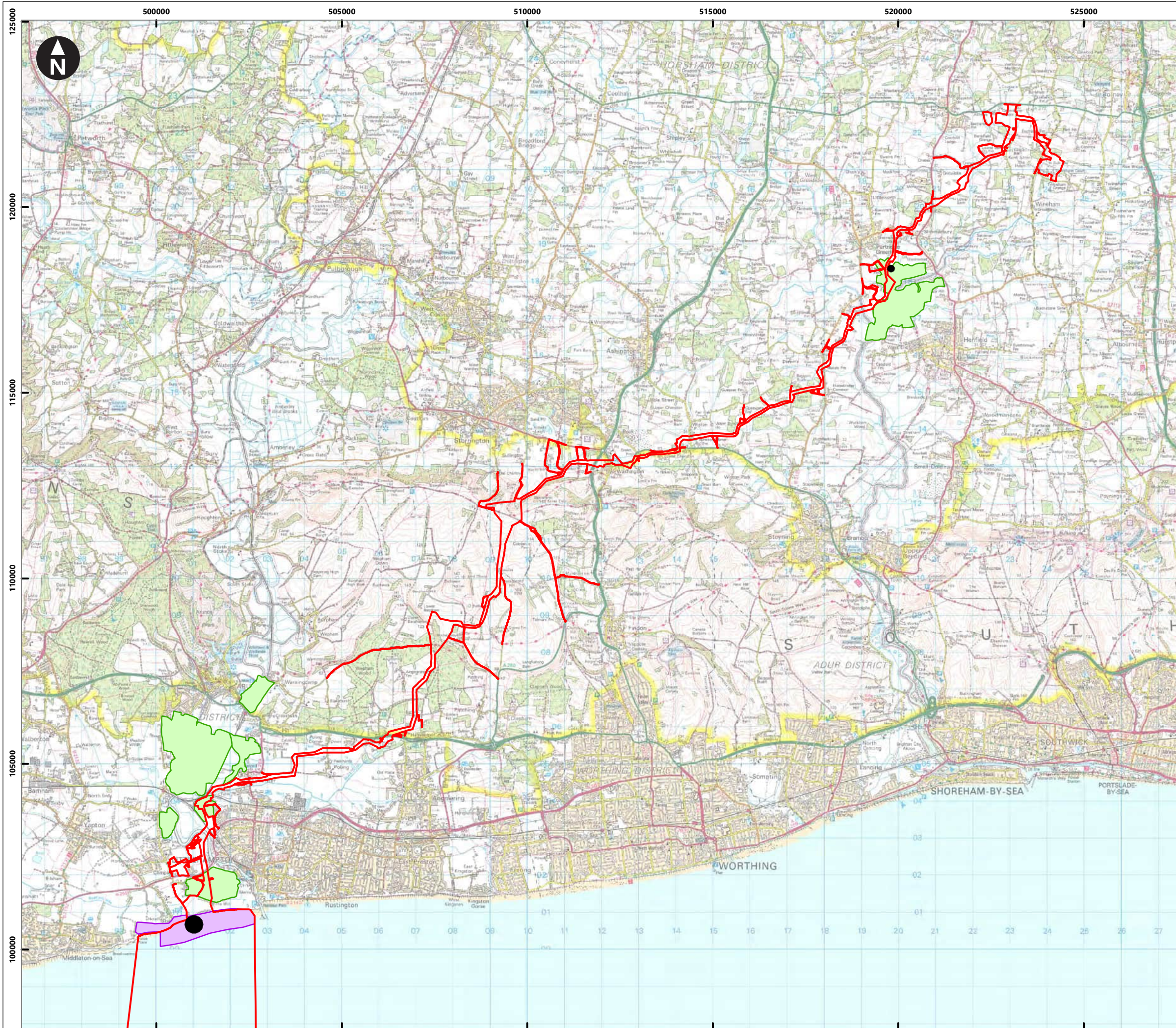
Rampion Extension Development



Rampion 2 Offshore Wind Farm

Figure 22.3.3 Ornithology Winter bird survey area - Adur Valley

| | | | | |
|----------------------------|-----------|-----------|-------------|----------|
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| 42285-WSP-ES-ON-FG-OO-9961 | | | | 1.0 |
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| WSP | HADJE | SUTET | 02/06/2023 | FINAL |



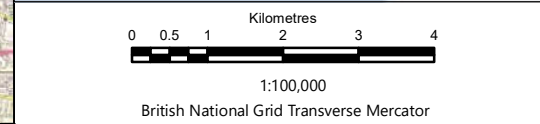
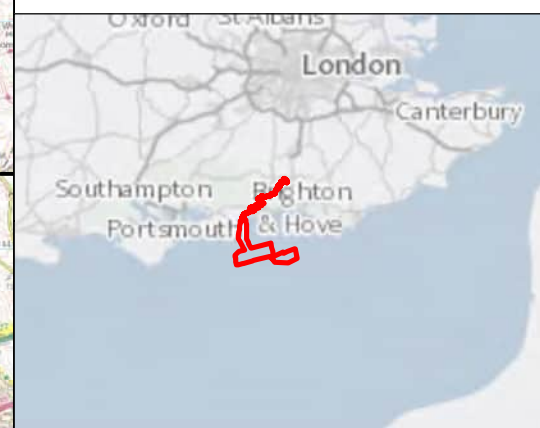
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 Ordnance Survey 0100031673

Key

- Proposed DCO Order Limits
- Intertidal Survey Area
- Winter Bird Survey Area

Pintail Species Count:

- 1-4
- 5 - 35



Rampion Extension Development

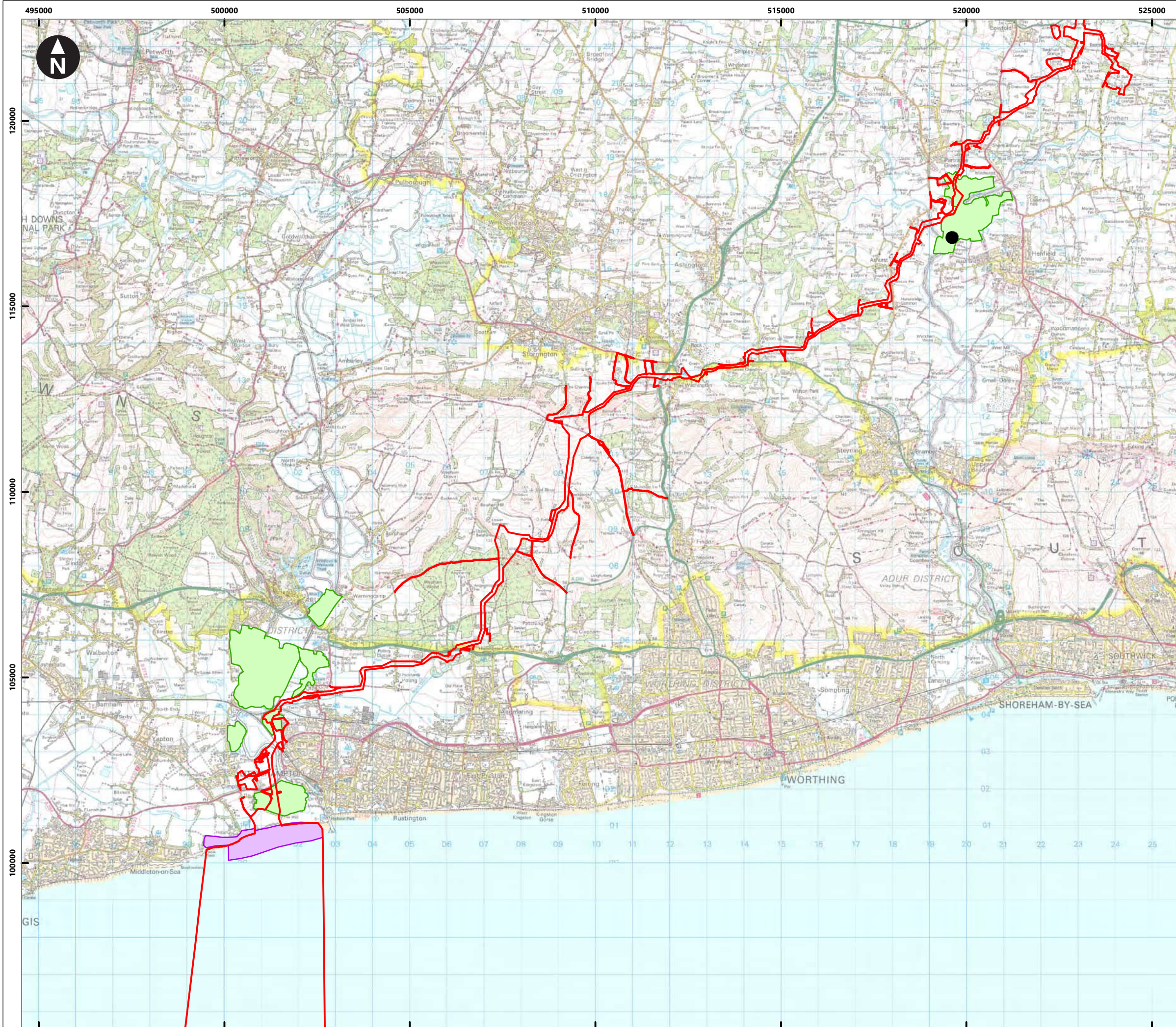


Rampion 2 Offshore Wind Farm

Figure 22.3.4 Combined cumulative counts of pintail recorded during all ornithology surveys winter 2020/21 and 2021/22

Environmental Statement

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| System Identifier: 42285-WSPE-ES-ON-FG-OO-2411 | | | | Version: 1.0 |
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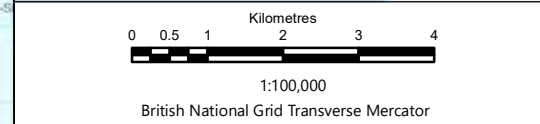
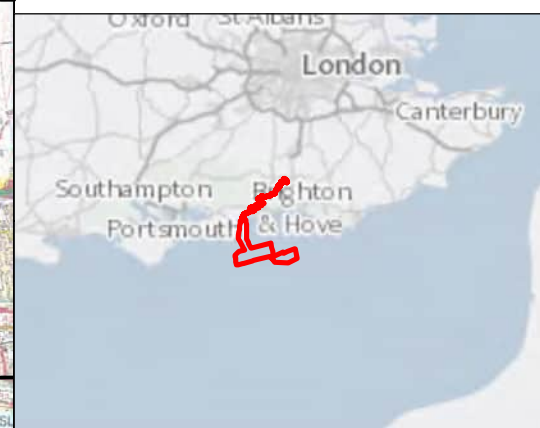
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 Ordnance Survey 0100031673

Key

- Proposed DCO Order Limits
- Winter bird Survey Area
- Intertidal Survey Area

Shoveler Species Count:

- 15



Rampion 2 Offshore Wind Farm

Figure 22.3.5 Combined cumulative counts of shoveler recorded during all ornithology surveys winter 2020/21 and 2021/22

Environmental Statement

| | |
|---|-----------------|
| System Identifier: 42285-WSPE-ES-ON-FG-OO-4736 | Version: 1.0 |
|---|-----------------|

| | | | | |
|-----------------|--------------------|---------------------|---------------------------|------------------|
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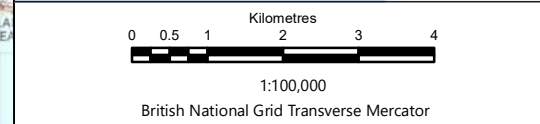
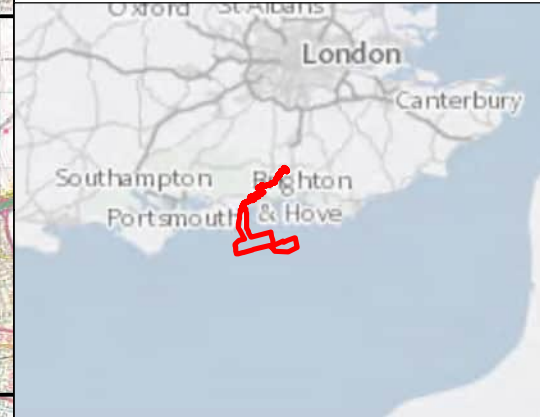
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 Ordnance Survey 0100031673

Key

- Proposed DCO Order Limits
- Winter bird Survey Area
- Intertidal Survey Area

Teal Species Count:

- 1 - 10
- 11 - 50
- 51 - 100
- 101 - 151



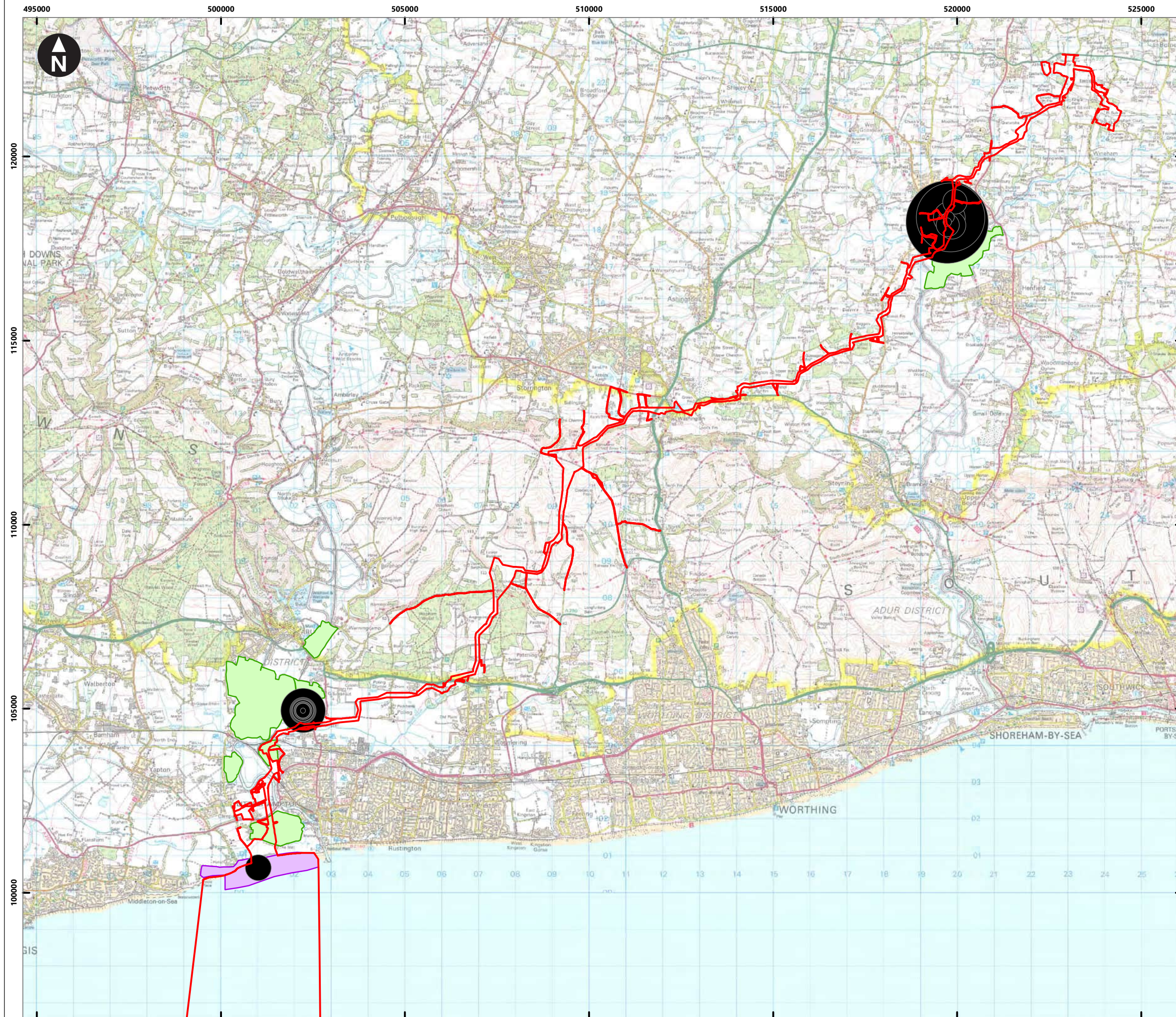
Rampion 2 Offshore Wind Farm

Figure 22.3.6 Combined Cumulative counts of teal recorded during all ornithology surveys winter 2020/21 and 2021/22

Environmental Statement

| | |
|---|-----------------|
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|---|-----------------|

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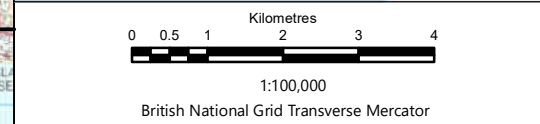
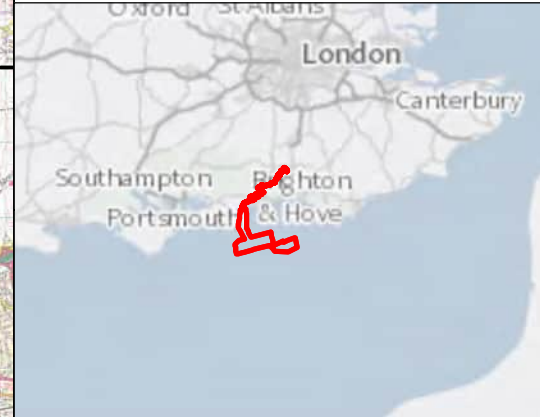
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 Ordnance Survey 0100031673

Key

- Proposed DCO Order Limits
- Winter bird Survey Area
- Intertidal Survey Area

Wigeon Species Count:

- 10
- 100
- 500
- 1,000



Rampion Extension Development



Rampion 2 Offshore Wind Farm

Figure 22.3.7 Combined Cumulative counts of wigeon recorded during all ornithology surveys winter 2020/21 and 2021/22

Environmental Statement

| | | |
|---|--------------------|--------------------|
| System Identifier: 42285-WSPE-ES-ON-FG-OO-5113 | | Version: 1.0 |
| Company: WSP | Drawn By: HADJE | Chk/Prvd: SUTET |
| Drawn Date: 20/04/2023 | Status: FINAL | |

Annex B

Species records

Table B-1 below lists all species recorded during the intertidal surveys September 2020 to March 2021 inclusive.

Table B-1 Species recorded during the intertidal surveys September 2020 to March 2021

| Species | Scientific name |
|--------------------------|-----------------------------------|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> |
| Black redstart | <i>Phoenicurus ochruros</i> |
| Cormorant | <i>Phalacrocorax carbo</i> |
| Common gull | <i>Larus canus</i> |
| Common scoter | <i>Melanitta nigra</i> |
| Dark-bellied brent goose | <i>Branta bernicla</i> |
| Dunlin | <i>Calidris alpina</i> |
| Gannet | <i>Morus bassanus</i> |
| Great black-backed gull | <i>Larus marinus</i> |
| Great crested grebe | <i>Podiceps cristatus</i> |
| Great northern diver | <i>Gavia immer</i> |
| Grey heron | <i>Ardea cinerea</i> |
| Grey plover | <i>Pluvialis squatarola</i> |
| Guillemot | <i>Uria aalge</i> |
| Herring gull | <i>Larus argentatus</i> |
| Kingfisher | <i>Alcedo atthis</i> |
| Knot | <i>Calidris canutus</i> |
| Lapwing | <i>Vanellus vanellus</i> |
| Lesser black-backed gull | <i>Larus fuscus</i> |

| Species | Scientific name |
|-------------------------------|-----------------------------------|
| Little egret | <i>Egretta garzetta</i> |
| Little gull | <i>Hydrocoloeus minutus</i> |
| Mute swan | <i>Cygnus olor</i> |
| Mediterranean gull | <i>Ichthyaetus melanocephalus</i> |
| Oystercatcher | <i>Haematopus ostralegus</i> |
| Pintail | <i>Anas acuta</i> |
| Purple sandpiper | <i>Calidris maritima</i> |
| Red-throated diver | <i>Gavia stellata</i> |
| Red-breasted merganser | <i>Mergus serrator</i> |
| Ringed plover | <i>Charadrius hiaticula</i> |
| Snipe | <i>Gallinago gallinago</i> |
| Sanderling | <i>Calidris alba</i> |
| Sandwich tern | <i>Thalasseus sandvicensis</i> |
| Shelduck | <i>Tadorna tadorna</i> |
| Slavonian grebe | <i>Podiceps auritus</i> |
| Teal | <i>Anas crecca</i> |
| Turnstone | <i>Arenaria interpres</i> |
| Wigeon | <i>Mareca penelope</i> |

Table B-2 below lists all species recorded during the winter bird surveys September 2020 to March 2021 inclusive.

Table B-2 Species recorded during the winter bird surveys September 2020 to March 2021

| Species | Scientific name |
|--------------------------|-----------------------------------|
| Blackbird | <i>Turdus merula</i> |
| Black-headed gull | <i>Chroicocephalus ridibundus</i> |
| Blue tit | <i>Cyanistes caeruleus</i> |

| Species | Scientific name |
|-------------------------|------------------------------|
| Bullfinch | <i>Pyrrhula pyrrhula</i> |
| Buzzard | <i>Buteo buteo</i> |
| Canada goose | <i>Branta canadensis</i> |
| Chaffinch | <i>Fringilla coelebs</i> |
| Common gull | <i>Larus canus</i> |
| Common sandpiper | <i>Actitis hypoleucos</i> |
| Coal tit | <i>Parus ater</i> |
| Collared dove | <i>Streptopelia decaocto</i> |
| Coot | <i>Fulica atra</i> |
| Cormorant | <i>Phalacrocorax carbo</i> |
| Corn bunting | <i>Emberiza calandra</i> |
| Dunnock | <i>Prunella modularis</i> |
| Egyptian goose | <i>Alopochen aegyptiaca</i> |
| Fieldfare | <i>Turdus pilaris</i> |
| Firecrest | <i>Regulus ignicapilla</i> |
| Gadwall | <i>Mareca strepera</i> |
| Goldcrest | <i>Regulus regulus</i> |
| Goldfinch | <i>Carduelis carduelis</i> |
| Great tit | <i>Parus major</i> |
| Grey heron | <i>Ardea cinerea</i> |
| Grey wagtail | <i>Motacilla cinerea</i> |
| Greylag goose | <i>Anser anser</i> |
| Herring gull | <i>Larus argentatus</i> |
| House sparrow | <i>Passer domesticus</i> |
| Kestrel | <i>Falco tinnunculus</i> |
| Lapwing | <i>Vanellus vanellus</i> |

| Species | Scientific name |
|---------------------------------|-----------------------------------|
| Lesser black-backed gull | <i>Larus fuscus</i> |
| Lesser redpoll | <i>Acanthis cabaret</i> |
| Linnet | <i>Linaria cannabina</i> |
| Little egret | <i>Egretta garzetta</i> |
| Little grebe | <i>Tachybaptus ruficollis</i> |
| Long-tailed tit | <i>Aegithalos caudatus</i> |
| Mallard | <i>Anas platyrhynchos</i> |
| Marsh harrier | <i>Circus aeruginosus</i> |
| Marsh tit | <i>Poecile palustris</i> |
| Meadow pipit | <i>Anthus pratensis</i> |
| Mediterranean gull | <i>Ichthyaetus melanocephalus</i> |
| Mistle thrush | <i>Turdus viscivorus</i> |
| Moorhen | <i>Gallinula chloropus</i> |
| Mute swan | <i>Cygnus olor</i> |
| Peregrine | <i>Falco peregrinus</i> |
| Red kite | <i>Milvus milvus</i> |
| Redshank | <i>Tringa totanus</i> |
| Redwing | <i>Turdus iliacus</i> |
| Reed bunting | <i>Emberiza schoeniclus</i> |
| Shoveler | <i>Spatula clypeata</i> |
| Siskin | <i>Spinus spinus</i> |
| Skylark | <i>Alauda arvensis</i> |
| Snipe | <i>Gallinago gallinago</i> |
| Song thrush | <i>Turdus philomelos</i> |
| Sparrowhawk | <i>Accipiter nisus</i> |
| Starling | <i>Sturnus vulgaris</i> |

| Species | Scientific name |
|---------------------|----------------------------|
| Stock dove | <i>Columba oenas</i> |
| Teal | <i>Anas crecca</i> |
| Tufted duck | <i>Aythya fuligula</i> |
| Water rail | <i>Rallus aquaticus</i> |
| White-fronted goose | <i>Anser albifrons</i> |
| Wigeon | <i>Mareca penelope</i> |
| Woodpigeon | <i>Columba palumbus</i> |
| Yellowhammer | <i>Emberiza citrinella</i> |

Table B-3 below lists all species recorded during the intertidal surveys November 2020 to February 2022 inclusive.

Table B3 Species recorded during the intertidal surveys November 2021 to February 2022

| Species | Scientific name |
|--------------------------|-----------------------------------|
| Barnacle goose | <i>Branta leucopsis</i> |
| Black-headed gull | <i>Chroicocephalus ridibundus</i> |
| Black-tailed godwit | <i>Limosa limosa</i> |
| Black-throated diver | <i>Gavia artica</i> |
| Cormorant | <i>Phalacrocorax carbo</i> |
| Common gull | <i>Larus canus</i> |
| Common scoter | <i>Melanitta nigra</i> |
| Curlew | <i>Numenius arquata</i> |
| Dark-bellied brent goose | <i>Branta bernicla</i> |
| Dunlin | <i>Calidris alpina</i> |
| Eider | <i>Somateria mollissima</i> |
| Fulmar | <i>Fulmarus glacialis</i> |
| Gannet | <i>Morus bassanus</i> |

| Species | Scientific name |
|-------------------------------|----------------------------------|
| Golden plover | <i>Pluvialis apricaria</i> |
| Great crested grebe | <i>Podiceps cristatus</i> |
| Great northern diver | <i>Gavia immer</i> |
| Greylag goose | <i>Anser anser</i> |
| Grey plover | <i>Pluvialis squatarola</i> |
| Guillemot | <i>Uria aalge</i> |
| Kittiwake | <i>Rissa tridactyla</i> |
| Knot | <i>Calidris canutus</i> |
| Mediterranean gull | <i>Ichthyaetus melancephalus</i> |
| Mute swan | <i>Cygnus olor</i> |
| Oystercatcher | <i>Haematopus ostralegus</i> |
| Pintail | <i>Anas acuta</i> |
| Razorbill | <i>Alca torda</i> |
| Red-breasted merganser | <i>Mergus serrator</i> |
| Red-throated diver | <i>Gavia stellata</i> |
| Ringed plover | <i>Charadrius hiaticula</i> |
| Sanderling | <i>Calidris alba</i> |
| Shelduck | <i>Tadorna tadorna</i> |
| Slavonian grebe | <i>Podiceps auratus</i> |
| Teal | <i>Anas crecca</i> |
| Turnstone | <i>Arenaria interpres</i> |
| Wigeon | <i>Mareca Penelope</i> |

Table B4 below lists all species recorded during the winter bird surveys November 2021 to February 2022 inclusive.

Table B4 Species recorded during the winter bird surveys November 2021 to February 2022

| Species | Scientific name |
|---------------------------------|------------------------------------|
| Bewick's swan | <i>Cygnus columbianus bewickii</i> |
| Blackbird | <i>Turdus merula</i> |
| Black-headed gull | <i>Chroicocephalus ridibundus</i> |
| Black swan | <i>Cygnus atratus</i> |
| Blue tit | <i>Cyanistes caeruleus</i> |
| Bullfinch | <i>Pyrrhula pyrrhula</i> |
| Buzzard | <i>Buteo buteo</i> |
| Carrion crow | <i>Corvus corone</i> |
| Canada goose | <i>Branta canadensis</i> |
| Cetti's warbler | <i>Cettia cetti cetti</i> |
| Chaffinch | <i>Fringilla coelebs</i> |
| Collared dove | <i>Streptopelia decaocto</i> |
| Common gull | <i>Larus canus</i> |
| Common sandpiper | <i>Actitis hypoleucos</i> |
| Coot | <i>Fulica atra</i> |
| Cormorant | <i>Phalacrocorax carbo</i> |
| Dunnock | <i>Prunella modularis</i> |
| Egyptian goose | <i>Alopochen aegyptiaca</i> |
| Fieldfare | <i>Turdus pilaris</i> |
| Gadwall | <i>Mareca strepera</i> |
| Goldcrest | <i>Regulus regulus</i> |
| Goldfinch | <i>Carduelis carduelis</i> |
| Great spotted woodpecker | <i>Dendrocopos major</i> |
| Great tit | <i>Parus major</i> |
| Greenfinch | <i>Carduelis chloris</i> |

| Species | Scientific name |
|---------------------------|----------------------------------|
| Green sandpiper | <i>Tringa ochropus</i> |
| Green woodpecker | <i>Picus viridis</i> |
| Greylag goose | <i>Anser anser</i> |
| Grey heron | <i>Ardea cinerea</i> |
| Grey partridge | <i>Perdix perdix</i> |
| Grey wagtail | <i>Motacilla cinerea</i> |
| Herring gull | <i>Larus argentatus</i> |
| House sparrow | <i>Passer domesticus</i> |
| Jay | <i>Garrulus glandarius</i> |
| Jackdaw | <i>Corvus monedula</i> |
| Kestrel | <i>Falco tinnunculus</i> |
| Kingfisher | <i>Alcedo atthis</i> |
| Lapwing | <i>Vanellus vanellus</i> |
| Linnet | <i>Linaria cannabina</i> |
| Little egret | <i>Egretta garzetta</i> |
| Little grebe | <i>Tachybaptus ruficollis</i> |
| Long-tailed tit | <i>Aegithalos caudatus</i> |
| Magpie | <i>Pica pica</i> |
| Mallard | <i>Anas platyrhynchos</i> |
| Marsh harrier | <i>Circus aeruginosus</i> |
| Meadow pipit | <i>Anthus pratensis</i> |
| Mediterranean gull | <i>Ichthyaetus melancephalus</i> |
| Moorhen | <i>Gallinula chloropus</i> |
| Mute swan | <i>Cygnus olor</i> |
| Oystercatcher | <i>Haematopus ostralegus</i> |
| Peregrine | <i>Falco peregrinus</i> |

| Species | Scientific name |
|---------------------|---------------------------------|
| Pheasant | <i>Phasianus colchicus</i> |
| Pied wagtail | <i>Motacilla alba yarrellii</i> |
| Pintail | <i>Anas acuta</i> |
| Redwing | <i>Turdus iliacus</i> |
| Red kite | <i>Milvus milvus</i> |
| Reed bunting | <i>Emberiza schoeniclus</i> |
| Robin | <i>Erithacus rubecula</i> |
| Rook | <i>Corvus frugilegus</i> |
| Shelduck | <i>Tadorna tadorna</i> |
| Shoveler | <i>Anas clypeata</i> |
| Skylark | <i>Alauda arvensis</i> |
| Snipe | <i>Gallinago gallinago</i> |
| Song thrush | <i>Turdus philomelos</i> |
| Sparrowhawk | <i>Accipiter nisus</i> |
| Starling | <i>Sturnus vulgaris</i> |
| Stock dove | <i>Columba oenas</i> |
| Stonechat | <i>Saxicola torquata</i> |
| Teal | <i>Anas crecca</i> |
| Tufted duck | <i>Aythya fuligula</i> |
| Wigeon | <i>Mareca penelope</i> |
| Woodpigeon | <i>Columba palumbus</i> |
| Wren | <i>Troglodytes troglodytes</i> |
| Yellowhammer | <i>Emberiza citrinella</i> |

Annex C

Full survey details

Full survey details of the intertidal surveys and winter bird surveys are shown below in **Table C-1** and **Table C-2**.

Table C-1 Full survey details of intertidal surveys undertaken September 2020-March 2021 inclusive and November 2021 – February 2022 inclusive

| Date | Tidal state | Start time | End time | Weather conditions |
|------------|-------------|------------|----------|--|
| 24/09/2020 | LT -+3 | 07:48 | 13:48 | Dry, 8/8 Oktas cloud, wind Beaufort (BF) 6 south-westerly, visibility >3km, temperature 12°C |
| 02/10/2020 | HT -+3 | 09:33 | 15:33 | Rain showers heavy at times, 8/8 to 5/8 Oktas cloud, wind BF8 easterly dropping to BF5, visibility > 3km, temperature 14°C |
| 05/10/2020 | HT -+3 | 10:50 | 16:50 | Dry, 4/8 Oktas cloud, wind BF1 westerly, visibility > 3km, temperature 14°C. |
| 26/10/2020 | LT -+3 | 10:41 | 16:41 | Dry, 2/8 Oktas cloud, wind BF4 westerly, visibility >3km, temperature 12°C |
| 03/11/2020 | HT -+3 | 09:17 | 15:17 | Dry, 3/8 Oktas cloud, wind BF3 south-westerly, visibility >3km, temperature 9°C |
| 25/11/2020 | LT -+3 | 09:27 | 15:27 | Light rain, 8/8 Oktas cloud, wind BF3 south-westerly, visibility >3km, temperature 13°C |
| 03/12/2020 | HT -+3 | 09:36 | 15:36 | Light rain, 8/8 Oktas cloud, wind BF3 south-westerly, visibility > 3km, temperature 8°C |
| 09/12/2020 | LT -+3 | 08:28 | 14:28 | Dry, 6/8 Oktas cloud, wind BF1 north-westerly, visibility >3km, temperature 3°C |
| 08/01/2021 | LT -+3 | 09:04 | 15:04 | Dry, 3/8 Oktas cloud, wind BF1 easterly, visibility >3km, temperature 1°C |
| 13/01/2021 | HT -+3 | 08:11 | 14:11 | Intermittent showers, 8/8 Oktas cloud, wind BF1 south-westerly, visibility 1-3km, temperature 7°C |

| Date | Tidal state | Start time | End time | Weather conditions |
|-------------------|--------------------|-------------------|-----------------|---|
| 12/02/2021 | HT -+3 | 08:57 | 14:57 | Dry, 4/8 Oktas cloud, wind BF7 easterly, visibility >3km, temperature -2°C |
| 22/02/2021 | LT -+3 | 10:04 | 16:04 | Light showers, 8/8 Oktas cloud, wind BF1 south-westerly turning west, visibility 1-3km (Sea-fog), temperature 8°C |
| 08/03/2021 | LT -+3 | 10:03 | 16:03 | Dry, 3/8 Oktas cloud, wind BF3 south-westerly, visibility >3km, temperature |
| 15/03/2021 | HT -+3 | 09:34 | 15:34 | Dry, 6/8 Oktas cloud, wind BF4 north-westerly, visibility > 3km, temperature 12°C |
| 18/11/2021 | HT -+3 | 07:35 | 13:35 | Dry, 4/8 Oktas cloud, wind BF1 south-westerly, visibility > 3km, temperature 7°C |
| 30/11/2021 | LT -+3 | 10:14 | 16:14 | Dry, 8/8 Oktas cloud, wind BF2 westerly, visibility > 3km, temperature 10°C |
| 06/12/2021 | HT -+3 | 09:14 | 15:14 | Heavy showers, 8/8 Oktas cloud, wind BF5 south-westerly, visibility > 3km, temperature 4°C |
| 13/12/2021 | LT -+3 | 09:39 | 15:39 | Dry, 8/8 Oktas cloud, wind BF3 south-westerly, visibility > 3km, temperature 9°C |
| 11/01/2022 | LT -+3 | 10:10 | 16:10 | Mist, 8/8 Oktas cloud, wind BF2 south-west, visibility 1 – 3km, temperature 9°C |
| 18/01/2022 | HT -+3 | 08:43 | 14:43 | Dry, 7/8 Oktas cloud, wind BF1 south, visibility > 3km, temperature -2°C |
| 01/02/2022 | HT -+3 | 08:17 | 14:17 | Dry, 7/8 Oktas cloud, wind BF2 north-westerly, visibility > 3km, temperature 9°C |
| 10/02/2022 | LT -+3 | 09:53 | 15:53 | Dry, 8/8 Oktas cloud, wind BF2 north-westerly, visibility > 3km, temperature 7°C |

Table C-2 Full survey details of winter bird surveys undertaken September 2020-March 2021 inclusive and November 2021 and February 2022 inclusive.

| Date | Survey Area | Start time | End time | Weather conditions |
|-------------------|--------------------|-------------------|-----------------|--|
| 28/09/2020 | Arun Valley | 10:00 | 13:30 | Dry, 2/8 Oktas cloud, BF1 northerly, visibility > 3km, temperature 14°C |
| 28/09/2020 | Adur Valley | 10:00 | 13:30 | Dry, 3/8 Oktas cloud, BF1 northerly, visibility > 3km, temperature 14°C |
| 16/10/2020 | Arun Valley | 09:00 | 11:30 | Dry, 1/8 Oktas cloud, BF1 north-easterly, visibility > 3km, temperature 8°C |
| 16/10/2020 | Adur Valley | 09:00 | 11:30 | Dry, 2/8 Oktas cloud, BF2 north-easterly, visibility > 3km, temperature 10°C |
| 12/11/2020 | Arun Valley | 09:15 | 11:45 | Dry, 1/8 Oktas cloud, BF1 south-westerly, visibility > 3km, temperature 12°C |
| 12/11/2020 | Adur Valley | 09:15 | 11:45 | Dry, 3/8 Oktas cloud, BF1 south-westerly, visibility > 3km, temperature 12°C |
| 17/12/2020 | Arun Valley | 09:30 | 12:00 | Dry, 3/8 Oktas cloud, BF2 south-westerly, visibility > 3km, temperature 8°C |
| 17/12/2020 | Adur Valley | 09:30 | 12:00 | Dry, 3/8 Oktas cloud, BF2 south-westerly, visibility > 3km, temperature 8°C |
| 19/01/2021 | Arun Valley | 09:40 | 12:10 | Heavy showers, 8/8 Oktas cloud, BF4 westerly, visibility >3km, temperature 8°C |
| 19/01/2021 | Adur Valley | 09:40 | 12:10 | Heavy showers, 8/8 Oktas cloud, BF4 westerly, visibility >3km, temperature 8°C |
| 02/02/2021 | Arun Valley | 09:30 | 11:30 | Light showers, 6/8 Oktas cloud, wind BF3 south-westerly, visibility >3km, temperature 11°C |
| 02/02/2021 | Adur Valley | 09:30 | 11:30 | Light showers, 6/8 Oktas cloud, wind BF3 south-westerly, visibility >3km, temperature 11°C |
| 12/03/2021 | Arun Valley | 09:30 | 12:15 | Light showers, 6/8 Oktas cloud, wind BF4 south-westerly, visibility >3km, temperature 9°C |

| Date | Survey Area | Start time | End time | Weather conditions |
|-------------------|--------------------|-------------------|-----------------|--|
| 12/03/2021 | Adur Valley | 09:30 | 12:15 | Light showers, 6/8 Oktas cloud, wind BF4 south-westerly, visibility >3km, temperature 9°C |
| 17/11/2021 | Arun Valley | 09:30 | 12:55 | Dry, 0/8 Oktas cloud, wind BF1 south-westerly, visibility > 3km, temperature 12°C |
| 17/11/2021 | Adur Valley | 09:30 | 12:45 | Dry, 0/8 Oktas cloud, wind BF1 south-westerly, visibility > 3km, temperature 12°C |
| 01/12/2021 | Arun Valley | 08:15 | 12:30 | Light showers, 6/8 Oktas cloud, wind BF4 south-westerly, visibility > 3km, temperature 9°C |
| 01/12/2021 | Adur Valler | 08:15 | 12:30 | Light showers, 6/8 Oktas cloud, wind BF4 south-westerly, visibility > 3km, temperature 9°C |
| 12/01/2022 | Arun Valley | 08:20 | 12:30 | Dry, 0/8 Oktas cloud, wind BF2 northerly, visibility > 3km, temperature 3°C |
| 12/01/2022 | Adur Valley | 08:15 | 12:20 | Dry, 0/8 Oktas cloud, wind BF2 northerly, visibility > 3km, temperature 3°C |
| 02/02/2022 | Arun Valley | 08:15 | 11:50 | Dry, 1/8 Oktas cloud, wind BF2 north-westerly, visibility > 3km, temperature 6°C |
| 02/02/2022 | Adur Valley | 08:00 | 11:45 | Dry, 1/8 Oktas cloud, wind BF2 north-westerly, visibility > 3km, temperature 6°C |



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