



SUNNICA ENERGY FARM



Appendix 8H: Report on Surveys for Breeding Birds

Sunnica Limited

September 2020



Quality information

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1. Introduction

- 1.1.1. In March 2019, AECOM (on behalf of Sunnica Energy Limited), undertook a Preliminary Ecological Appraisal (PEA) (Ref 8H-1) for the proposed Sunnica Energy Farm (hereafter referred to as 'the Scheme'). This PEA identified that the habitat within the Scheme boundary was suitable to support birds during the breeding season and that further surveys were required to determine the presence or absence of protected or notable¹ bird species and the assemblage of breeding bird species. Therefore, AECOM was instructed to undertake surveys of breeding birds within the Scheme boundary (the Development Consent Order (DCO) Site) (the Site) and an appropriate survey buffer to record the species, distribution and numbers of breeding birds within the Site and adjacent habitat.
- 1.1.2. This report contains confidential information regarding the locations of sensitive breeding species, included on Schedule 1 of the Wildlife and Countryside Act (1981, as amended) (Ref 8H-2). Therefore, this report should not be circulated outside of the immediate project team.

1.2. The Scheme

- 1.2.1. Sunnica Energy Farm is a new solar farm scheme proposal that would connect to the national electricity transmission network. Sunnica will use ground mounted solar photovoltaic (PV) panel arrays to generate electricity energy from the sun and combine these with a Battery Energy Storage System (BESS). The Scheme will be connected to the national electricity transmission network by an underground cable.
- 1.2.2. The BESSs will consist of a compound and battery array to allow for the storage, importation and exportation of energy to the National Grid. Details of the design of the BESS elements, including their power and energy ratings, and their dimensions and appearance are currently in development.
- 1.2.3. Supporting electrical infrastructure will include an on-site substation and on-site cabling between the different electrical elements of the Scheme. The generating equipment of the Scheme will be fenced and be protected via security measures such as CCTV and lighting. Inside the fenced areas, in addition to the generating equipment will be, internal access tracks, landscaping and habitat management and drainage.
- 1.2.4. The Scheme will be connected to the existing Burwell National Grid Substation, most likely using 132kV cables buried underground. The cables will run between Sunnica West and Sunnica East (Grid Connection Route A), and then on from Sunnica West to the Burwell National Grid Substation (Grid Connection Route B). Details of the cable route, dimensions of the cables, the depth and method of burial, and numbers of joints required are currently in development.
- 1.2.5. The Scheme qualifies as a Nationally Significant Infrastructure Project (NSIP) and will require a DCO from national government, due to its generating

¹ A notable species is a species with a conservation designation, but no legal protection.

capacity. It is expected to be an Environmental Impact Assessment (EIA) development.

1.2.6. The Scheme therefore comprises the following key areas:

- *Solar Farm Sites:*
 - *Sunnica East Site A;*
 - *Sunnica East Site B;*
 - *Sunnica West Site A; and*
 - *Sunnica West Site B.*
- *associated electrical infrastructure for connection to the national transmission system comprise:*
 - *Grid Connection Route A ('A1' - connecting the Sunnica East Site A with the Sunnica East Site B and then 'A2' connecting to the Sunnica West Site A);*
 - *Grid Connection Route B ('B1' - connecting the Sunnica West Site A and Sunnica West Site B and 'B2' connecting to the Burwell National Grid Substation); and*
 - *Burwell National Grid Substation Extension.*

1.2.7. **Figure 8H-1** shows the locations of these key areas.

1.3. Site Descriptions

1.3.1. A description of the habitats within the Site are provided below and a more detailed description of the habitats is provided in the Preliminary Ecological Appraisal (Ref 8H-1). The extent of the Scheme is shown in **Figure 8H-1** at the end of this report.

Sunnica East Site

1.3.2. The Sunnica East is split into two sub-sites, one to the north of Freckenham (referred to as Sunnica East Site A) and the other to the south of Worlington (referred to as Sunnica East Site B). These two sites are approximately 1 km apart and are separated by agricultural fields. The Sunnica East Site A encompasses an area of approximately 231.7 ha and includes land within the county of Suffolk and Cambridgeshire. Sunnica East Site B lies within Suffolk and encompasses an area of approximately 323.1 ha (**Figure 8H-1**).

1.3.3. The landscape features within the Sunnica East Site A and Sunnica East Site B consist of arable agricultural fields interspersed with individual trees, hedgerows, linear tree belts, small woodland blocks, farm access tracks and local roads.

1.3.4. The landscape features immediately surrounding the Sunnica East Site A and Sunnica East Site B comprise small rural villages, including Worlington to the north, Barton Mills to the north-east, Red Lodge and Freckenham to the south and Isleham to the west. Industrial land uses adjoin the A11 to the south of the Sunnica East Site with an industrial installation of a 7.5 MW solar farm situated adjacent to the south-eastern extent of the Sunnica East Site and an anaerobic digestion (AD) plant located to the south of the Sunnica East Site.

Sunnica West Site

- 1.3.5. The Sunnica West Site is located within the East Cambridgeshire District Council administrative area, approximately 3 km north east of Newmarket and 6.5 km east of Burwell.
- 1.3.6. Sunnica West is split into two sub-sites, one to the south-east (referred to as Sunnica West Site A) and the other to the north-west of Snailwell (referred to as Sunnica West Site B). These two sites are approximately 1 km apart, separated by agricultural fields and Chippenham Road. The Sunnica West Site A encompasses an area of approximately 485.5 ha and includes land to the east and west of the A11, consisting of agricultural fields bounded by trees, managed hedgerows, linear tree shelter belts, small woodland and copses and farm access tracks. Sunnica West Site B encompasses an area of approximately 68.8 ha and comprise of agricultural fields, grassland, small woodland and copses, farm access tracks and irrigation ditches fed by the River Snail which runs along the western and northern boundaries of the Site (**Figure 8H-1**).
- 1.3.7. The surrounding landscape comprises regularly shaped arable fields interspersed with managed hedgerows, tall shelter belts of trees and in the Chippenham Hall area, a parkland landscape with mature individual trees. Much of the area is also characterised by grazed paddocks, horse gallops and exercise tracks.

Cable Route Corridors

- 1.3.8. The Scheme will connect to the existing Burwell National Grid Substation via a cable route corridor. The cable route corridors under consideration are Grid Connection Route A, which connects the Sunnica East Site A with the Sunnica East Site B and then runs between the Sunnica West Site A and the Sunnica East Site B; and Grid Connection Route B, between the Sunnica West Site A and Sunnica West Site B and the Burwell National Grid Substation.

Grid Connection Route A

- 1.3.9. Grid Connection Route A connects the Sunnica East Site A with Sunnica East Site B and crosses two minor roads and arable farmland (**Figure 8H-1**).
- 1.3.10. Heading south from the Sunnica East Site B, the cable route corridor for Grid Connection Route A crosses the River Kennett, pastoral farmland, the Chippenham footpath 49/7 (a Public Right of Way (PRoW)) and B1085 (Figure 8H-1).

Grid Connection Route B

- 1.3.11. Heading east from the Burwell National Grid Substation, the cable route corridor for Grid Connection Route B crosses agricultural fields and a number of roads including the B1102 and A142. Grid Connection Route B also crosses a number of watercourses, including the Burwell Lode, New River, and the River Snail, as well as a number of drainage ditches associated with Burwell Fen, Little Fen, the Broads, and agricultural drains (**Figure 8H-1**).
- 1.3.12. The cable route corridor for Grid Connection Route B crosses a PRoW (footpath 92/19) before crossing the railway line and the A142 Newmarket /

Fordham Road. The Route then runs alongside Snailwell Road and across the River Snail into Sunnica West Site B.

Burwell National Grid Substation Extension

- 1.3.13. The habitat within the Burwell National Grid Substation Extension (surrounding the existing substation) comprises small grassland fields to the east of the existing substation (bordered by hedgerows and mature trees) and arable land to the south and west of the existing substation (**Figure 8H-1**).

1.4. Scope of Report

- 1.4.1. The objective of the surveys for breeding birds, reported in this document, is to determine the presence, assemblage and distribution of breeding bird species, within the Scheme boundary and relevant zones of influence to determine any potential impacts of the Scheme on breeding birds.
- 1.4.2. This report includes the following information:
- relevant legislation and policy;
 - methodologies for desk and field-based assessments undertaken between 2018 and 2020;
 - limitations to the surveys undertaken and any assumptions made as a result of incomplete data;
 - survey results;
 - the approach for determining the nature conservation importance of breeding bird populations recorded during the assessments; and
 - conclusions and recommendations.
- 1.4.3. This report is a technical appendix to accompany the Preliminary Environmental Information report, reporting on and evaluating the baseline data for breeding birds collected as of August 2020.

2. Relevant Legislation and Policy

2.1. Legislation

Wildlife and Countryside Act

- 2.1.1. The legislative provisions for the protection of wild birds in the UK are contained primarily in Sections 1-7 of the Wildlife and Countryside Act (WCA) 1981 (as amended) (Ref 8H-2). Under the WCA, a wild bird is defined as any bird of a species that occurs in a wild state as a resident or a visitor to the European Territory of any member state.
- 2.1.2. When breeding, all birds, their nest, eggs and nestlings are afforded protection under the Wildlife and Countryside Act 1981, as updated by the 'Countryside Right of Way Act 2000' (Ref 8H-3). Therefore, during the bird breeding season (typically March-August inclusive) it is an offence to:
- intentionally kill, injure or take any wild bird;
 - intentionally take, damage or destroy the nest of any wild bird while it is in use or being built; and
 - intentionally take or destroy the eggs of any wild bird.
- 2.1.3. Additionally, special penalties exist for offences related to species listed on Schedule 1 of the Wildlife and Countryside Act, 1981 (as amended) (Ref 8H-2), for which there are additional offences for disturbing these birds at their nest, or their dependent young. Schedule 1 birds cannot be intentionally or recklessly disturbed when nesting and there are increased penalties for doing so. No licences are available for disturbance during a development even in circumstances where that development is fully authorised by consents such as a valid planning permission.

Directive of the Conservation of Wild Birds

- 2.1.4. A number of bird species recorded within the UK (including those that are resident, overwintering and migratory) are protected under European legislation under the Directive of the Conservation of Wild Birds (EU Birds Directive) (Ref 8H-4), which lists 193 species, or sub-species, of birds in Annex 1 which are:
- in danger of extinction;
 - are rare, or have restricted local distribution;
 - are vulnerable to specific changes in their habitat; or
 - require particular attention for reasons of the specific nature of habitat.
- 2.1.5. These species are afforded enhanced legal protection and EU member states have a responsibility to maintain the populations of these species at a level that corresponds to their ecological, scientific and cultural requirements (Article 2). This Directive is transposed into English law through the

‘Conservation of Habitats and Species Regulations 2017 (as amended)²’ (Ref 8H-5).

- 2.1.6. Species listed on Annex 1 of the Wild Birds Directive are those for which the UK Government are also required to take special measures, including the designation of Special Protection Areas, to ensure the survival and reproduction of these species throughout their area of distribution. These sites are then automatically included within the Natura 2000, which is a network of core breeding and resting sites that are protected for rare and threatened species.

Priority Species

- 2.1.7. In addition to the above legislation, 49 bird species are listed as being Species of Principal Importance for conservation in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (**Ref 8H-6**). These species are of material consideration during the planning process. Section 41 of the NERC Act 2006 requires the Secretary of State to publish a list of habitats and species which are of Principal Importance for the conservation of biodiversity in England. The list has been drawn up in consultation with Natural England, as required by the Act. The Section 41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under Section 40 of the NERC Act, to have regard to the conservation of biodiversity in England when carrying out their normal functions.
- 2.1.8. The Joint Nature Conservation Committee (JNCC) UK Biodiversity Action Plan (UKBAP) (Ref 8H-7) was launched in 1994 and identified UK BAP priority species of conservation concern that are the most threatened in the UK and requiring action under the UKBAP and for which action plans have been published. However, the work undertaken for the UKBAP is now focussed at a country level, rather than UK level, and the UKBAP has subsequently been succeeded by the UK Post-2010 Biodiversity Framework (July 2012) (Ref 8H-8). However, the UK list of priority species remains an important reference source and has been used to help draw up statutory lists of priority species in England, Scotland, Wales and Northern Ireland. For the purpose of this assessment, the UK BAP is still used as one of the criteria to assist in assigning national value to any given ecological receptor.

2.2. Planning Policy

- 2.2.1. National and local planning policy relevant to nature conservation is provided in detail in the Preliminary Ecological Appraisal for the Scheme (Ref 8H-1).

2.3. Local Biodiversity Action Plan Species

- 2.3.1. The Scheme is located in two counties: Cambridgeshire and Suffolk (see Section 8.2 of this report). The Cambridgeshire and Peterborough Biodiversity Action Plan (Ref 8H-9) and Suffolk Biodiversity Action Plan (Ref 8H-10) provide the local nature conservation strategy for identifying threats to species within the county and setting out the actions necessary to

² As such, the requirements of the EC Birds Directive (2009/147/EC) are still applicable despite the UK no longer being a member state of the European Union

conserve them. The Biodiversity Action Plans (BAPs) provide context to inform the identification of threatened and, or uncommon species within the district and, or county. The BAPs also identify priorities for conservation and enhancement but confer no particular legislative or policy protection to the species identified, however in some cases this is provided through related legislation and local planning policy.

2.3.2. The Cambridgeshire and Peterborough BAP and the Suffolk BAP list 26 priority bird species (plus three additional birds of interest); and 35 priority bird species respectively. These species are presented in **Table 8H-1**.

Table 8H-1 Priority bird species listed in the Cambridgeshire and Peterborough and Suffolk BAPs

<i>Common name</i>	<i>Scientific name</i>	<i>Cambridgeshire Biodiversity Action Plan Species</i>	<i>Suffolk Biodiversity Action Plan Species</i>
Barn Owl	<i>Tyto alba</i>	✓	-
Bewick's Swan	<i>Cygnus columbianus</i>	✓	-
Bittern	<i>Botaurus stellaris</i>	✓	✓
Black-tailed Godwit	<i>Limosa limosa</i>	✓	✓
Bullfinch	<i>Pyrrhula pyrrhula</i>	✓	✓
Common Crane	<i>Grus grus</i>	✓	-
Cuckoo	<i>Cuculus canorus</i>	-	✓
Corn Bunting	<i>Emberiza calandra</i>	✓	✓
Corncrake	<i>Crex crex</i>	✓	-
Curlew	<i>Numenius arquata</i>	✓	✓
Dunnock	<i>Prunella modularis</i>	-	✓
Grasshopper Warbler	<i>Locustella naevia</i>	✓	✓
Grey Partridge	<i>Perdix perdix</i>	✓	✓
Hawfinch	<i>Coccothraustes coccothraustes</i>	✓	✓
Herring Gull	<i>Larus argentatus subsp. argenteus</i>	✓	✓
House Sparrow	<i>Passer domesticus</i>	✓	✓
Lapwing	<i>Vanellus vanellus</i>	✓	✓

<i>Common name</i>	<i>Scientific name</i>	<i>Cambridgeshire Biodiversity Action Plan Species</i>	<i>Suffolk Biodiversity Action Plan Species</i>
Lesser Redpoll	<i>Acanthis cabaret</i>	✓	✓
Lesser Spotted Woodpecker	<i>Dryobates minor</i>	✓	✓
Linnet	<i>Linaria cannabina</i>	✓	✓
Little Tern	<i>Sterna albifrons</i>	-	✓
Marsh Tit	<i>Poecile palustris</i>	✓	✓
Nightjar	<i>Caprimulgus europaeus</i>	-	✓
Reed Bunting	<i>Emberiza schoeniclus</i>	✓	✓
Savi's Warbler	<i>Locustella luscinioides</i>	-	✓
Skylark	<i>Alauda arvensis</i>	✓	✓
Song Thrush	<i>Turdus philomelos</i>	✓	✓
Spotted Flycatcher	<i>Muscicapa striata</i>	✓	✓
Starling	<i>Sturnus vulgaris</i>	-	✓
Stone-curlew	<i>Burhinus oediconemus</i>	✓	✓
Swift	<i>Apus apus</i>	✓	-
Tree Pipit	<i>Anthus trivialis</i>	-	✓
Tree Sparrow	<i>Passer montanus</i>	✓	✓
Turtle Dove	<i>Streptopelia turtur</i>	✓	✓
Twite	<i>Carduelis flavirostris</i>	-	✓
Willow Tit	<i>Poecile montanus</i>	-	✓
Wood Lark	<i>Lullula arborea</i>	-	✓
Wood Warbler	<i>Phylloscopus sibilatrix</i>	-	✓
Yellow Wagtail	<i>Motacilla flava</i>	✓	✓
Yellowhammer	<i>Emberiza citrinella</i>	✓	✓

2.4. Birds of Conservation Concern

2.4.1. The Birds of Conservation Concern (BoCC) (Ref 8H-11) is an assessment of the conservation status of all regularly occurring British birds. The lists (Red, Amber and Green), that indicate the level of conservation importance for each species, are derived from quantitative assessments from standardised criteria. The assessment is based on the most up-to-date evidence available and criteria include conservation status at global and European levels and, within the UK: historical decline, trends in population and range, rarity, localised distribution and international importance. The lists are drawn together by the UKs leading bird conservation organisations, including the Royal Society for the Protection of Birds (RSPB) and British Trust for Ornithology (BTO).

2.4.2. The criteria for birds being included in the BoCC lists are as follows:

Red List:

- globally threatened;
- historical population decline in UK during 1800–1995; and
- severe (at least 50%) decline in UK breeding population over last 25 years, or longer-term period (the entire period used for assessments since the first BoCC review, starting in 1969). Severe (at least 50%) contraction of UK breeding range over last 25 years, or the longer-term period.

Amber List:

- species with unfavourable conservation status in Europe (SPEC = Species of European Conservation Concern);
- historical population decline during 1800–1995, but recovering; population size has more than doubled over last 25 years;
- moderate (25-49%) decline in UK breeding population over last 25 years, or the longer-term period;
- moderate (25-49%) contraction of UK breeding range over last 25 years, or the longer-term period;
- moderate (25-49%) decline in UK non-breeding population over last 25 years, or the longer-term period;
- rare breeder; 1–300 breeding pairs in UK;
- rare non-breeders; less than 900 individuals;
- localised; at least 50% of UK breeding or non-breeding population in 10 or fewer sites, but not applied to rare breeders or non-breeders; and
- internationally important; at least 20% of European breeding or non-breeding population in UK (NW European and East Atlantic Flyway populations used for non-breeding wildfowl and waders respectively).

Green List:

- species that occur regularly in the UK but do not qualify under any of the above criteria.

2.4.3. Although the BoCC lists confer no legal status in themselves, they are useful in evaluating the conservation significance of bird assemblages, and for assessing the potential significance of impacts and informing appropriate levels of mitigation with respect to bird populations.

3. Methods

3.1. Desk Study

- 3.1.1. A desk study was undertaken in December 2018 through Cambridgeshire & Peterborough Environmental Records Centre (CPERC) and Suffolk Biodiversity Information Service (SBIS), to obtain records of protected and notable bird species within a 2 km radius of the Scheme boundary.
- 3.1.2. Furthermore, breeding locations and nest records of Stone-curlew, within 500m of the Site boundary and within the last ten years, were requested from the RSPB in May 2019.
- 3.1.3. Only records up to ten years old from the request date were considered within the assessment, as any records older than ten years are unlikely to be still representative of bird species in the local area.

3.2. Field Survey

Survey Area

- 3.2.1. The survey area included all habitat within the Site and a 50 m survey buffer. Standardised survey buffers for assessing the impacts of development on bird populations do not exist, however, the survey area used provides information on the breeding birds within the area immediately surrounding the Scheme and includes areas contiguous with the Scheme boundary, where birds may potentially be adversely affected. Depending on the sensitivity of the species, birds occurring outside of the survey area may also be adversely affected (such as those listed on Schedule 1 of the WCA) and therefore where any such species were recorded beyond the 50 m survey buffer (up to 200 m from the Scheme), these were also recorded. However, the 50 m survey buffer is sufficient to determine the likely impacts of the Scheme on the majority of breeding bird species occurring or likely to occur in the area.
- 3.2.2. For ease of analysis in consideration of the size and geographical locations of the Scheme, the survey area was split into compartment areas (see **Table 8H-2** and **Figure 8H-2**).

Table 8H-2 Survey Compartments within the DCO Site

<i>Scheme Area</i>	<i>Survey Compartment Reference</i>	<i>County</i>
Sunnica East Site A	Sunnica East Site A1	Cambridgeshire
	Sunnica East Site A2	Suffolk
Sunnica East Site B	Sunnica East Site B	Suffolk
Sunnica West Site A		Cambridgeshire
Sunnica West Site B		Cambridgeshire

<i>Scheme Area</i>	<i>Survey Compartment Reference</i>	<i>County</i>
Grid Connection Route A	Cable Route A1	Suffolk
	Cable Route A2	Cambridgeshire
Grid Connection Route B	Cable Route B1	Cambridgeshire
	Cable Route B2	
Burwell National Grid Substation Extension		Cambridgeshire

3.2.3. Modifications to the Scheme extent through the survey period resulted in minor modifications to the survey area used during the course of the breeding bird survey and reflected the extent of access at the time. However, the survey covered the whole Scheme area and provide a robust baseline of the breeding bird community present within the Scheme boundary and allows determination of the presence of any protected or sensitive ornithological receptors.

Territory Mapping Survey – General Breeding Bird Assemblage

3.2.4. The survey was undertaken based on a standard territory mapping methodology for surveying breeding birds as detailed in Bibby *et al.* (2000) (Ref 8H-12) and Gilbert *et al.* (1998) (Ref 8H-13). This method is based on the principle that many species during the breeding season are territorial. This is found particularly amongst passerines, where territories are often marked by conspicuous song, display and periodic disputes with neighbouring individuals.

3.2.5. Survey routes followed the length of all hedgerows, fence-lines and field margins (including paths, tracks and roads). Deviations into areas of set-aside, stubble fields, scrub, woodland and other uncultivated habitats were made, where possible. The routes did not include ploughed or cultivated fields, due to the possibility of trampling and damaging crops. Fields containing livestock were avoided for safety reasons.

3.2.6. Regular stopping points were included along the survey route to record any species that may be passing through the survey area. Survey routes were mapped, and the direction walked alternated on each visit, to ensure that all areas were covered at various times of day across the duration of the survey. Surveys were undertaken early in the morning, commencing just after sunrise and finishing before midday.

3.2.7. In areas of limited access along the Grid Connection Routes A2 and B2 (see **Figure 8H-2**), strategic viewing points were used to survey for breeding birds and these strategic points were chosen on the basis of:

- the extent of view;
- access permission; and
- safety considerations.

- 3.2.8. A total of four viewing points were used to survey breeding birds within the Grid Connection Routes A2 and B2. Each viewing point was surveyed for ten to 20 minutes. The survey duration was considered proportionate to the duration of undertaking a walkover survey over a similar area. Surveys did not start until five minutes after the surveyor had reached the point to allow birds to settle down from any disturbance caused by the surveyor's arrival. On commencement of the survey, a 360° arc was scanned by the surveyor, recording all species seen from the viewing point.
- 3.2.9. Surveys for breeding birds were undertaken between April and June 2019 and March and June 2020, with a total of six survey visits taking place within each Scheme area. Each survey was undertaken during appropriate weather conditions for survey when the weather was dry, warm and with little to no wind.
- 3.2.10. Surveys were undertaken early in the morning, commencing just after sunrise and finishing before midday. During these times, breeding birds are more active and can be detected in song more frequently.
- 3.2.11. All bird species were recorded and mapped across the survey area. Registrations of birds were recorded using two letter species codes. Specific codes were used to record bird behaviour, including: singing, calling, flights and movements between areas, carrying food, nest building, aggressive encounters and other bird behaviour.
- 3.2.12. The expected outcome from the surveys is that mapped registrations fall into clusters, approximately coinciding with territories. A cluster is generally a spatially distinct group of registrations that represent the activity of not more than one pair. Ideally, clusters include registrations of territorial behaviour across all visits and are clearly demarcated from adjacent clusters by simultaneous recording of neighbouring birds. Where a species has closely packed territories, the mapping of simultaneously singing birds becomes essential. Territory boundaries are assumed to be between such birds.
- 3.2.13. Territory mapping methods produce analysis maps of non-overlapping ellipses encircling clusters of records thought to relate to separate pairs of breeding birds. These ellipses may not show the entire extent of the pairs' actual breeding territory which may be significantly larger; however, they are likely to show those areas in which the pair is most active.
- 3.2.14. On completion of the surveys, analysis maps were produced for each species, consisting of all registrations recorded during surveys in 2019 and 2020. From these species maps, the number of territories was calculated by identifying the number of clusters present. Any duplicated territories, where the survey areas overlapped between years, are discounted.
- 3.2.15. For late-arriving (to the UK) trans-Saharan migrants, e.g. Spotted Flycatcher *Muscicapa striata*, for which fewer potential contacts are possible, only one registration is required to form a territory cluster. A number of species are not territorial and are dealt with appropriately, e.g. Linnet *Linaria cannabina*, where data represent aggregations or loose colonies.
- 3.2.16. Standard registration mapping techniques were also used to record non-breeding species.

3.2.17. The following definitions were used to identify the breeding territory status of each species recorded:

- Confirmed: includes species for which territories were positively identified as a result of the number of registrations recorded; the location of an active nest; or the presence of recently fledged young / downy young;
- Probable: includes a species pair observed in suitable nesting habitat during surveys; or agitated behaviour / anxiety calls from adults (suggesting the presence of a nest or young nearby). Behaviour was observed on insufficient occasions to confirm the presence of a territory;
- Possible: includes species observed during surveys in suitable nesting habitat; or a singing male present (or breeding calls heard) in suitable breeding habitat; or
- Non-breeding: species-specific information was used to determine fly-over species, or species suspected to be summering non-breeder.

Stone-curlew

2019 surveys

3.2.18. To determine the presence, or absence, of breeding and post-breeding Stone-curlew *Burhinus oedicanus* within the Site, all suitable habitats within the Sunnica East Sites A and B was surveyed every two weeks between 5th April and 23rd September 2019. Where possible, surveys were combined with surveys for the general breeding bird assemblage, above. The Stone-curlew survey method used on the Site was based on the RSPB Stone-curlew monitoring protocol (Ref 8H-14).

3.2.19. In areas outside of the Sunnica East Sites A and B (within 500 m of the Site boundaries -see **Figure 8H-3**), where there is suitable habitat for Stone-curlew and this was accessible or visible from public rights of way, surveys for breeding Stone-curlew were undertaken between 3rd April and 6th June 2019.

3.2.20. Surveys outside of the Site boundary were undertaken using stopping points (see **Figure 8H-3**) to scan areas for Stone-curlew and listen for any Stone-curlew calls. Nocturnal surveys (using taping methods, under a licence issued by Natural England), were also undertaken around the Site boundary. The aim of these nocturnal surveys was to locate Stone-curlew by playing a tape recording of Stone-curlew calls and listening for birds calling back. Taping is best done at night because Stone-curlews are more active at night and there is a much greater likelihood of them responding than during the day.

3.2.21. In general, tape playing:

- was avoided near houses;
- was carried out entirely from public roads;
- took place twice a month during April and May and once in June 2019;

- took place any time from 30 minutes after sunset; and
- was undertaken on a still night, as even a slight breeze will reduce tape range and make responses difficult to hear.

3.2.22. All Stone-curlew surveys were undertaken by an appropriately licenced ornithologist (Alan Bull, Natural England Licence number: 2019-42122-SCI-SCI). The survey dates for Stone-curlew surveys (including surveys where these were combined with general breeding bird surveys (see above)) undertaken between 5th April and 23rd September 2019 are found below in **Table 8H-3**. All surveys were undertaken in good weather conditions, on dry and calm days.

Table 8H-3 Stone-curlew survey dates

<i>Visit Number</i>	<i>Survey Date</i>	<i>Survey Type</i>
1	5 th April 2019	Diurnal
2	17 th April 2019	Diurnal
3	24 th -26 th April	Diurnal - as part of the survey for breeding birds
4	25 th April 2019	Nocturnal
5	30 th April to 3 rd May	Diurnal - as part of the survey for breeding birds
6	30 th April	Nocturnal
7	14-17 May	Diurnal - as part of the survey for breeding birds
8	21 May	Nocturnal
9	28-31 May	Diurnal - as part of the survey for breeding birds
10	6 Jun	Nocturnal
11	11-14 June	Diurnal - as part of the survey for breeding birds
12	24-28 June	Diurnal - as part of the survey for breeding birds
13	5 th , 16 th and 27 th August; 9 th and 23 rd September	Diurnal surveys to look for post-breeding flocks and 'late' breeding attempts

3.2.23. In combination, the walkover surveys and stopping points used in 2019 enabled all suitable habitat within 500 m of the Site boundary to be surveyed.

2020 surveys

3.2.24. To ensure adequate coverage of the Site for nesting Stone-curlew, in consideration of changes to the Scheme boundary after the bird breeding season in 2019, walkover surveys for Stone-curlew were undertaken in 2020 of any 'new' Scheme areas and, for an accurate record on the number of Stone-curlew pairs on the Site, this was extended to include the entire

Sunnica East Sites A and B. No surveys were undertaken outside of the Site boundary.

- 3.2.25. These walkover surveys, following the RSPB Stone Curlew monitoring protocol (Ref 8H-14). were undertaken fortnightly between 7th April and 19th June 2020, with six survey visits taking place in this time. All surveys were undertaken in good weather conditions, on dry and calm days.

Nightjar

- 3.2.26. Surveys to determine the presence or absence of breeding Nightjar *Caprimulgus europaeus* were undertaken on the Sunnica East Site B on 20th June 2019 and 8th July 2019, and followed the species-specific methodology detailed by Gilbert *et. al.*, (1998) (Ref 8H-13). Surveys were undertaken in the Sunnica East Site B only, as this area had the most suitable habitat for breeding Nightjar, which included scrub and young conifer plantation.
- 3.2.27. Surveys for Nightjar involves undertaking surveys, at night, between dusk and one hour after dusk or between one hour before dawn and dawn to listen for Nightjar territorial display activity such as males 'churring'. For health and safety reasons, two surveyors were used and in accordance with the survey methodology (Ref 8H-13), surveys were undertaken on dry nights with wind speeds of Beaufort force 3 or lighter.
- 3.2.28. On each visit, a specifically chosen survey route was walked at a slow pace with start and finish times noted. All Nightjar seen and heard were recorded directly onto an ArcGIS base map using ESRI software on hand-held PDA devices, with a 1:10,000 scale Ordnance Survey base map of the survey area, with specific codes used to denote churring, calling, movements between areas, flight, aggressive encounters and other Nightjar behaviour.

3.3. Assessment of Ornithological Importance

- 3.3.1. The assessment of the ornithological importance of the survey area during the bird breeding season was made by evaluating any species afforded special statutory protection or those included on one, or more, of the lists of species of conservation interest, as detailed in sections 2.1-2.4 of this appendix. These include:
- species listed on Annex 1 of the EU Birds Directive;
 - species listed on Schedule 1 of the WCA, 1981 (as amended);
 - priority bird species in the UK;
 - species listed as priority species or additional species of interest on the Cambridgeshire and Peterborough BAP (**Table 8H-1**);
 - species listed as a priority species on the Suffolk BAP (**Table 8H-1**); and
 - species included in the Birds of Conservation Concern (BoCC) Red and Amber Lists (Eaton *et al.* 2015).

Species Abundance

- 3.3.2. In addition to evaluating a site based on its populations of breeding birds in relation to legal status, rarity and biodiversity importance, consideration has to be given to the value of the survey area for the population of individual species that it supports. This can be done by comparing the population present within the survey area with the national and county breeding population for certain species. ‘National estimates for breeding birds are published in a paper: ‘*Population estimates of birds in Great Britain and the United Kingdom*’ (Ref 8H-15). The BTO Bird Atlas 2007-2011 (Balmer *et al.*, 2013) (Ref 8H-16) was also reviewed for species information on a national level.
- 3.3.3. Information on populations of nationally rare species was sourced from the most recently published paper by the Rare Breeding Birds Panel (RBBP) (Ref 8H-17).
- 3.3.4. Information on the population status of breeding bird species at a county level was sourced from the Cambridgeshire Bird Atlas 2007 - 2011 (Bacon *et al.*, 2013) (Ref 8H-18) and the Suffolk Bird Atlas 2007 – 2011 (Regnault, 2014) (Ref 8H-19).
- 3.3.5. County-level estimates on the breeding bird populations of the majority of species in Cambridgeshire and Suffolk were also obtained from county avifauna reports, where this information was available.

Species Diversity

- 3.3.6. The number of species recorded in an area is a simple measure of diversity that can indicate its importance at each season of the year.
- 3.3.7. **Table 8H-4** shows the breeding species diversity criteria as outlined in Fuller (1980) (Ref 8H-20), which provided a method for assessing the ornithological interest of sites for conservation during the bird breeding season, based on the number of species present.

Table 8H-4 Breeding Species Diversity Criteria (Fuller, 1980)

<i>Local</i>	<i>County</i>	<i>Regional</i>	<i>National</i>
25-49	50-69	70-84	85+

- 3.3.8. It should be noted that Fuller’s analysis was developed in the 1970s and, since then, species diversity has declined significantly. As a result, Fuller’s thresholds are, in most circumstances, too high for today’s breeding bird populations. However, it is not considered that the differences would be sufficient to increase the geographical scale at which the assemblages are considered to have value.
- 3.3.9. Local Wildlife Sites (LWS) (or County Wildlife Sites (CWS)) are among the most important places for wildlife in Cambridgeshire and Suffolk, together with legally protected land such as Sites of Special Scientific Interest (SSSIs).

3.3.10. In Cambridgeshire, an individual CWS can be selected for birds if it meets the criteria within Wildlife Trust, Cambridgeshire and Peterborough County Wildlife Sites Selection Guidelines (Wildlife Trust, 2014) (Ref 8H-21). These guidelines state that the criterion for selection of County Wildlife Sites applies to (where relevant to the Scheme):

- a site which supports a range of breeding birds with a value equal to or exceeding the following indices:
- Lowland Damp Grassland – 11;
- Lowland Open Water and Margins – 24;
- Scrub – 10; or
- Woodland – 26.
- breeding sites of a county rarity; and
- localities with 50 breeding bird species recorded in the last five years.

3.3.11. In Suffolk, CWS are selected for their habitats and subsequently has no specific criteria for birds. Therefore, species diversity in Suffolk has been measured using professional judgement, considering species presence within distinct habitat types within the Scheme boundary, e.g. farmland passerines.

Importance of the Breeding Bird Population

3.3.12. To support a focussed assessment of the population of breeding birds within the Scheme boundary, their biodiversity value has been defined with reference to the geographical level at which it matters. The frames of reference used in this report were made using the values presented in the ‘Guidelines for Ecological Impact Assessment in the United Kingdom: Terrestrial, Freshwater, Coastal and Marine’ (CIEEM, 2018) (hereafter referred to as the CIEEM Guidelines) (Ref 8H-22); and professional judgement.

3.3.13. The CIEEM guidelines use a framework, linked to a geographical scale at which the receptor has been valued (i.e. international, national, regional, county, local or site) and this method represents best practice guidance. This assessment criteria, set out in **Table 8H-5**, has been used in conjunction with species rarity, abundance and diversity within the survey area to assess the biodiversity importance of the breeding bird populations recorded during the field surveys.

Table 8H-5 Importance of Ornithological Features

<i>Importance of Ornithological Features</i>	<i>Descriptors and Examples of Criteria</i>
International or European	Resident or regularly occurring populations of species which may be considered of value at an international or European level ¹ where: <ul style="list-style-type: none"> • the loss of these populations would adversely affect the conservation status or distribution of the species at this geographic scale; • the population forms a critical part² of a wider population at this scale; or

Importance of Ornithological Features

Descriptors and Examples of Criteria

	<ul style="list-style-type: none"> the species is at a critical phase³ of its life cycle at this scale.
UK or National	<p>Areas of habitats with priority species identified in the UK Post-2010 Biodiversity Framework <i>i.e.</i> UK Biodiversity Action Plan (BAP), including those published in accordance with Section 41 of the NERC Act (2006) and those considered to be of principal importance for the conservation of biodiversity.</p> <p>Resident or regularly occurring populations of species which may be considered of value at a UK or a national level⁴ where:</p> <ul style="list-style-type: none"> the loss of these populations would adversely affect the conservation status or distribution of the species at this geographic scale; the population forms a critical part of a wider population at this scale; or the species is at a critical phase of its life cycle at this scale.
Regional	<p>Populations of species of value at a regional level (<i>i.e.</i> East Anglia). Resident or regularly occurring populations of species which may be considered of value at a regional level⁵ where:</p> <ul style="list-style-type: none"> the loss of these populations would adversely affect the conservation status or distribution of the species at this geographic scale; the population forms a critical part of a wider population at this scale; or the species is at a critical phase of its life cycle at this scale.
County or Unitary Authority or District	<p>Populations of species of value at a County (<i>i.e.</i> Cambridgeshire and Suffolk) level or District (<i>e.g.</i> East Cambridgeshire). Resident or regularly occurring populations of species which may be considered of value at a County (or District)⁶ level where:</p> <ul style="list-style-type: none"> the loss of these populations would adversely affect the conservation status or distribution of the species at this geographic scale; the population forms a critical part of a wider population at this scale; or, the species is at a critical phase of its life cycle at this scale.
Local	<p>Species populations of value in a local (<i>i.e.</i> within ~ 2 km of the site) context.</p> <p>Populations and, or communities of species considered to appreciably enrich the habitat resource within the local context (such as veteran trees), including features of value for migration, dispersal or genetic exchange.</p>
Site	<p>Habitats and associated species that is of value in the context of the site only.</p> <p>Populations of common and widespread species.</p>

¹ Such species include those listed within the Directive 2009/147/EC on the Conservation of Wild Birds (*i.e.* EC Birds Directive) (codified version of Council Directive 79/409/EEC as amended) or

Importance of Ornithological Features *Descriptors and Examples of Criteria*

animal or plant species listed within Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (i.e. Habitats Directive).

²Such populations include sub-populations that are essential to maintenance of metapopulation dynamics, e.g. critical emigration and, or immigration links between otherwise discrete populations.

³Seasonal activity or behaviour upon which survival or reproduction depends.

⁴Species which may be considered at the UK or national level mean: birds, other animals and plants which receive legal protection on the basis of their conservation interest (those listed within the Wildlife and Countryside Act 1981 (as amended) Schedule 1, 5 and 8); species listed for their principal importance for biodiversity (in accordance with the Natural Environment and Communities Act 2006 Section 41 England), priority species listed within the UK Post 2010 Biodiversity Framework (i.e. UK Biodiversity Action Plan (UKBAP)), or species listed within the Red Data Book.

⁵Such species include those listed in the appropriate Natural Character Area description.

⁶Such species include those at county level (i.e. Cambridgeshire and Suffolk) including unitary authority area i.e. District level (i.e. East of England); as listed on the LBAPs; and listed as a county designated site.

*As well as assigning importance there is also a need to identify all legally protected species that could be affected by the proposed scheme in order that measures can be taken to ensure that adherence to the relevant legislation is observed. This may include the adoption of mitigation and appropriate licensing which are acceptable to Natural England.

3.4. Assumptions and Limitations

Desk Study

- 3.4.1. The aim of a desk study was to help characterise the baseline context of the Scheme and provide valuable background information that would not be captured by site surveys alone. Information obtained during the course of the desk study was dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for a particular species does not necessarily mean that the species does not occur in the study area. Likewise, the presence of records of species does not automatically mean that these still occur within the area of interest or are relevant in the context of the Scheme.

Field Survey

- 3.4.2. During the course of the survey, there were a number of modifications to the Scheme alignment, which in turn resulted in minor modifications to the survey area used during the course of the survey for breeding birds. Whilst small areas were not subject to all six survey visits, it is considered that sufficient representatives of all habitat types were covered within the entirety of the survey period, to allow for a comprehensive assessment of bird species and assemblages present. The buffer around the Scheme boundary forming the survey area was such that it allowed for minor modifications to the Scheme without reducing efficacy of the survey. Any modifications to the Scheme during the course of the surveys are therefore, not considered to have significantly altered the conclusions drawn within this report.
- 3.4.3. Despite the limitations detailed above, it is considered that sufficient information has been gathered during the assessment to provide a representative sample of the breeding bird population present within the Scheme boundary.

4. Results

4.1. Desk Study

4.1.1. Records of 108 protected and, or notable bird species from the last ten years were returned within 2km of the Site and a list of the 108 protected and, or notable bird species recorded during the desk study is included in **Sub-Appendix B**.

4.2. Field Survey

4.2.1. The following sections present the results of the breeding bird data collected for the whole Scheme and then broken down into the respective Scheme areas (see section 1.2.6 of this appendix). Species lists in the following tables are listed in taxonomic order, as defined by the British Ornithologists Union (BOU) British List³.

4.2.2. A total of 90 species (including species on Schedule 1 of the WCA and Annex 1 of the EU Birds Directive) were recorded within the survey area during the surveys for breeding birds undertaken for the whole Scheme between April and June 2019; and March and June 2020.

4.2.3. Of the 90 species recorded within the survey area, territories of 62 species were confirmed and territories of a further four species were considered to be probable or possible within the survey area, resulting in a breeding bird assemblage of 66 species. Records relating to the remaining 24 species were of non-breeding species.

4.2.4. A breakdown of the breeding bird assemblages per Scheme area, is presented in **Table 8H-6**.

Table 8H-6 Breeding assemblages per Scheme area

<i>Sunnica East Site A</i>		<i>Sunnica East Site B</i>	<i>Sunnica West Site A</i>	<i>Sunnica West Site B</i>	<i>Grid Connection Route</i>				<i>Burwell National Grid Substation Extension</i>
<i>A1</i>	<i>A2</i>				<i>A1</i>	<i>A2</i>	<i>A3</i>	<i>A4</i>	
17	39	44	32	28	22	11	14	24	16

4.2.5. A summary of the breeding and conservation status of the 90 species recorded for the whole Scheme during the survey, with the numbers of territories identified (or thought likely in the case of probable and possible records) is provided in **Table 8H-7**. Owing to the recording of species listed on Schedule 1 of the WCA within the survey area and the sensitivity of these species to potential disturbance, those species have been redacted from Table 8H-2.

³ <https://www.bou.org.uk/wp-content/uploads/2019/02/British-List-2019-02-01.pdf> [accessed January 2020]

- 4.2.6. For species which are widespread throughout the survey area (e.g. Blue Tit *Cyanistes caeruleus*), common within Cambridgeshire, Suffolk and the UK and not of conservation concern (i.e. not listed on one or more of the lists of conservation concern as detailed in this report), the number of breeding territories of these species (including probable or possible) have not been calculated and these are referred to in **Table 8H-7** as being present (P).
- 4.2.7. Breeding territory information for records of 'possible' breeders was also not calculated, due to the low number of registrations of birds; however, an estimation of the possible number of territories is included in parentheses in **Table 8H-7**.
- 4.2.8. Breeding territory information for sensitive breeding species that are included on Annex 1 of the EU Birds Directive, or on Schedule 1 of the WCA is not included within this technical appendix. This information has been redacted. Should you like access to the full report please contact: info@sunnica.co.uk / 0808 168 7925.

Table 8H-7 Breeding status, number of territories and conservation status of birds recorded within the Site (excluding species on Schedule 1 of the WCA and Annex 1 of the EU Birds Directive)

Species (English name)	Scientific name	Conservation Status (where applicable)	Breeding Status	Sunnica East		Sunnica West		Grid Connection Route				Burwell National Grid Substation Extension	Total number of breeding territories (where applicable)	
				Site A		Site B	Site A	Site B	A1	A2	B1			B2
				A1	A2									
Mute Swan	<i>Cygnus olor</i>	BoCC Amber	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Egyptian Goose	<i>Alopochen aegyptiaca</i>	-	Confirmed	0	0	1	0	0	0	0	0	0	0	1
Shelduck	<i>Tadorna tadorna</i>	BoCC Amber	Confirmed	0	1	2	0	0	0	0	0	0	0	3
Mallard	<i>Anas platyrhynchos</i>	BoCC Amber	Confirmed	0	1		0	0	0	0	0	1	0	2
Tufted Duck	<i>Aythya fuligula</i>	-	Confirmed	0	1	1	0	0	0	0	0	0	0	2
Red-legged Partridge	<i>Alectoris rufa</i>	-	Confirmed	P	P	P	P	0	P	P	P	P	0	P
Pheasant	<i>Phasianus colchicus</i>	-	Confirmed	P	P	P	P	P	P	P	P	P	0	P
Little Grebe	<i>Tachybaptus ruficollis</i>	-	Confirmed	0	0	1	0	0	0	0	0	0	0	1

Species (English name)	Scientific name	Conservation Status (where applicable)	Breeding Status	Sunnica East		Sunnica West		Grid Connection Route				Burwell National Grid Substation Extension	Total number of breeding territories (where applicable)	
				Site A		Site B	Site A	Site B	A1	A2	B1			B2
				A1	A2									
Great Crested Grebe	<i>Podiceps cristatus</i>	-	Confirmed	0	1	0	0	0	0	0	0	0	0	1
Grey Heron	<i>Ardea cinerea</i>	-	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Little Egret	<i>Egretta garzetta</i>	Annex 1	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Cormorant	<i>Phalacrocorax carbo</i>	-	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Sparrowhawk	<i>Accipiter nisus</i>	-	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Marsh Harrier	<i>Circus aeruginosus</i>	Annex 1, WCA Schedule 1	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Red Kite	<i>Milvus milvus</i>	Annex 1, WCA Schedule 1	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Buzzard	<i>Buteo buteo</i>	-	Confirmed	0	0	2	3	0	0	0	0	0	0	5

Species (English name)	Scientific name	Conservation Status (where applicable)	Breeding Status	Sunnica East		Sunnica West		Grid Connection Route				Burwell National Grid Substation Extension	Total number of breeding territories (where applicable)	
				Site A		Site B	Site A	Site B	A1	A2	B1			B2
				A1	A2									
Coot	<i>Fulica atra</i>	-	Confirmed	0	2	0	0	0	0	0	0	0	0	2
Oystercatcher	<i>Haematopus ostralegus</i>	BoCC Amber	Confirmed	1	2	4	0	0	0	0	0	0	0	7
Lapwing	<i>Vanellus vanellus</i>	Priority Species, BoCC Red, Cambs BAP, Suffolk BAP	Confirmed	5	6	8	0	4	0	0	0	0	0	23
Curlew	<i>Numenius arquata</i>	Priority Species, BoCC Red, Cambs BAP, Suffolk BAP	Confirmed	0	0	0	1	0	0	0	0	0	0	1
Common Sandpiper	<i>Actitis hypoleucos</i>	BoCC Amber	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	BoCC Amber	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Herring Gull	<i>Larus argentatus</i>	Priority Species, BoCC Red,	Non-breeding	0	0	0	0	0	0	0	0	0	0	0

Species (English name)	Scientific name	Conservation Status (where applicable)	Breeding Status	Sunnica East		Sunnica West		Grid Connection Route				Burwell National Grid Substation Extension	Total number of breeding territories (where applicable)	
				Site A		Site B	Site A	Site B	A1	A2	B1			B2
				A1	A2									
		Cams BAP, Suffolk BAP												
Lesser Black-backed Gull	<i>Larus fuscus</i>	BoCC Amber	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Stock Dove	<i>Columba oenas</i>	BoCC Amber	Confirmed	2	1	3	1	0	0	0	0	0	0	7
Woodpigeon	<i>Columba palumbus</i>	-	Confirmed	P	P	P	P	P	P	P	P	P	P	P
Turtle Dove	<i>Streptopelia turtur</i>	Priority Species, BoCC Red, Cams BAP, Suffolk BAP	Possible	0	(1)	0	0	0	0	0	0	0	0	(1)
Collared Dove	<i>Streptopelia decaocto</i>	-	Confirmed	0	0	1	0	0	0	0	0	0	0	1
Cuckoo	<i>Cuculus canorus</i>	Priority Species, BoCC Red, Suffolk BAP	Confirmed	0	1	0	1	0	0	0	0	0	0	2
Tawny Owl	<i>Strix aluco</i>	BoCC Amber	Probable	0	0	0	(1)	0	0	0	0	0	0	(1)

Species (English name)	Scientific name	Conservation Status (where applicable)	Breeding Status	Sunnica East		Sunnica West		Grid Connection Route				Burwell National Grid Substation Extension	Total number of breeding territories (where applicable)	
				Site A		Site B	Site A	Site B	A1	A2	B1			B2
				A1	A2									
Swift	<i>Apus apus</i>	BoCC Amber, Cambs BAP	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Great Spotted Woodpecker	<i>Dendrocopus major</i>	-	Confirmed	0	0	1	0	1	0	0	0	0	0	2
Green Woodpecker	<i>Picus viridus</i>	-	Confirmed	0	0	1	0	0	0	0	0	0	0	1
Kestrel	<i>Falco tinnunculus</i>	BoCC Amber	Confirmed	0	0	0	1	0	0	0	0	0	0	1
Jay	<i>Garrulus glandarius</i>	-	Confirmed	0	0	1	1	0	1	0	0	0	0	3
Magpie	<i>Pica pica</i>	-	Possible	0	0	0	0	(1)	0	0	0	0	0	(1)
Jackdaw	<i>Corvus monedula</i>	-	Confirmed	0	0	0	2	(1)	0	0	0	0	0	2-3
Rook	<i>Corvus frugilegus</i>	-	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Carrion Crow	<i>Corvus corone</i>	-	Confirmed	0	0	0	1	0	0	0	0	(1)	0	1-2

Species (English name)	Scientific name	Conservation Status (where applicable)	Breeding Status	Sunnica East		Sunnica West		Grid Connection Route				Burwell National Grid Substation Extension	Total number of breeding territories (where applicable)	
				Site A		Site B	Site A	Site B	A1	A2	B1			B2
				A1	A2									
Coal Tit	<i>Periparus ater</i>	-	Confirmed	0	0	9	4	0	0	0	0	0	0	13
Blue Tit	<i>Cyanistes caeruleus</i>	-	Confirmed	0	P	P	P	P	P	P	P	P	P	P
Great Tit	<i>Parus major</i>	-	Confirmed	0	P	P	P	P	P	P	P	P	P	P
Skylark	<i>Alauda arvensis</i>	Priority Species, BoCC Red, Cams BAP, Suffolk BAP	Confirmed	15	9	27	28	4	2	2	1	5	0	93
Sand Martin	<i>Riparia riparia</i>	-	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Swallow	<i>Hirundo rustica</i>	-	Confirmed	0	0	1	0	0	0	0	0	0	0	1
House Martin	<i>Delichon urbicum</i>	BoCC Amber	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Long-tailed Tit	<i>Aegithalos caudatus</i>	-	Confirmed	0	0	6	9	1	1	0	1	1	0	19

Species (English name)	Scientific name	Conservation Status (where applicable)	Breeding Status	Sunnica East		Sunnica West		Grid Connection Route				Burwell National Grid Substation Extension	Total number of breeding territories (where applicable)	
				Site A		Site B	Site A	Site B	A1	A2	B1			B2
				A1	A2									
Willow Warbler	<i>Phylloscopus trochilus</i>	BoCC Amber	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Chiffchaff	<i>Phylloscopus collybita</i>	-	Confirmed	0	1	6	11	4	0	0	0	0	3	25
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	-	Confirmed	0	2	0	0	0	0	0	0	0	0	2
Reed Warbler	<i>Acrocephalus scirpaceus</i>	-	Confirmed	0	5	0	0	2	0	0	0	1	2	10
Grasshopper Warbler	<i>Locustella naevia</i>	Priority Species, BoCC Red, Cambs BAP, Suffolk BAP	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Blackcap	<i>Sylvia atricapilla</i>	-	Confirmed	1	3	19	34	4	2	0	1	2	3	69
Garden Warbler	<i>Sylvia borin</i>	-	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Lesser Whitethroat	<i>Sylvia curruca</i>	-	Confirmed	0	0	3	4	2	0	0	0	0	0	9

Species (English name)	Scientific name	Conservation Status (where applicable)	Breeding Status	Sunnica East			Sunnica West		Grid Connection Route				Burwell National Grid Substation Extension	Total number of breeding territories (where applicable)
				Site A		Site B	Site A	Site B	A1	A2	B1	B2		
				A1	A2									
Whitethroat	<i>Sylvia communis</i>	-	Confirmed	0	6	7	3	7	2	0	1	6	2	34
Goldcrest	<i>Regulus regulus</i>	-	Confirmed	0		8	1	0	0	0	0	0	0	9
Wren	<i>Troglodytes troglodytes</i>	-	Confirmed	P	P	P	P	P	P	P	P	P	P	P
Nuthatch	<i>Sitta europea</i>	-	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Treecreeper	<i>Certhia familiaris</i>	-	Confirmed	0	0	2	3	0	0	0	0	0	0	5
Starling	<i>Sturnus vulgaris</i>	Priority Species, BoCC Red, Suffolk BAP	Confirmed	0	1	1	0	0	0	0	0	2	0	4
Ring Ouzel	<i>Turdus torquatus</i>	Priority Species, BoCC Red	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Blackbird	<i>Turdus merula</i>	-	Confirmed	0	P	P	0	P	P	P	P	P	P	P
Song Thrush	<i>Turdus philomelos</i>	Priority Species,	Confirmed	1	1	9	6	2	0	0	0	0	1	20

Species (English name)	Scientific name	Conservation Status (where applicable)	Breeding Status	Sunnica East		Sunnica West		Grid Connection Route				Burwell National Grid Substation Extension	Total number of breeding territories (where applicable)	
				Site A		Site B	Site A	Site B	A1	A2	B1			B2
				A1	A2									
		BoCC Red, Cambs BAP, Suffolk BAP												
Mistle Thrush	<i>Turdus viscivorus</i>	Priority Species, BoCC Red	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Spotted Flycatcher	<i>Muscicapa striata</i>	Priority Species, BoCC Red, Cambs BAP, Suffolk BAP	Confirmed	0	0	4	0	0	0	0	0	0	0	4
Robin	<i>Erithacus rubecula</i>	-	Confirmed	P	P	P	P	P	P	P	P	P	P	P
Nightingale	<i>Luscinia megarhynchos</i>	BoCC Red	Confirmed	0	0	1	0	0	0	0	0	0	0	1
Wheatear	<i>Oenanthe oenanthe</i>	-	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
House Sparrow	<i>Passer domesticus</i>	Priority Species, BoCC Red,	Confirmed	0	0	0	0	0	0	0	0	1	0	1

Species (English name)	Scientific name	Conservation Status (where applicable)	Breeding Status	Sunnica East		Sunnica West		Grid Connection Route				Burwell National Grid Substation Extension	Total number of breeding territories (where applicable)	
				Site A		Site B	Site A	Site B	A1	A2	B1			B2
				A1	A2									
		Camb's BAP, Suffolk BAP												
Duncock	<i>Prunella modularis</i>	Priority Species, BoCC Amber, Suffolk BAP	Confirmed	3	7	31	10	2	1	0	0	4	1	59
Yellow Wagtail	<i>Motacilla flava</i>	Priority Species, BoCC Red, Camb's BAP, Suffolk BAP	Confirmed	0	4	5	5	0	1	0	0	0	0	15
Grey Wagtail	<i>Motacilla cinerea</i>	BoCC Red	Confirmed	0	0	0	0	0	0	0	0	1	0	1
Pied Wagtail	<i>Motacilla alba</i>	-	Confirmed	1	2	1	0	0	1	0	0	0	0	5
Meadow Pipit	<i>Anthus pratensis</i>	BoCC Amber	Confirmed	0	0	0	0	1	0	0	0	0	0	1
Tree Pipit	<i>Anthus trivialis</i>	Priority Species, BoCC Red, Suffolk BAP	Non-breeding	0	0	0	0	0	0	0	0	0	0	0

Species (English name)	Scientific name	Conservation Status (where applicable)	Breeding Status	Sunnica East			Sunnica West		Grid Connection Route				Burwell National Grid Substation Extension	Total number of breeding territories (where applicable)
				Site A		Site B	Site A	Site B	A1	A2	B1	B2		
				A1	A2									
Chaffinch	<i>Fringilla coelebs</i>	-	Confirmed	P	P	P	P	P	P	P	P	P	P	P
Bullfinch	<i>Pyrrhula pyrrhula</i>	Priority Species, BoCC Amber, Cambs BAP, Suffolk BAP	Possible	0	0	(1)	0	0	0	0	0	0	0	(1)
Greenfinch	<i>Chloris chloris</i>	-	Confirmed	0	0	3	0	1	0	0	0	1	0	5
Linnet	<i>Linaria cannabina</i>	Priority Species, BoCC Red, Cambs BAP, Suffolk BAP	Confirmed	2	5	6	0	3	1	0	0	1	1	19
Crossbill	<i>Loxia curvirostra</i>	WCA Schedule 1	Non-breeding	0	0	0	0	0	0	0	0	0	0	0
Goldfinch	<i>Carduelis carduelis</i>	-	Confirmed	0	P	0	P	P	P	P	P	P	P	P
Corn Bunting	<i>Emberiza calandra</i>	Priority Species, BoCC Red,	Confirmed	3	1	0	0	0	0	0	0	0	0	4

Species (English name)	Scientific name	Conservation Status (where applicable)	Breeding Status	Sunnica East		Sunnica West		Grid Connection Route				Burwell National Grid Substation Extension	Total number of breeding territories (where applicable)	
				Site A		Site B	Site A	Site B	A1	A2	B1			B2
				A1	A2									
		Cambs BAP, Suffolk BAP												
Yellowhammer	<i>Emberiza citrinella</i>	Priority Species, BoCC Red, Cambs BAP, Suffolk BAP	Confirmed	0	5	3	11	4	2	0	0	3	0	28
Reed Bunting	<i>Emberiza schoeniclus</i>	Priority Species, BoCC Amber, Cambs BAP, Suffolk BAP	Confirmed	1	1	0	0	1	0	0	0	0	1	4
TOTAL NUMBER OF BREEDING SPECIES				17	39	44	32	28	22	11	14	24	16	66

5. Evaluation

5.1. Desk Study

5.1.1. Records of 108 protected / notable species were returned from the CPERC and SBIS desk study. Of these 108 species:

- 32 are listed on Annex 1 of the EU Birds Directive;
- 34 are listed as Priority Species;
- 37 species are included on the BoCC Red List;
- 56 species are included on the BoCC Amber List;
- 24 species are included on the Cambridgeshire and Peterborough Priority Species and three species listed on the Cambridgeshire and Peterborough Additional Species of Interest; and
- 15 species are listed as Suffolk Biodiversity Action Plan species.

5.2. Field Survey

5.2.1. Breeding territories of 62 species were confirmed within the whole Scheme survey area during surveys for breeding birds in 2019 and 2020 and a further four species were probably or possibly on breeding territories within the survey area, resulting in a breeding bird assemblage of 66 species.

5.2.2. From the breeding assemblage of 66 species, recorded during field surveys:

- one species is included on Annex 1 of the EU Birds Directive;
- five species are included on Schedule 1 of the Wildlife and Countryside Act (1981, as amended);
- 17 species are listed as a Priority Species in the UK;
- 15 species are included on the BoCC Red List;
- 12 species are included on the BoCC Amber List;
- 15 species are included as a priority species or additional species of interest in Cambridgeshire; and
- 17 species are listed as Suffolk Biodiversity Action Plan species.

5.2.3. The number of confirmed (and probable or possible) territories of bird species of conservation interest within each Scheme area are included in **Table 8H-8** Number of species of conservation interest recorded within each Scheme area.

Table 8H-8 Number of species of conservation interest recorded within each Scheme area

Conservation Designation	Sunnica East Site A		Sunnica East Site B	Sunnica West Site A	Sunnica West Site B	Grid Connection Route				Burwell National Grid Substation Extension
	A1	A2				A1	A2	B1	B2	
Annex 1	1	0	1	0	0	0	0	0	0	0
WCA Schedule 1	1	4	2	1	1	1	0	0	0	0
Priority Species	9	12	12	6	7	5	1	1	5	4
BoCC Red	6	10	10	5	5	4	1	1	5	2
BoCC Amber	5	7	7	4	4	1	0	0	2	2
Cambs Priority Species	8	n/a	n/a	5	7	n/a	1	1	3	3
Suffolk BAP	n/a	12	12	n/a	n/a	5	n/a	n/a	n/a	n/a

Notes on Table 8H-8: n/a – not applicable as the Scheme area is not within this county

Specially Protected Species

5.2.4. Information regarding specially protected species is confidential and has therefore been redacted from this technical appendix.

Species of Conservation Importance

Priority Species

5.2.5. Sixteen species (Lapwing, Curlew, Turtle Dove, Cuckoo, Skylark, Starling, Song Thrush, Spotted Flycatcher, House Sparrow, Dunnock, Yellow Wagtail, Bullfinch, Linnet, Corn Bunting, Yellowhammer and Reed Bunting) with breeding territories confirmed or having probable, or possible breeding territories within the survey area are listed as Species of Principal Importance prepared under Section 41 of the Natural Environment and Rural Communities Act 2006.

5.2.6. Of the 16 priority species recorded across the Site, the number of breeding territories confirmed (or thought probable or possible), within each Scheme area were (see also **Table 8H-8**):

- 12 within Sunnica East Site A;
- 12 within Sunnica East Site B;
- six within Sunnica West Site A;
- seven within Sunnica West Site B;
- six within the Grid Connection Routes; and

- four within the Burwell National Grid Substation Extension area.

Birds of Conservation Concern

5.2.7. Breeding territories were confirmed, or thought probable, or possible for fifteen species (Lapwing, Curlew, Turtle Dove, Cuckoo, Skylark, Starling, Song Thrush, Spotted Flycatcher, Nightingale, House Sparrow, Yellow Wagtail, Grey Wagtail, Linnet, Corn Bunting and Yellowhammer) within the survey area that are included on the BoCC Red List.

1.1.1 Of the 15 BoCC Red listed species recorded across the Site, the number of breeding territories confirmed (or thought probable or possible), within each Scheme area were (see also **Table 8H-8**):

- Ten within Sunnica East Site A;
- ten within Sunnica East Site B;
- five within Sunnica West Site A;
- five within Sunnica West Site B;
- six within the Grid Connection Routes; and
- two within the Burwell National Grid Substation Extension area.

5.2.8. Breeding territories were confirmed, or thought probable, or possible for eleven species (Shelduck, Mallard, XX, Oystercatcher, Stock Dove, Tawny Owl, Kestrel, Dunnock, Meadow Pipit, Bullfinch and Reed Bunting) within the survey area that are included on the BoCC Amber List.

1.1.2 Of the 11 BoCC Amber listed species recorded across the Site, the number of breeding territories confirmed (or thought probable or possible), within each Scheme area were (see also **Table 8H-8**):

- seven within Sunnica East Site A;
- seven within Sunnica East Site B;
- four within Sunnica West Site A;
- four within Sunnica West Site B;
- two within the Grid Connection Routes; and
- two within the Burwell National Grid Substation Extension area.

5.2.9. Inclusion on the Birds of Conservation Concern Red or Amber list does not confer any statutory protection. However, the species concerned are all of conservation importance and considered to be under varying levels of threat in a UK context.

Cambridgeshire and Peterborough BAP

5.2.10. Breeding territories were confirmed, or thought probable, or possible for 17 species (Lapwing, XX, Curlew, Turtle Dove, Barn Owl, Skylark, Starling, Song Thrush, Spotted Flycatcher, House Sparrow, Dunnock, Yellow Wagtail, Bullfinch, Linnet, Corn Bunting, Yellowhammer and Reed Bunting) within the Site that are included on the Cambridgeshire and Peterborough BAP.

1.1.3 Of the 17 Cambridgeshire and Peterborough BAP species recorded across the Site, the number of breeding territories confirmed (or thought probable or possible), within each Scheme area (with consideration to the geographic location of each Scheme area), were (see also **Table 8H-8**):

- eight within Sunnica East Site A1;
- five within Sunnica West Site A;
- seven within Sunnica West Site B;
- four within the Grid Connection Routes; and
- three within the Burwell National Grid Substation Extension area.

Suffolk BAP

1.1.4 Breeding territories were confirmed, or thought probable, or possible for 17 species (Lapwing, XX, Curlew, Turtle Dove, Cuckoo, Skylark, Starling, Song Thrush, Spotted Flycatcher, House Sparrow, Dunnock, Yellow Wagtail, Bullfinch, Linnet, Corn Bunting, Yellowhammer and Reed Bunting) within the survey area that are included on the Suffolk BAP.

1.1.5 Of the 17 Suffolk BAP species recorded across the Site, the number of breeding territories confirmed (or thought probable or possible), within each Scheme area (with consideration to the geographic location of each Scheme area), were (see also **Table 8H-8**):

- 12 within Sunnica East Site A2;
- 12 within Sunnica East Site B; and
- five within the Grid Connection Route A1.

5.3. Species Abundance

5.3.1. In addition to evaluating a site based on its populations of breeding birds in relation to legal status, rarity and conservation value, consideration has to be given to the value of the site for the population of individual species that it supports. This can be done by comparing the population present on site with the national and county breeding population for certain species.

5.3.2. The majority of species populations within the Site boundary are considered to be of no more than local importance.

5.4. Species Diversity

5.4.1. To measure species diversity, the breeding assemblage (66) recorded in the survey area was evaluated against the criteria developed by Fuller (Ref 8H-20) and taking into consideration that species diversity has declined significantly since the criteria were developed. The breeding assemblage score of 66 species would regard the value of the whole Scheme area, as being of **county** importance for breeding birds.

5.4.2. Using Fuller's method (Ref 8H-20) to evaluate species diversity within the two counties that the Scheme crosses (Cambridgeshire and Suffolk), the importance of the species assemblages within each Scheme area are as follows:

- Cambridgeshire:
 - Sunnica East Site A1 – local importance;
 - Sunnica West Sites A and B – local importance;
 - Grid Connection Routes A2, B1 and B2 – local importance; and
 - Burwell National Grid Substation Extension- local importance.
- Suffolk:
 - Sunnica East Site A2 – local importance;
 - Sunnica East Site B – local importance; and
 - Grid Connection Route A1 – local importance.

5.4.3. Evaluation of the breeding species assemblage and numbers recorded during surveys, with respect to criteria for selection of Local Wildlife Sites (of County value) in Cambridgeshire (Ref 8H-21) indicates that the Scheme areas occurring within the county (Sunnica East Sites A and B; Grid Connection Routes A2, B1 and B2; and the Burwell National Grid Substation Extension:

- do not support a range of breeding birds with a value equal to or exceeding the indices for scrub and woodland (of those habitats occurring on Site) within the county;
- do support a breeding county rarity; and
- do not support 50 breeding bird species recorded in the last five years.

5.4.4. This assessment further supports that the Scheme areas within Cambridgeshire are of no more than **county** importance for breeding birds. Whilst there is no CWS criteria to evaluate the Scheme areas within Suffolk, the Sunnica East Sites A and B are likely to be of no more than county importance..

5.5. Species distribution

5.5.1. The location of Priority species, BoCC Red and Amber-listed bird species, (see **Table 8H-7**) are shown in **Figures 8H-5**. In general, concentrations of species were found within the most suitable habitats to support each individual species' needs (*i.e.* species reliant on waterbodies were found on Site close to water, species that require woodland habitat, were found within woodland habitat on Site, *etc*).

5.6. Evaluation of key habitat types for breeding birds

5.6.1. A summary of the broad habitat types present in the survey area and their key ornithological features, are presented in **Table 8H-9**.

Table 8H-9 Key Ornithological Features of Habitat within the Site

<i>Broad Habitat Type</i>	<i>Key Ornithological Features</i>
Waterbodies (ponds and agricultural reservoirs)	Supports species associated with wetland features, such as Mallard (and other waterfowl) and gulls. Also support species associated with wetland margins, including Lapwing.

Arable farmland	The predominant habitat type occurring across the Site. Supports a number of notable breeding species of conservation concern.
Scrub / hedgerows	Scrub and hedgerows across the Site. Supports breeding species of conservation concern, such as Yellowhammer and Linnet.
Mature trees / woodland	Parcels of woodland and individual trees scattered throughout the Site. Supports species such as Green Woodpecker, as well as species often found in scrub / hedgerows.

6. Conclusions

6.1.1. The construction of the Scheme, in the absence of avoidance or mitigation, has the potential to affect the breeding bird assemblage recorded within the Site boundary. These potential effects include:

- Habitat loss and fragmentation;
- Displacement and/ or loss of breeding populations;
- Increase in noise, causing disturbance; and
- Visual disturbance.

6.1.2. The majority of ecological data is valid only for short periods due to the inherently transient nature of the subject (CIEEM, 2019⁴). On this basis, it is recommended that the surveys for breeding birds will need repeating in two years if a DCO application has not been submitted by this date or if refreshed data is required to support the construction phase (*i.e.* in 2021).

⁴ CIEEM: Advice Note on the lifespan of ecological surveys and reports <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf> (Accessed January 2020)

7. Outline Mitigation Proposals

7.1. Outline Mitigation Proposals

- 7.1.1. This section presents the conclusions of the survey work. Where recommendations are made, these will be taken forward as part of the EIA process and presented in the Environmental Statement supporting the DCO application.
- 7.1.2. A number of measures will be included within the design of the Scheme to mitigate for any potentially significant effects on the breeding bird assemblage recorded within the Site boundary.

Habitat Retention and Creation

- 7.1.3. The Scheme will retain as much of the existing boundary habitat as is practicable, such as hedgerows and scrub, along with all woodland blocks and waterbodies. However, the Scheme will result in habitat loss used by breeding birds, including arable farmland, grassland and small amounts of hedgerows and scrub (to facilitate access). Therefore, it is important that mitigation measures are included to alleviate the effects and include both habitat creation and enhancement. Whilst as much as possible of the existing habitat within the Scheme will be retained, any habitat loss will be mitigated for, through planting of new habitat, with the minimum objective of maintaining a similar assemblage and diversity of breeding birds to that which is already present within the Site.
- 7.1.4. Where possible habitat creation will be created and functional in advance of construction, so that any displaced populations have alternative areas of habitats available.
- 7.1.5. New scrub planting, to mitigate for the loss of hedgerow or scrub habitat used by breeding species of conservation concern such as Song Thrush and Yellowhammer, will include a mix of native species including Hawthorn *Crataegus monogyna* and Blackthorn *Prunus spinosa*. These habitats will provide replacement foraging, roosting and breeding habitat for birds in the summer months, along with foraging and roosting habitat for birds in the winter months.
- 7.1.6. Consideration will be given to providing artificial nest boxes for declining species of conservation concern such as Stock Dove, Starling and House Sparrow.
- 7.1.7. The creation of areas of set-aside or 'cover crops' would also benefit a range of arable farmland passerines present within the survey areas, including Yellowhammer, Linnets and Skylark. The opportunity should be sought to potentially manage any areas of redundant arable farmland generated by the Scheme for farmland passerines.

Mitigation for Compliance with Legislation

- 7.1.8. It is likely that the construction of the Scheme will be undertaken in a phased approach over many months. Where possible vegetation clearance works will

be undertaken outside of the bird breeding season (*i.e.* between September and February) to avoid any additional constraints associated with this activity.

- 7.1.9. If it is not possible to undertake vegetation clearance outside of the typical bird breeding season (*i.e.* where works have to take place between March and August inclusive), then it will be necessary for a suitably qualified ornithologist, acting as an Ecological Clerk of Works (ECoW), to conduct a survey for nesting birds in advance of planned clearance works. Typically, this survey will be undertaken 24 hours ahead of any planned clearance works.
- 7.1.10. Should active bird nests be discovered by the ECoW, then appropriate measures will be put in place to ensure that any nest found is not disturbed. There is no licence available to damage or destroy an active nest of a breeding bird at any time of year.
- 7.1.11. Protective measures, on discovery of an active nest, will involve placing a buffer around the nest within which no works will be undertaken until the nest has been judged, by a suitably qualified ornithologist, to no longer be in use (*i.e.* fledged young have left the nest or the nesting attempt has failed).
- 7.1.12. The radius of the protective buffer and duration it is imposed will be dependent on the species present and stage of breeding (*i.e.* with eggs, chicks, etc.). For the majority of birds, this buffer could be in place for up to 30 days (on the assumption of a 'new' nest with recently laid eggs).
- 7.1.13. Where no active nests are identified, vegetation clearance will proceed immediately and will be completed within 24 hours of the inspection.

8. References

- Ref 8H-1 AECOM, 2020. Sunnica Energy Farm Preliminary Ecological Appraisal.
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- Ref 8H-3 HMSO (2000). Countryside and Rights of Way Act 2000. HMSO, London.
- Ref 8H-4 EC (2009). Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (codified version). EC, Brussels.
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- Ref 8H-6 Anon. (2006). The Natural Environment and Rural Communities Act. HMSO, London.
- Ref 8H-7 Anon. (2008). UK Biodiversity Action Plan.
- Ref 8H-8 JNCC, UK Post-2010 Biodiversity Framework, 2012, available at <http://jncc.defra.gov.uk/page-6189> (Accessed July 2020)
- Ref 8H-9 Cambridgeshire and Peterborough Biodiversity Group (2008). Priority Species and Habitats. Available from: <http://www.cpbiodiversity.org.uk/biodiversity-action-plans/priority-species> (Accessed July 2020).
- Ref 8H-10 SBIS (2015). Priority species and habitats. Available from: <http://www.suffolkbis.org.uk/biodiversity/speciesandhabitats#:~:text=The%20Suffolk%20Planning%20Biodiversity%20Action%20Plan%20%282012%29%20is,departments%20to%20meet%20their%20legal%20obligations%20towards%20biodiversity> (Accessed July 2020).
- Ref 8H-11 Eaton, M., Aebischer, N., Brown, A., Hearn, R., Lock, L., Musgrove A., Noble D., Stroud, D. and Gregory, R. (2015). Birds of Conservation Concern 4. The population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 108: 708-746
- Ref 8H-12 Bibby, C.J., Burgess, N.D., Hill, D.A. & Mustoe, S.H. (2000). *Bird Census Techniques*: 2nd edition. Academic Press, London.
- Ref 8H-13 Gilbert G., Gibbons D.W., and Evans J. (1998) *Bird Monitoring Methods: A manual of techniques for key UK species*. RSPB, Bedfordshire
- Ref 8H-14 RSPB pers. comms
- Ref 8H-15 Woodward, I., Aebischer, N., Burnell, D., Eaton, M., Frost, T., Hall, C., Stroud, D.A. & Noble, D. (2020). Population estimates of birds in Great Britain and the United Kingdom. *British Birds* 113: 69–104.
- Ref 8H-16 Balmer, D., Gillings, G., Caffrey, B., Swann, B., Downie, I. and Fuller, R., 2013. *Bird Atlas 2007-11: The Breeding and Wintering Birds of Britain and Ireland*. BTO.
- Ref 8H-17 Hollings M. and the Rare Breeding Birds Panel (2019) Rare breeding birds in the United Kingdom in 2017. *British Birds* **112**, 706-758
- Ref 8H-18 Bacon, L., Cooper, A. and Venables, H., 2013. *Cambridgeshire Bird Atlas 2007 – 2011*. Cambridgeshire Bird Club.
- Ref 8H-19 Regnault, M., 2014. *Suffolk Bird Atlas 2007 – 2011*. Suffolk.
- Ref 8H-20 Fuller, R.J. (1980). A Method for Assessing the Ornithological Interest of Sites for Conservation. *Biological Conservation* **17**, 229-239
- Ref 8H-21 Cambridgeshire and Peterborough County Wildlife Sites Panel., 2014. *Cambridgeshire and Peterborough County Wildlife Sites Selection Guidelines*. The Wildlife Trust.
- Ref 8H-22 CIEEM, 2018. *Guidelines for Ecological Impact Assessment in the United Kingdom: Terrestrial, Freshwater, Coastal and Marine*.
- Ref 8H-23 Ruddock, M. and Whitfield, D.P. (2007) *A Review of Disturbance Distances in Selected Bird Species*. Report from Natural Research (Projects) Ltd to Scottish Natural Heritage

Sub-Appendix A Figures

Figure 8H-1 DCO Site boundary and location

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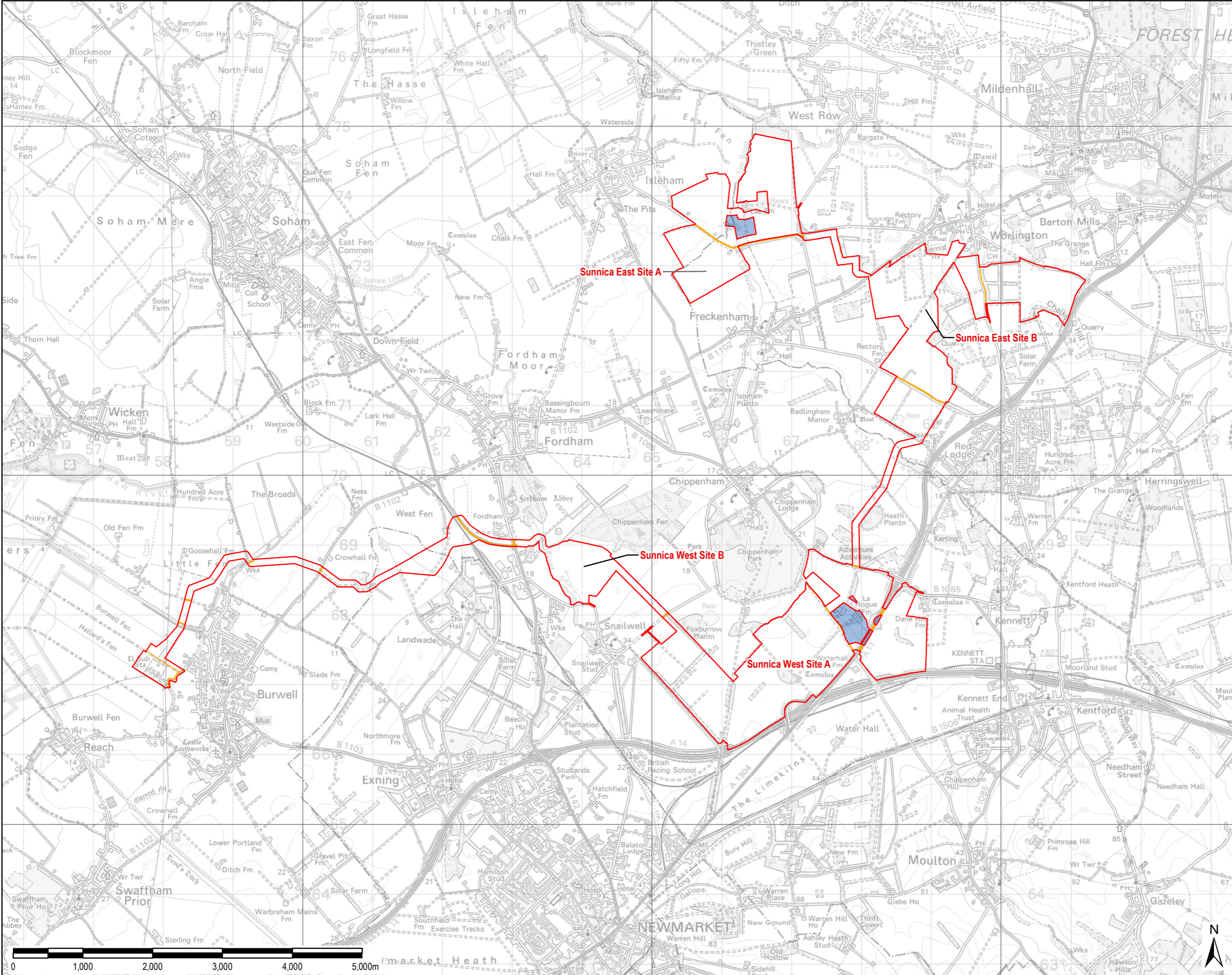
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THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

- LEGEND**
- Scheme Boundary
 - Not Included in the DCO Site
 - Public Highway within Scheme

NOTE:
Public highways run through the Sunnica East Site, which are not part of the site boundary. These have been digitised based on the 1:1250 scale OS Mastermap.

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Purpose of Issue
PEIR

Client
SUNNICA LTD



Drawing Title
**FIGURE 2-1
SCHEME BOUNDARY**

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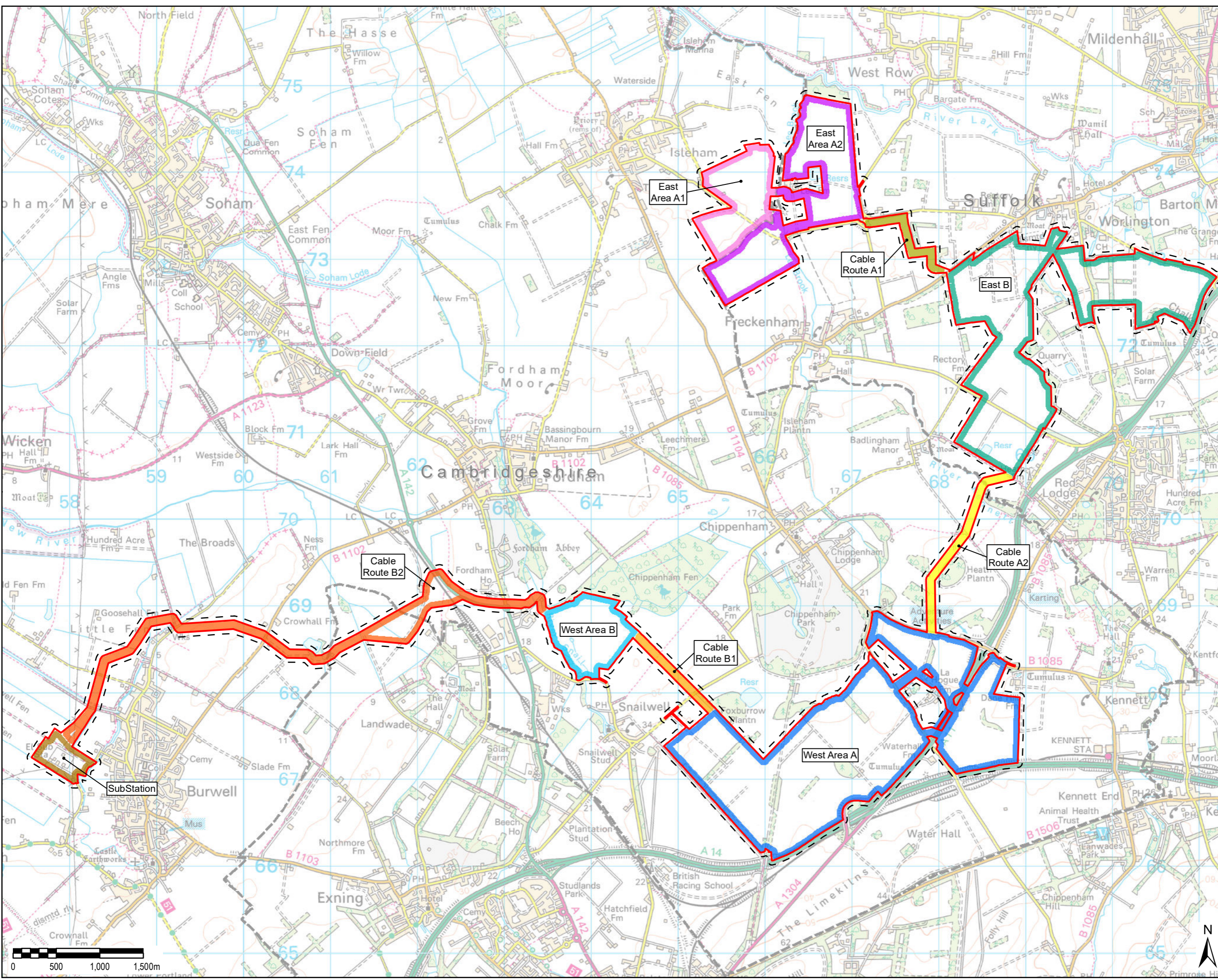
Drawing Number 60589004_PEIR_SDS_001	Rev 0
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Figure 8H-2 Survey area used for breeding birds

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- LEGEND**
- DCO Boundary
 - 50m survey buffer
 - Survey compartments
 - Sunnica East Area
 - Sunnica East Area
 - Sunnica East B
 - Sunnica West Area
 - Sunnica West Area B
 - Cable Route A1
 - Cable Route A2
 - Cable Route B1
 - Cable Route B2
 - Sub Station



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SURVEY AREA USED FOR BREEDING BIRDS

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FIGURE 8.2

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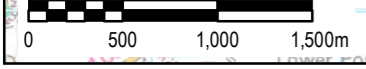


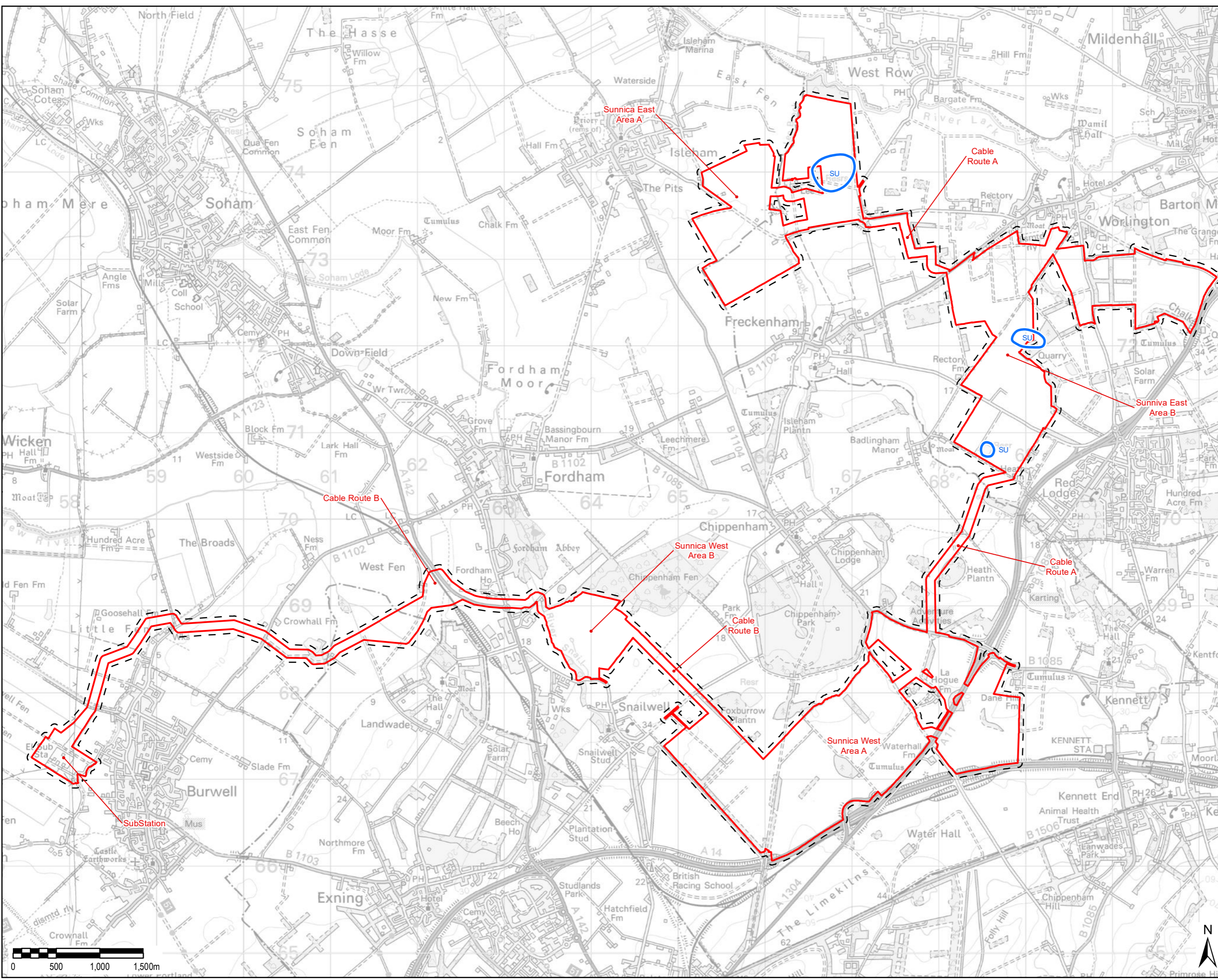
Figure 8H-3 Stone-curlew survey areas

Figure 8H-4 Confidential Figure - redacted

Figure 8H-5 Breeding Bird Territories

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 - Breeding bird territory
 - Shelduck (SU), 3 terr.



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 SHELDUCK
 TADORNA TADORNA**

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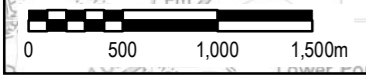
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FIGURE 8.5a

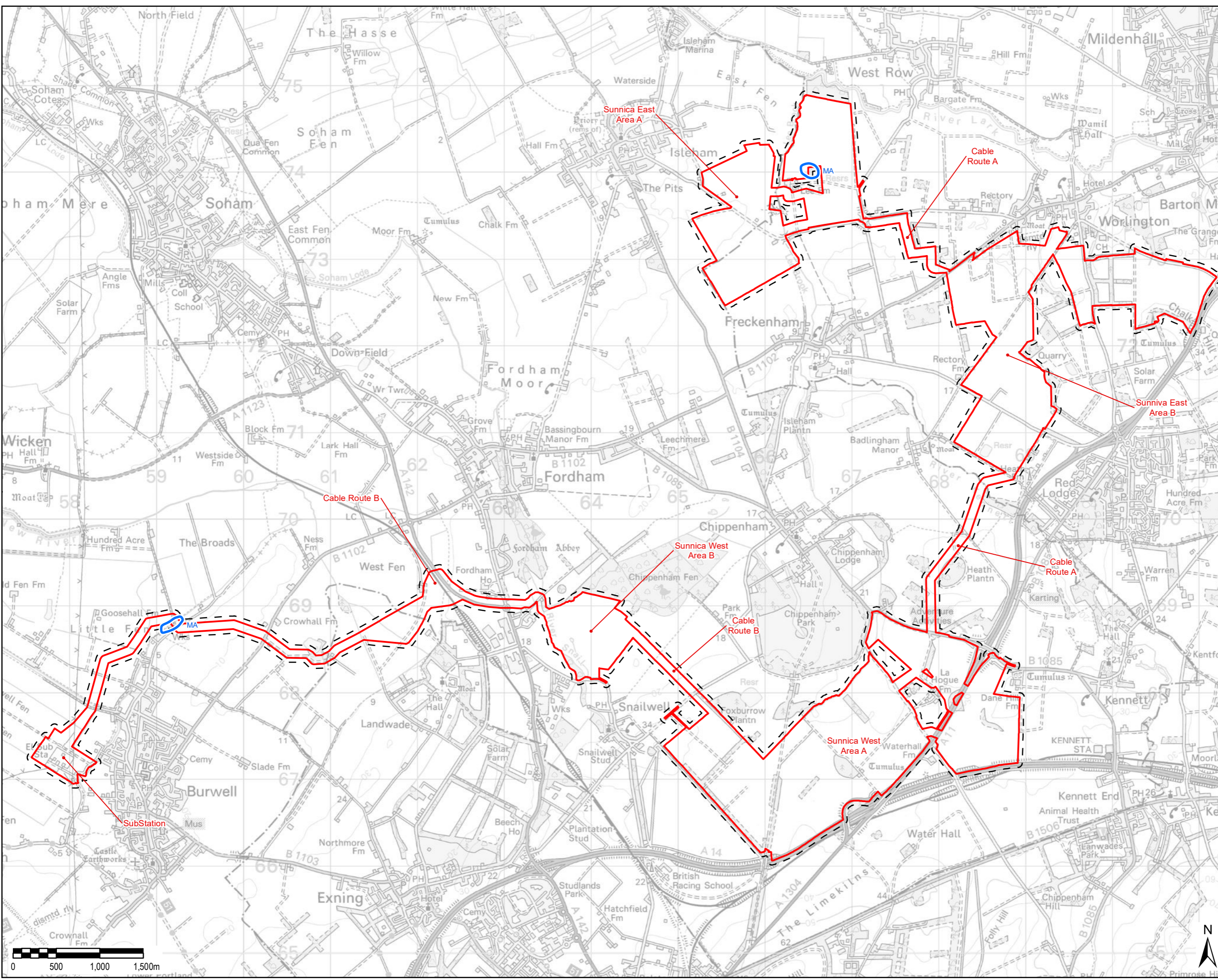
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 - Breeding bird territory
 - Mallard (MA), 2 terr.



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 MALLARD
 ANAS PLATYRHYNCHOS**

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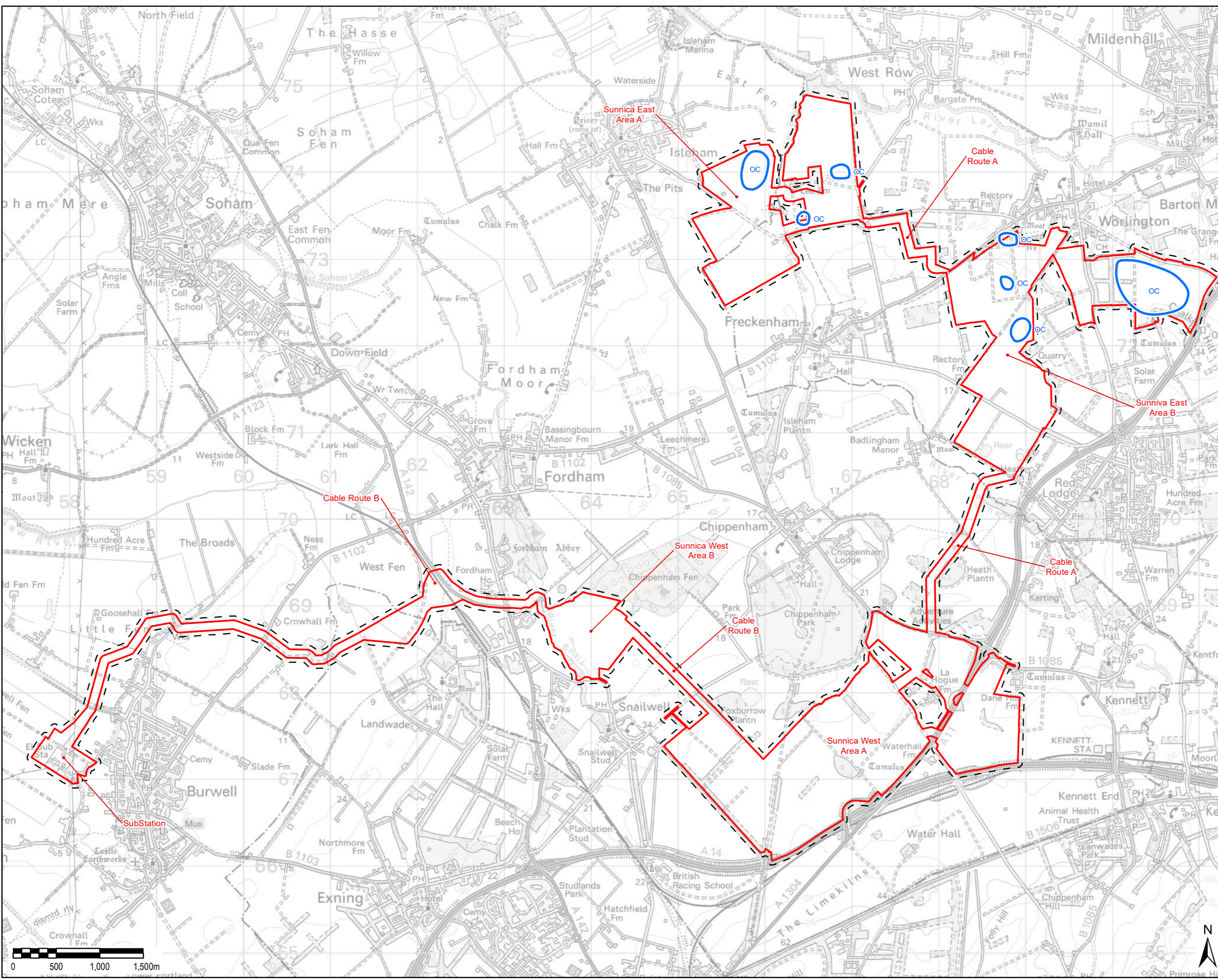
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 - Oystercatcher (OC), 7 terr.



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**BREEDING BIRD TERRITORIES
 OYSTERCATCHER
 HAEMATOPUS OSTRALEGUS**

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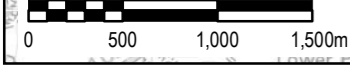
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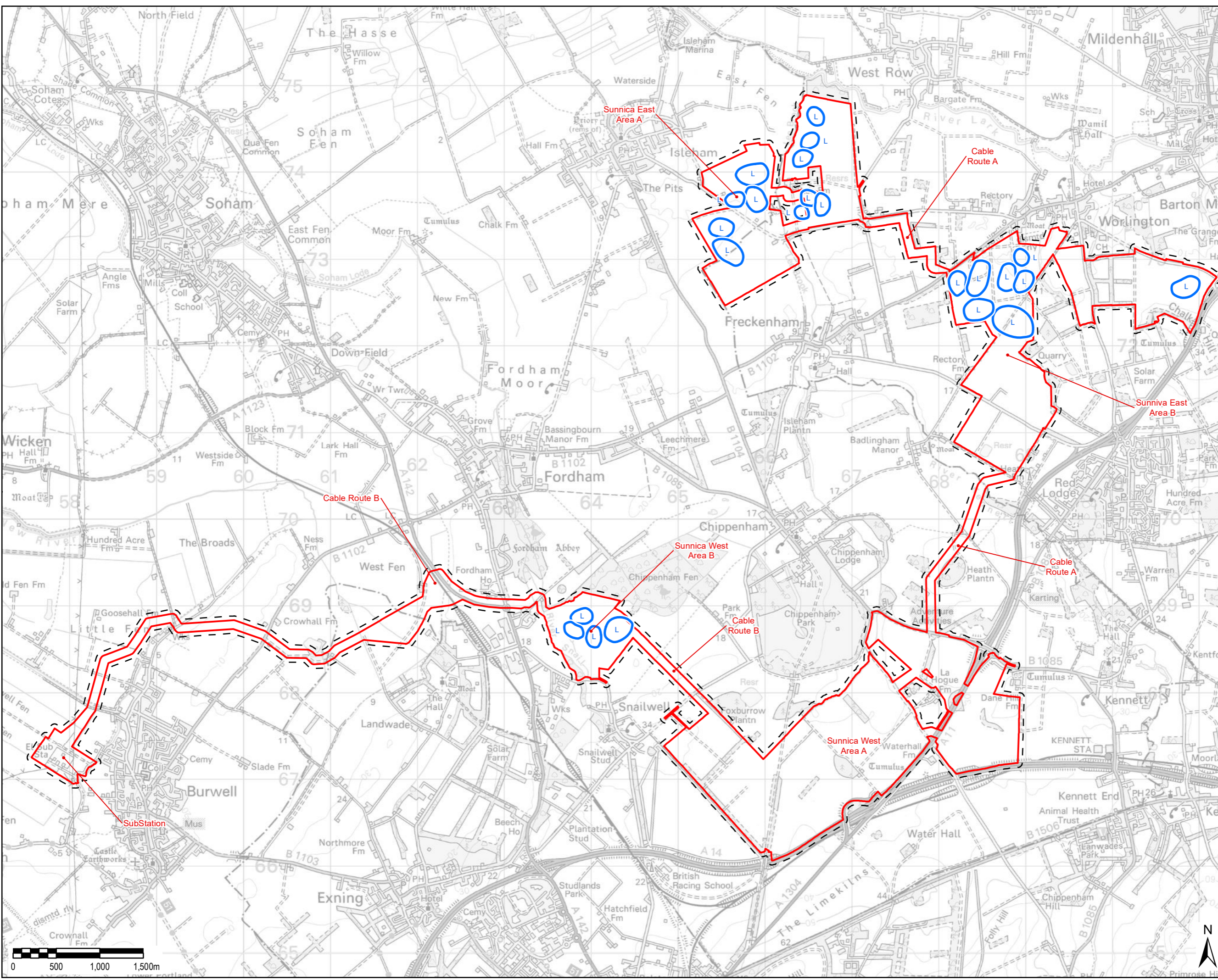
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 - 50m survey buffer
 - Breeding bird territory
 - Lapwing (L), 23 terr.



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**BREEDING BIRD TERRITORIES
 LAPWING
 VANELLUS VANELLUS**

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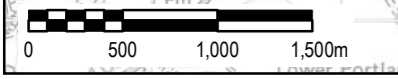
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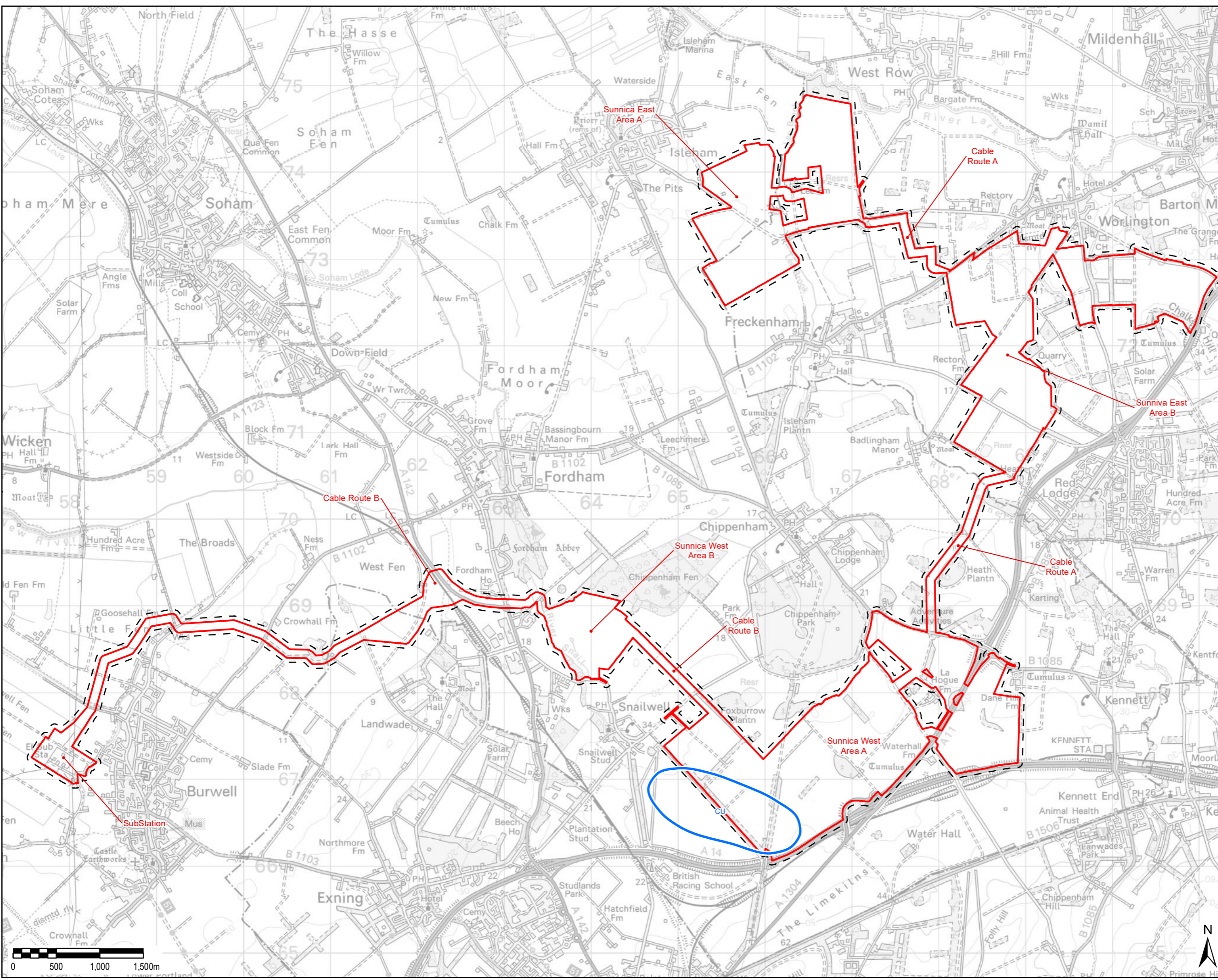
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 - Breeding bird territory
 - Curlew (CU), 1 terr.



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**BREEDING BIRD TERRITORIES
 CURLEW
 NUMENIUS ARQUATA**

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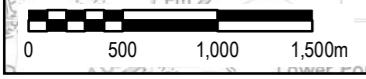
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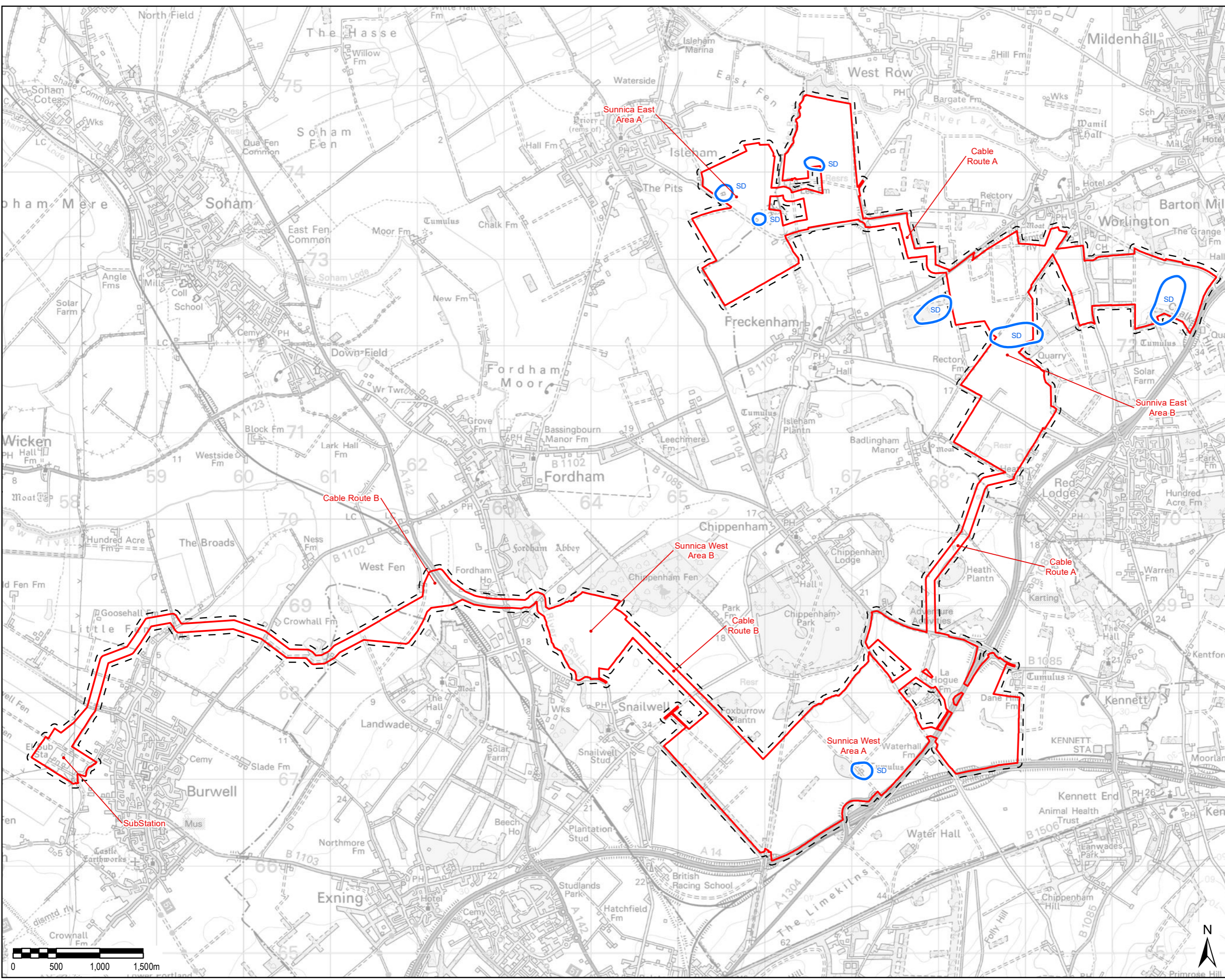
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- Breeding bird territory
- Stock Dove (SD), 7



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**BREEDING BIRD TERRITORIES
 STOCK DOVE
 COLUMBA OENAS**

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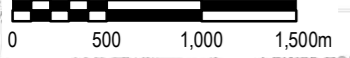
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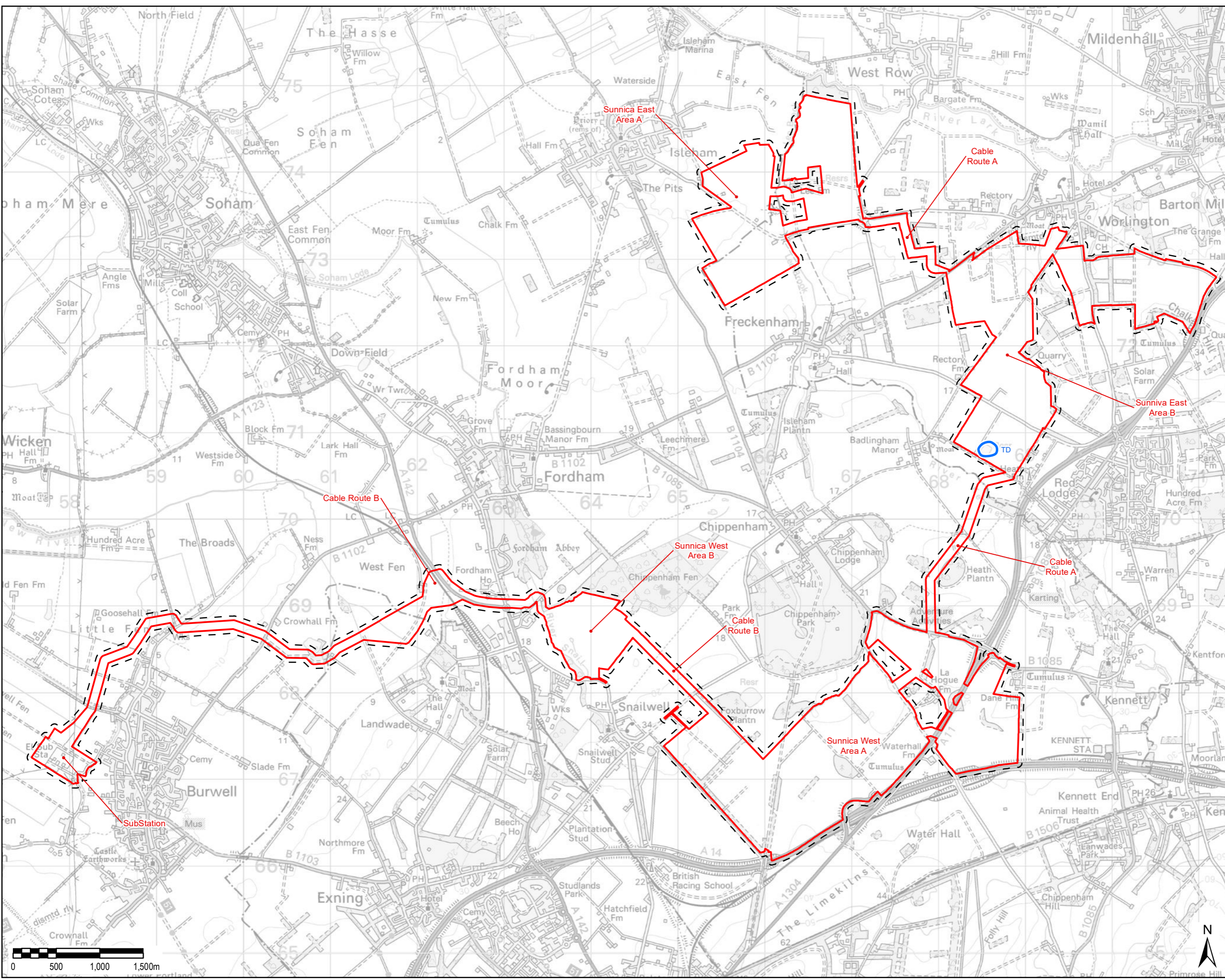
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- Breeding bird territory
- Turtle Dove (TD), 1 terr.



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 TURTLE DOVE
 STREPTOPELIA TURTUR**

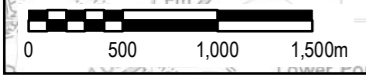
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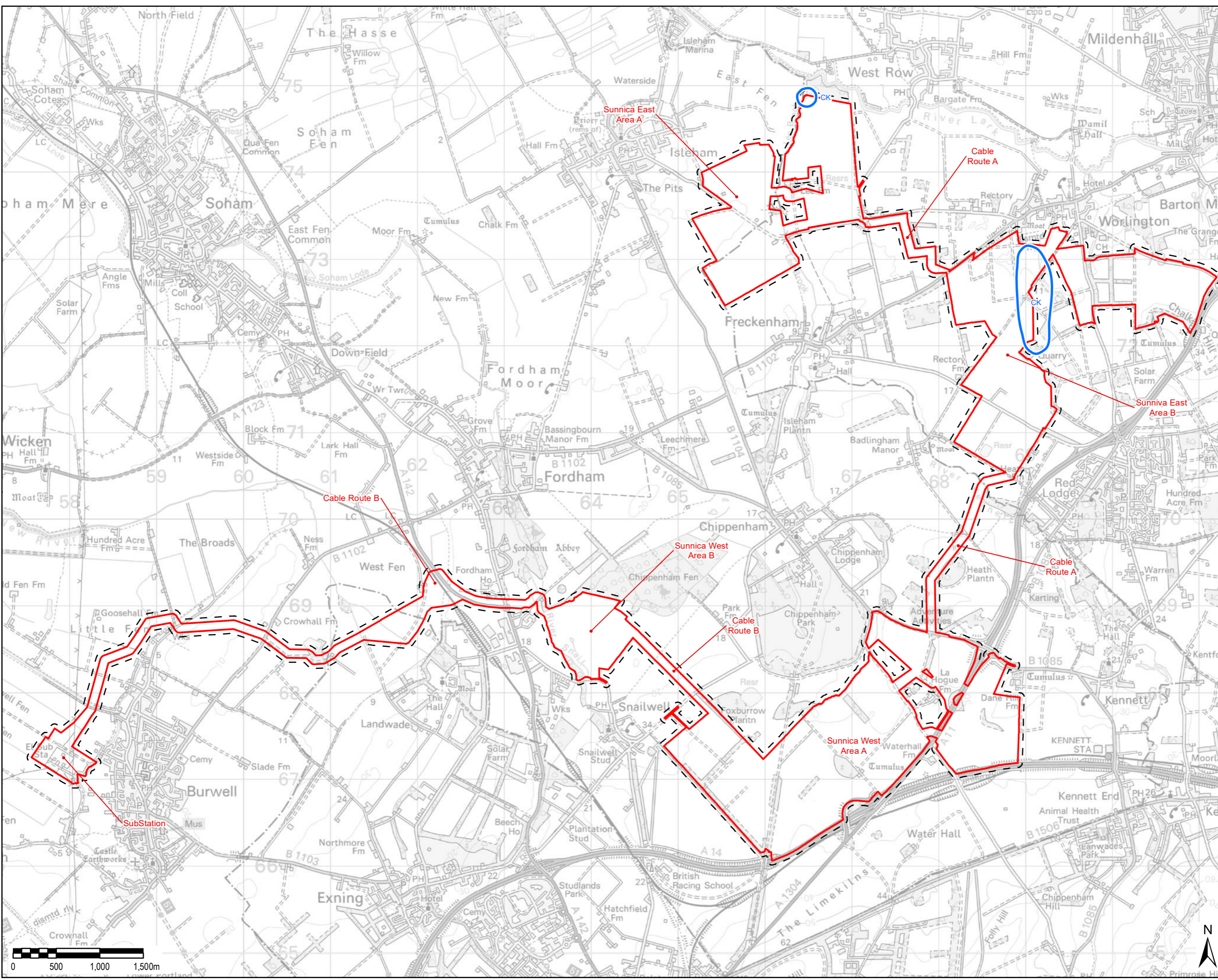
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- Cuckoo (CK), 2 terr.



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**BREEDING BIRD TERRITORIES
 CUCKOO
 CUCULUS CANORUS**

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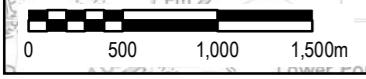
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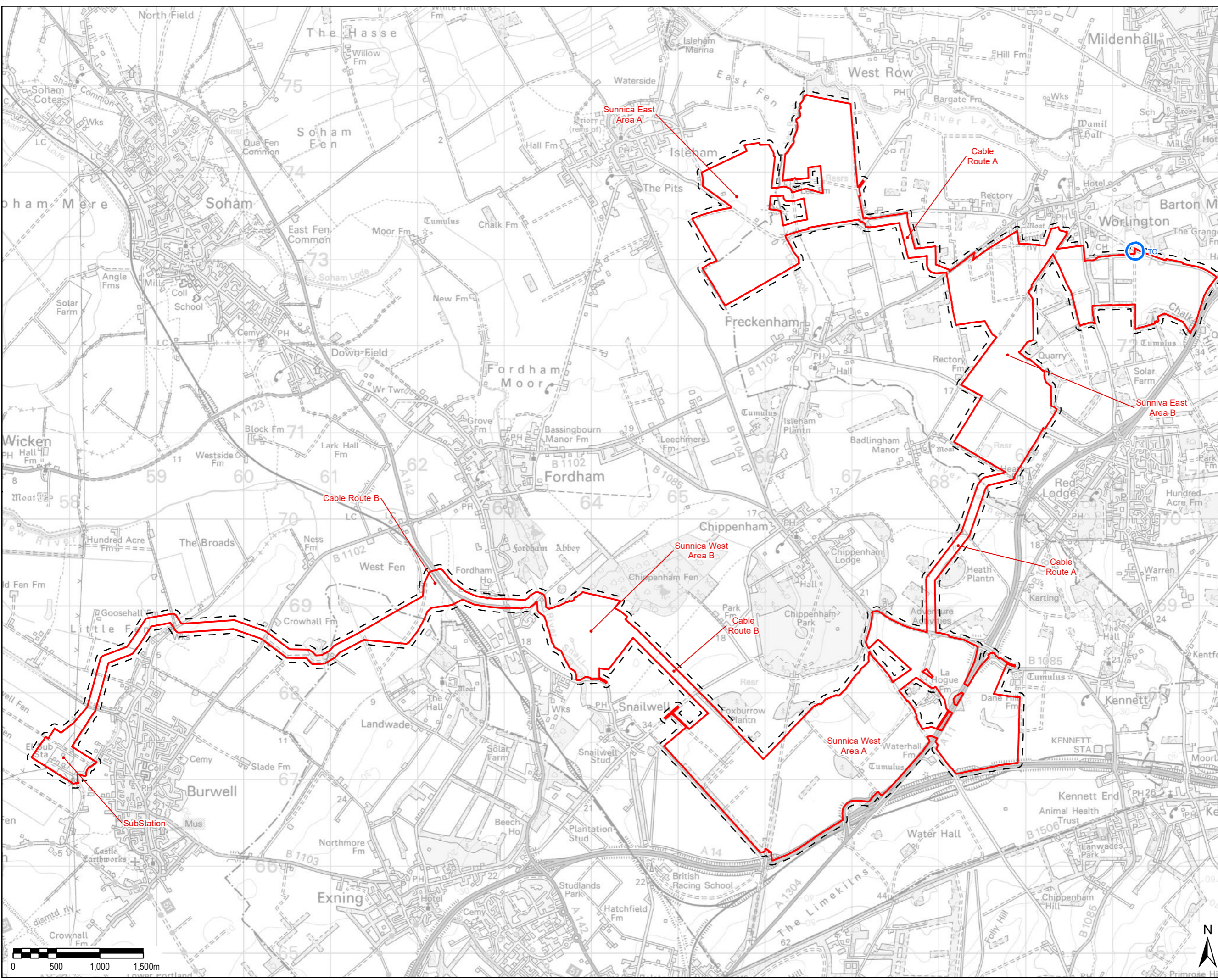
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 - 50m survey buffer
 - Breeding bird territory
 - Tawny Owl (TO), 1 terr.



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**BREEDING BIRD TERRITORIES
 TAWNY OWL
 STRIX ALUCO**

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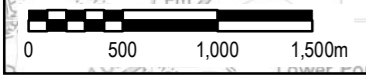
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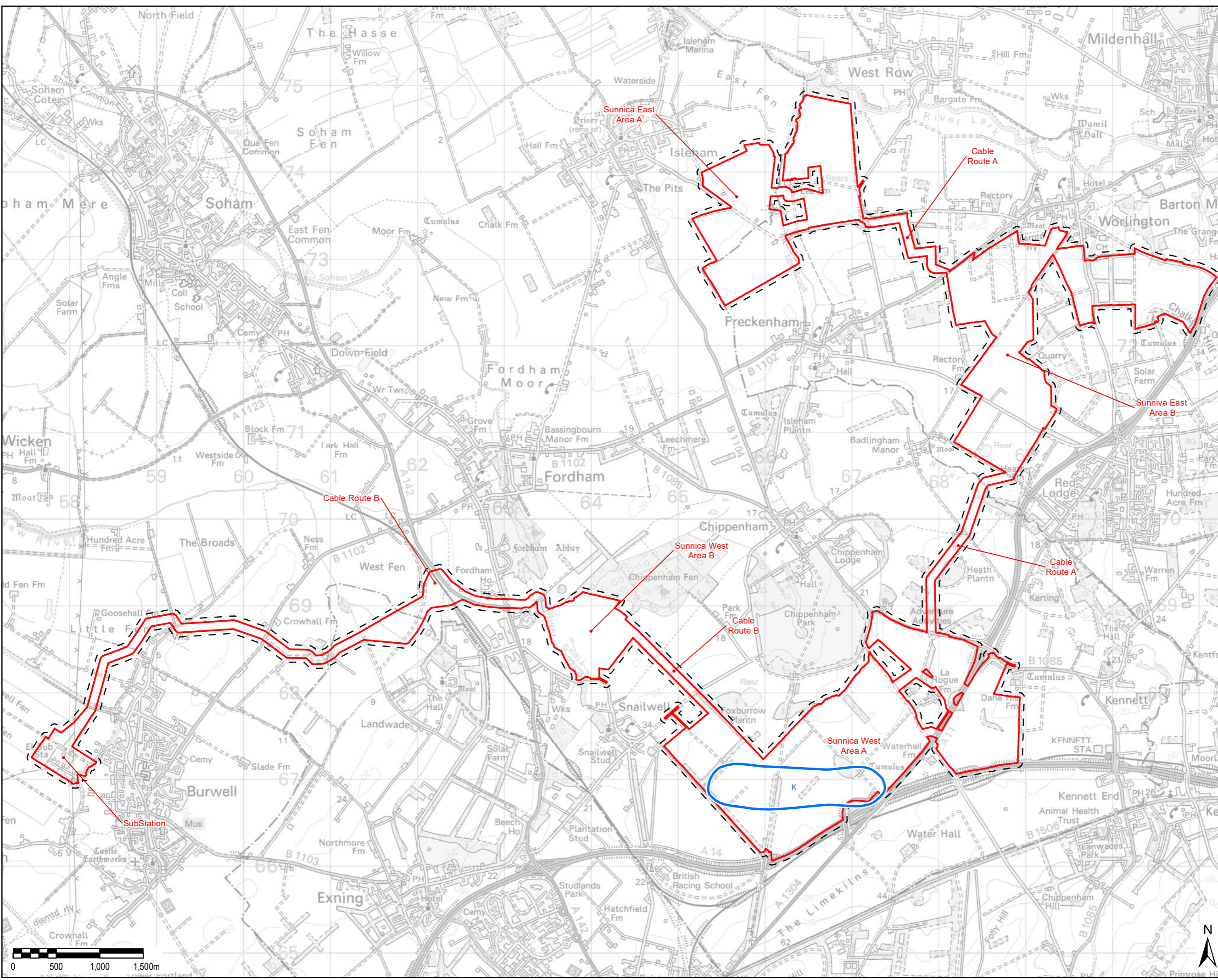
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LEGEND

- DCO Boundary
- 50m survey buffer
- Breeding bird territory
- Kestrel (K), 1 terr.



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 KESTREL
 FALCO TINNUNCULUS**

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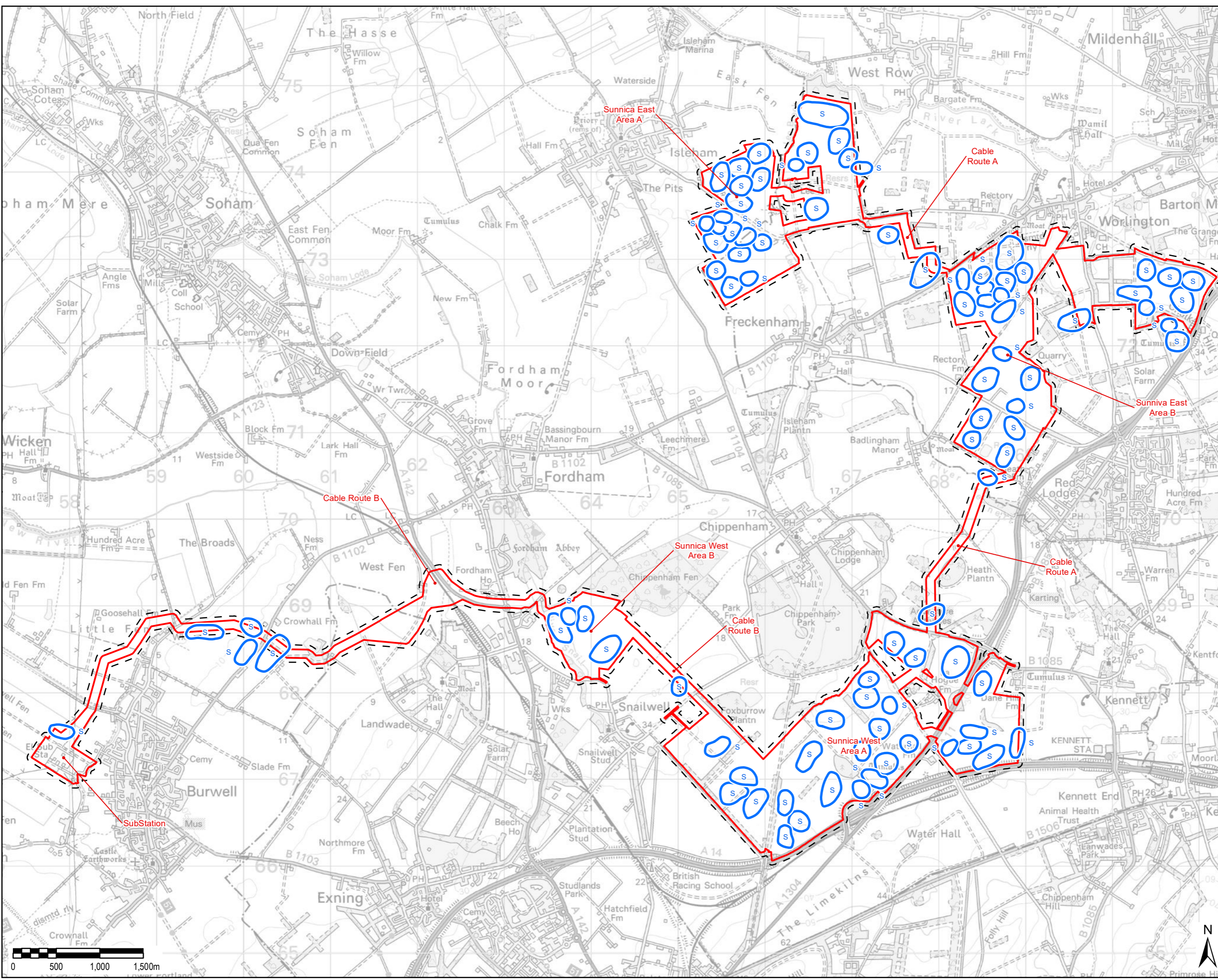
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 - Breeding bird territory
 - Skylark (S), 93 terr.



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 SKYLARK
 ALAUDA ARVENSIS**

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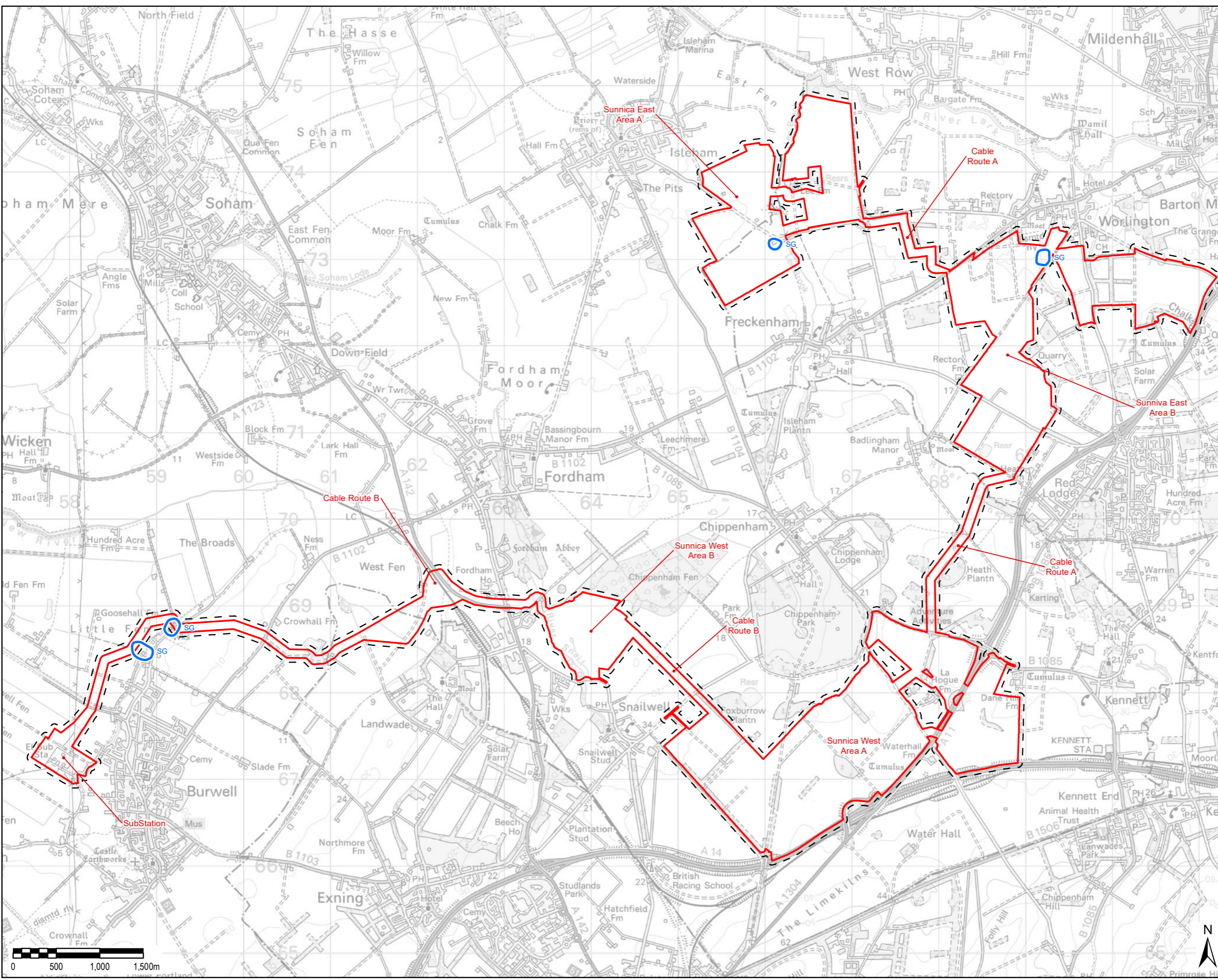
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 - 50m survey buffer
 - Breeding bird territory
 - Starling (SG), 4 terr.



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**BREEDING BIRD TERRITORIES
 STARLING
 STURNUS VULGARIS**

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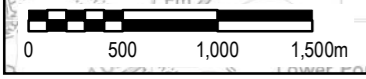
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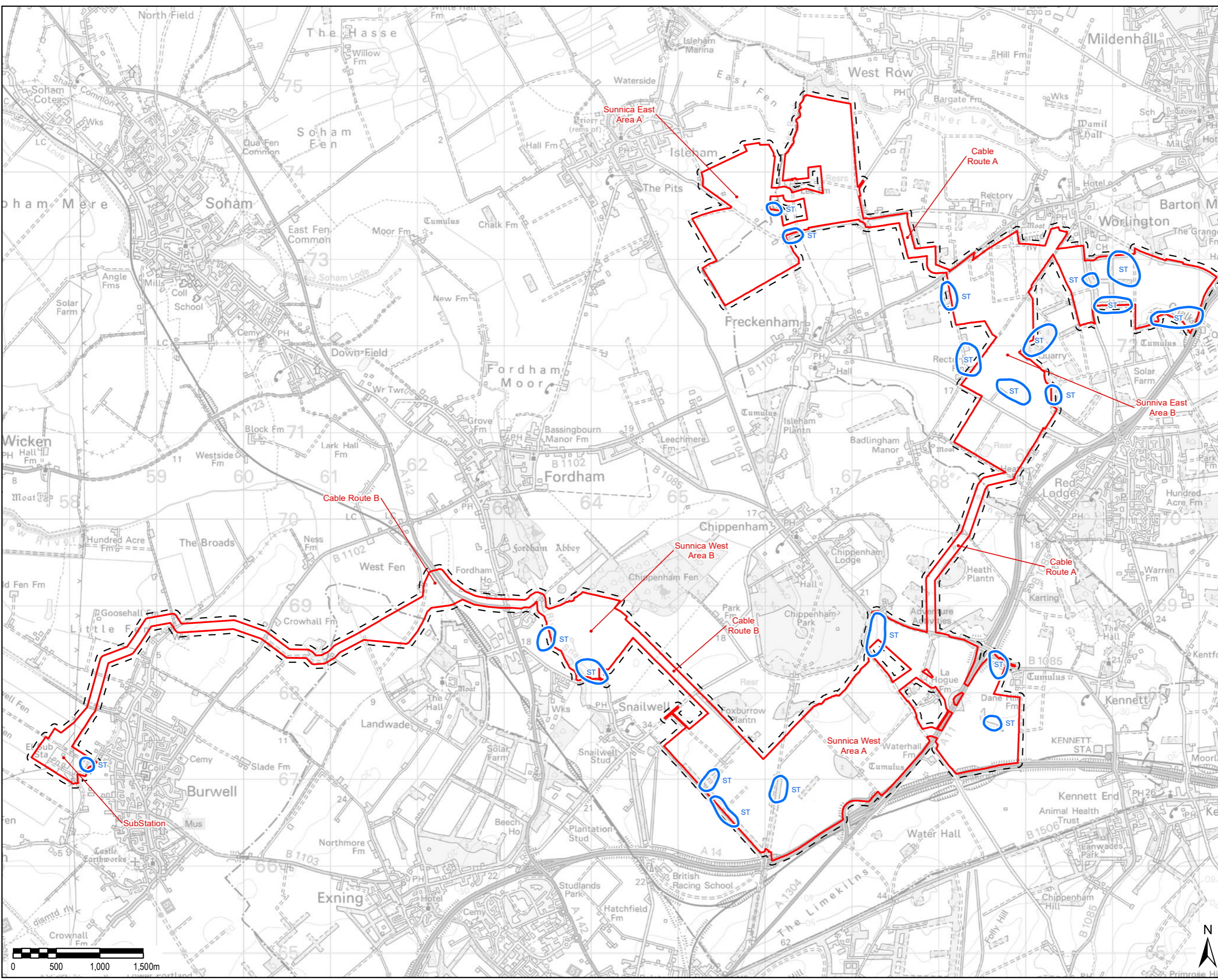
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- LEGEND**
- DCO Boundary
 - 50m survey buffer
 - Breeding bird territory
 - Song Thrush (ST), 20 terr.



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**BREEDING BIRD TERRITORIES
 SONG THRUSH
 TURDUS PHILOMELUS**

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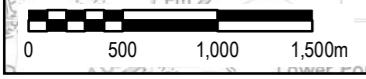
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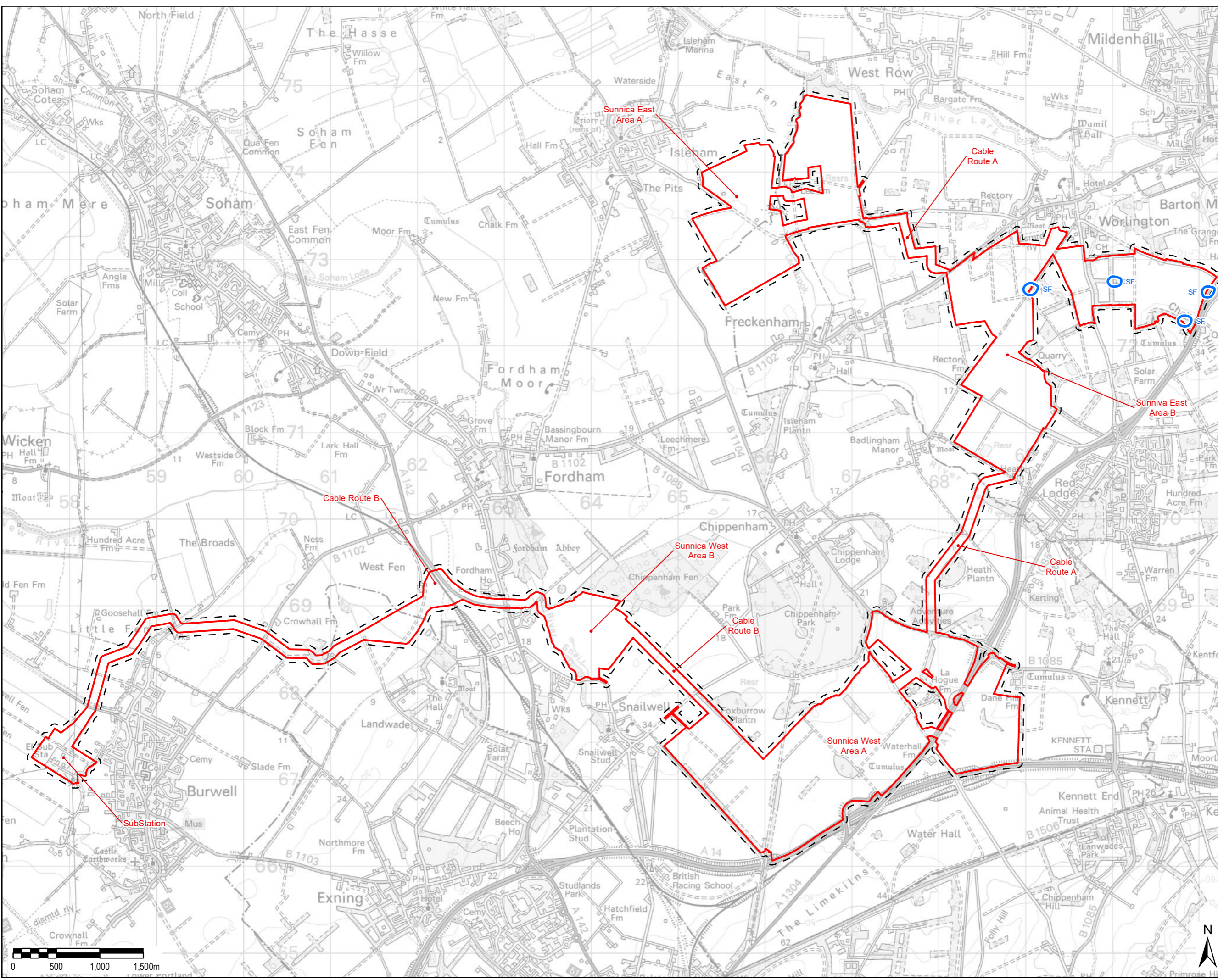
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 - 50m survey buffer
 - Breeding bird territory
 - Spotted Flycatcher (SF), 4 terr.



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Drawing Title
**BREEDING BIRD TERRITORIES
 SPOTTED FLYCATCHER
 MUSCICAPA STRIATA**

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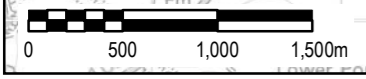
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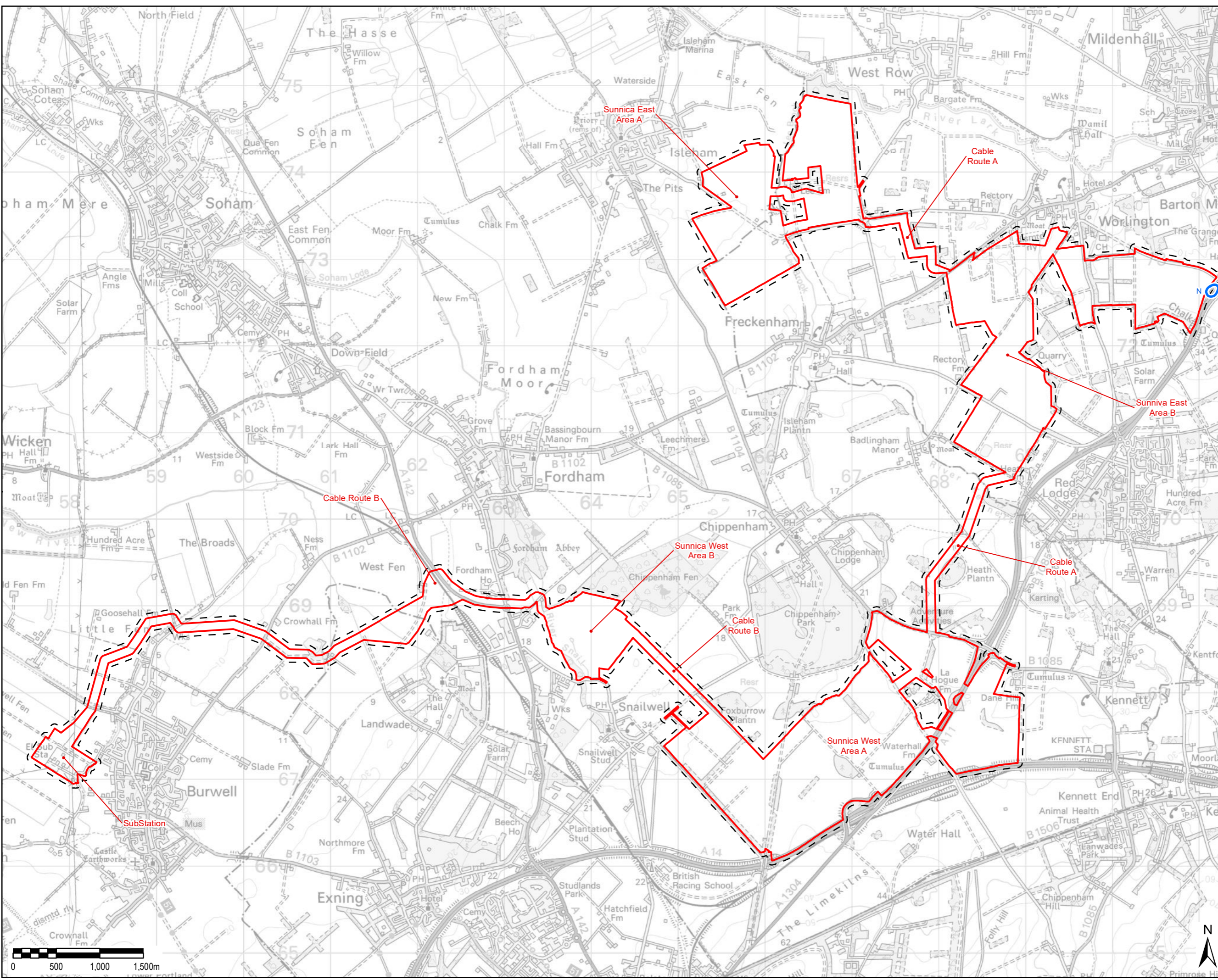
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- DCO Boundary
 - 50m survey buffer
 - Breeding bird territory
 - Nightingale (N), 1 terr.



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Drawing Title
**BREEDING BIRD TERRITORIES
 NIGHTINGALE
 LUSCINIA MEGARHYNCHOS**

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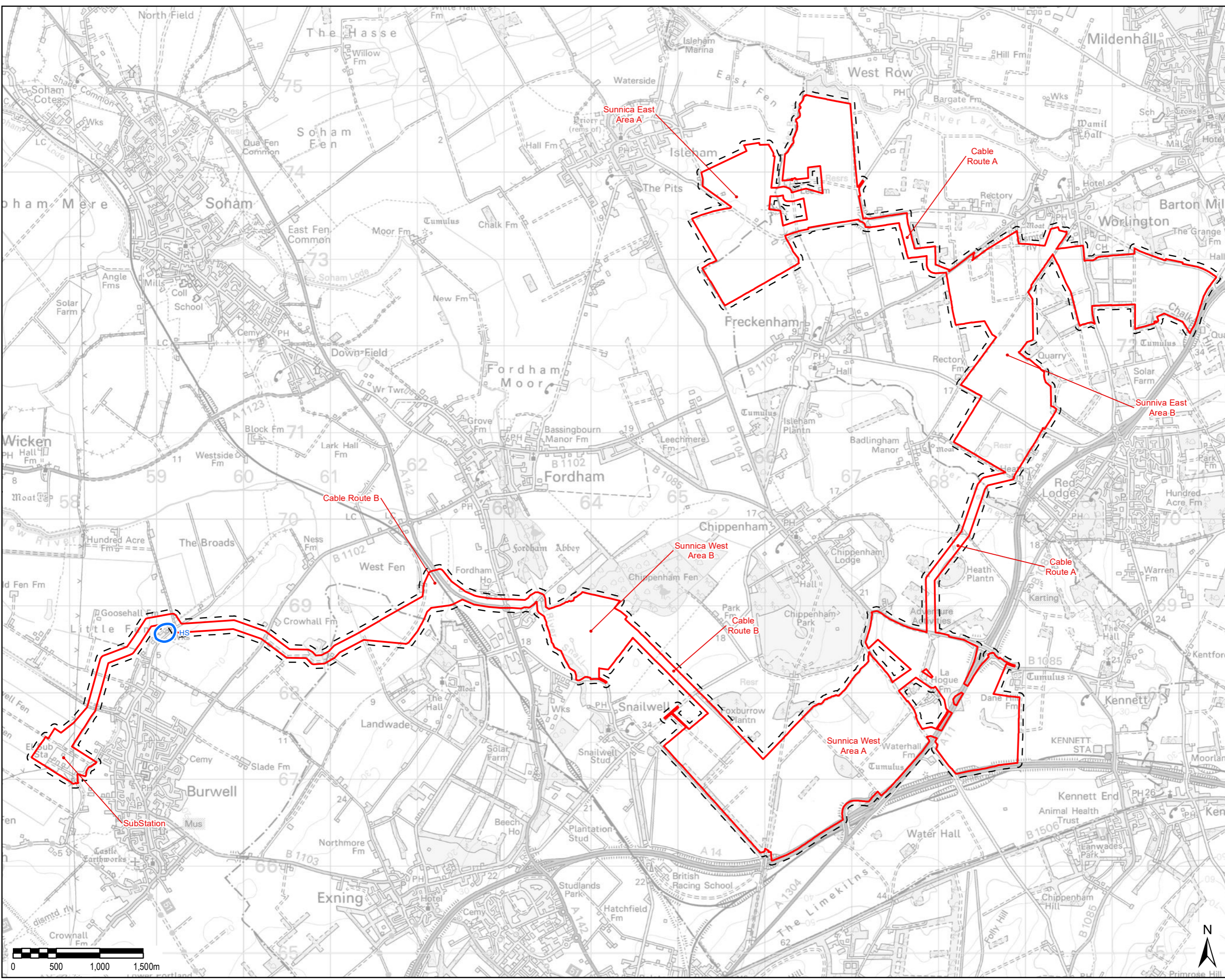
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FIGURE 8.5t

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- DCO Boundary
 - 50m survey buffer
 - Breeding bird territory
 - House Sparrow (HS), 1 terr.



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 HOUSE SPARROW
 PASSER DOMESTICUS**

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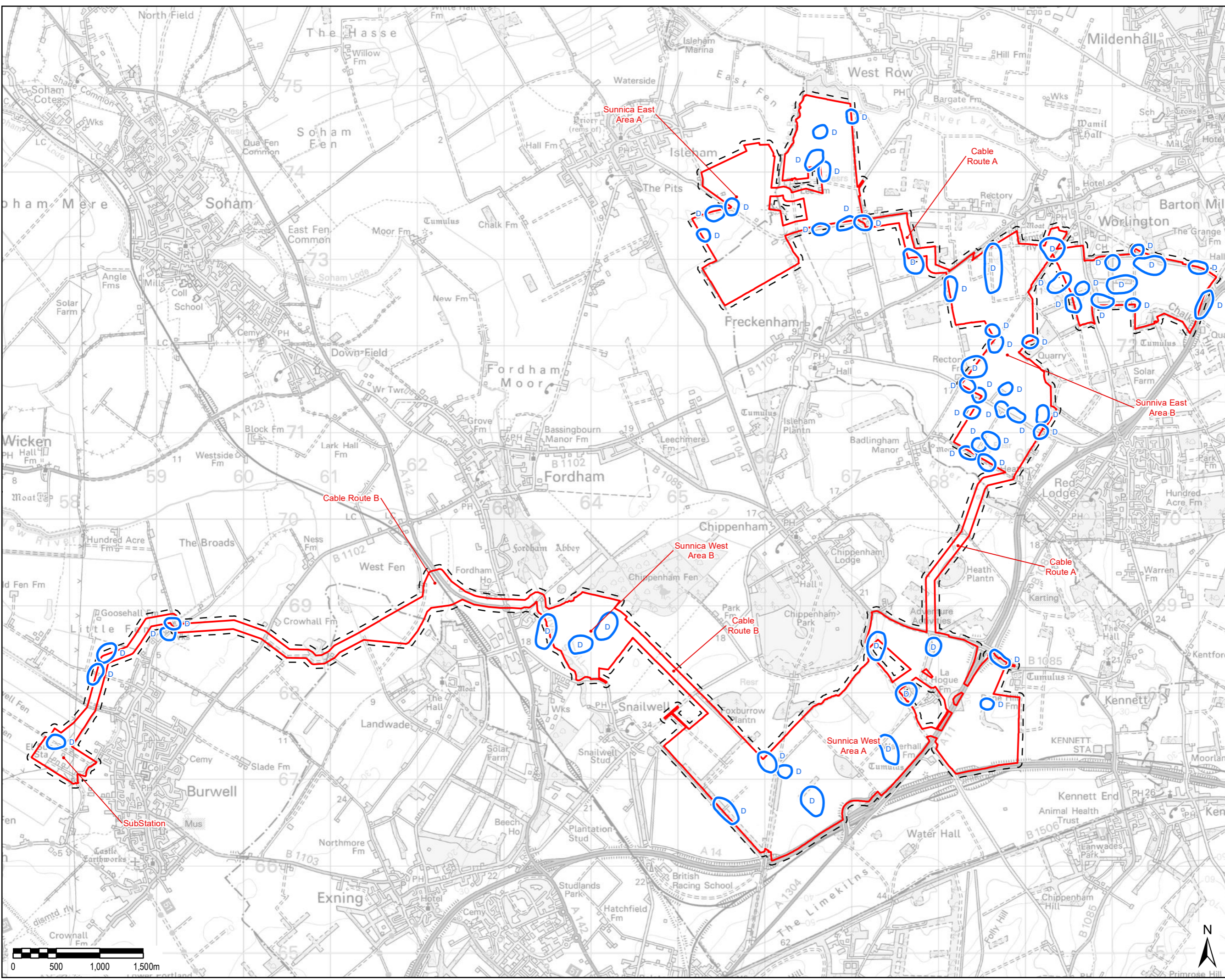


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- DCO Boundary
- 50m survey buffer
- Breeding bird territory
- Dunnock (D), 59 terr.



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Drawing Title
**BREEDING BIRD TERRITORIES
 DUNNOCK
 PRUNELLA MODULARIS**

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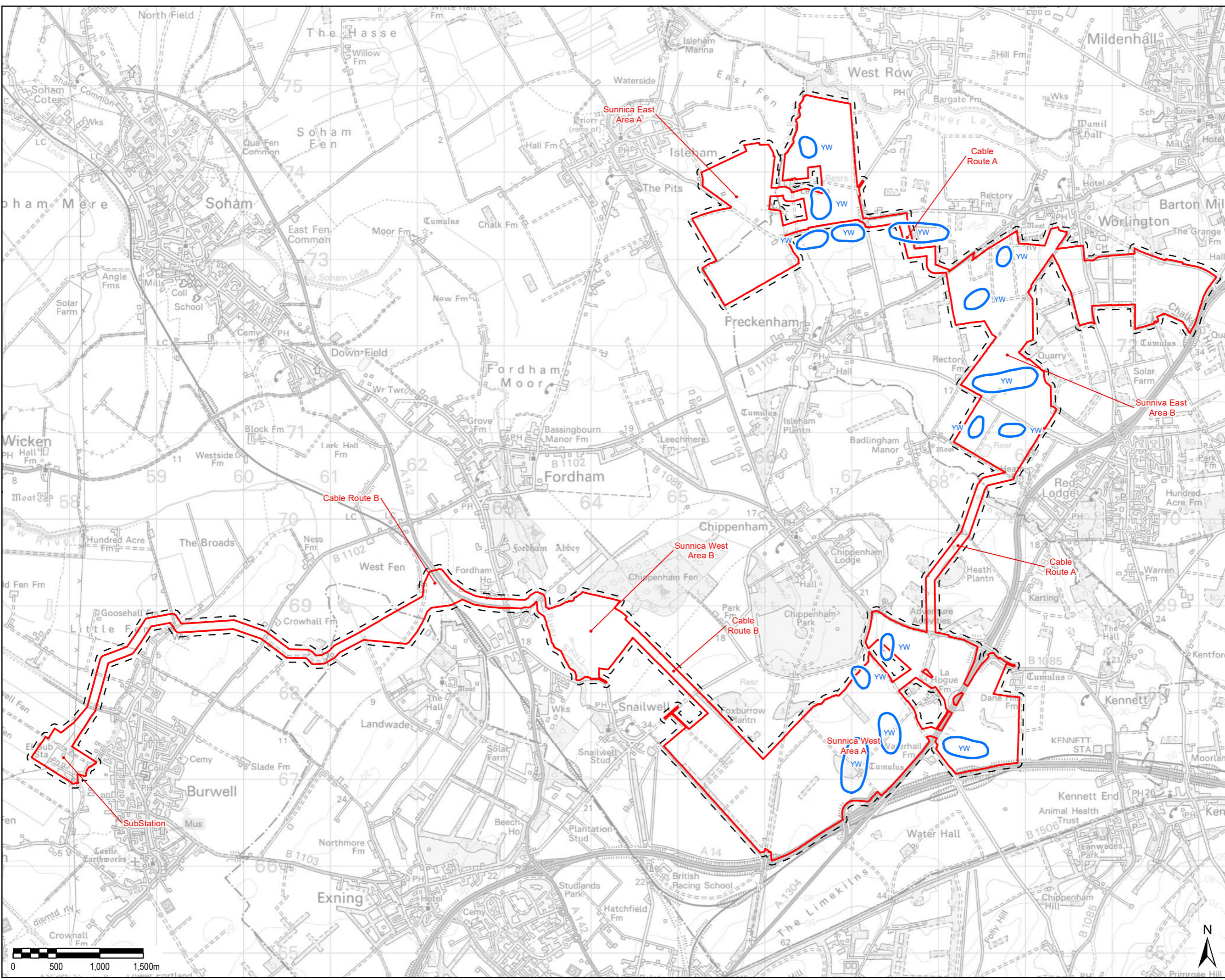


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- DCO Boundary
- 50m survey
- Breeding bird
- Yellow Wagtail (YW), 15



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Drawing Title
**BREEDING BIRD TERRITORIES
 YELLOW WAGTAIL
 MOTACILLA FLAVA**

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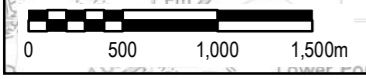
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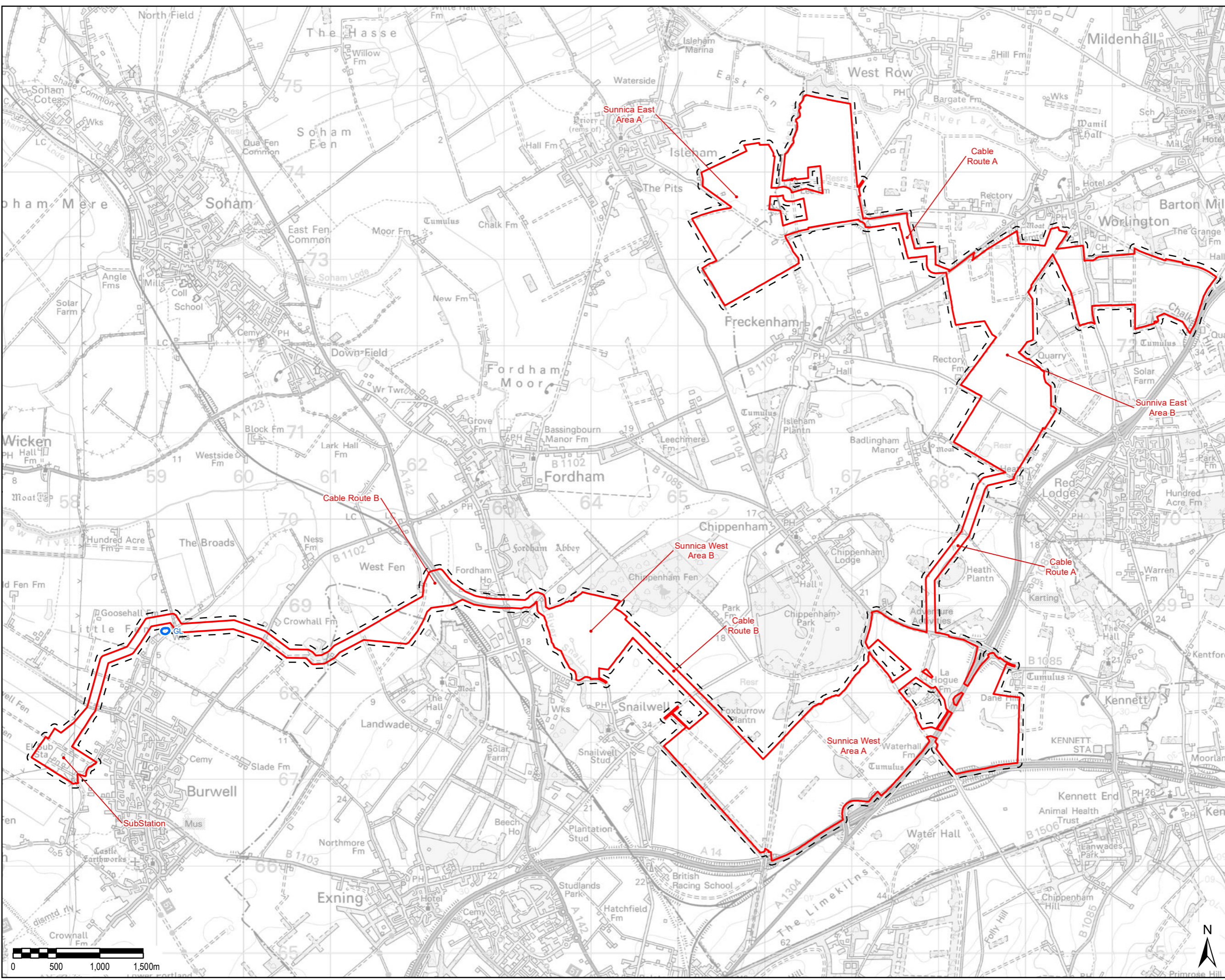
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- LEGEND**
- DCO Boundary
 - 50m survey buffer
 - Breeding bird territory
 - Grey Wagtail (GL), 1 terr.



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Drawing Title
**BREEDING BIRD TERRITORIES
 GREY WAGTAIL
 MOTACILLA CINEREA**

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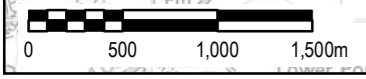
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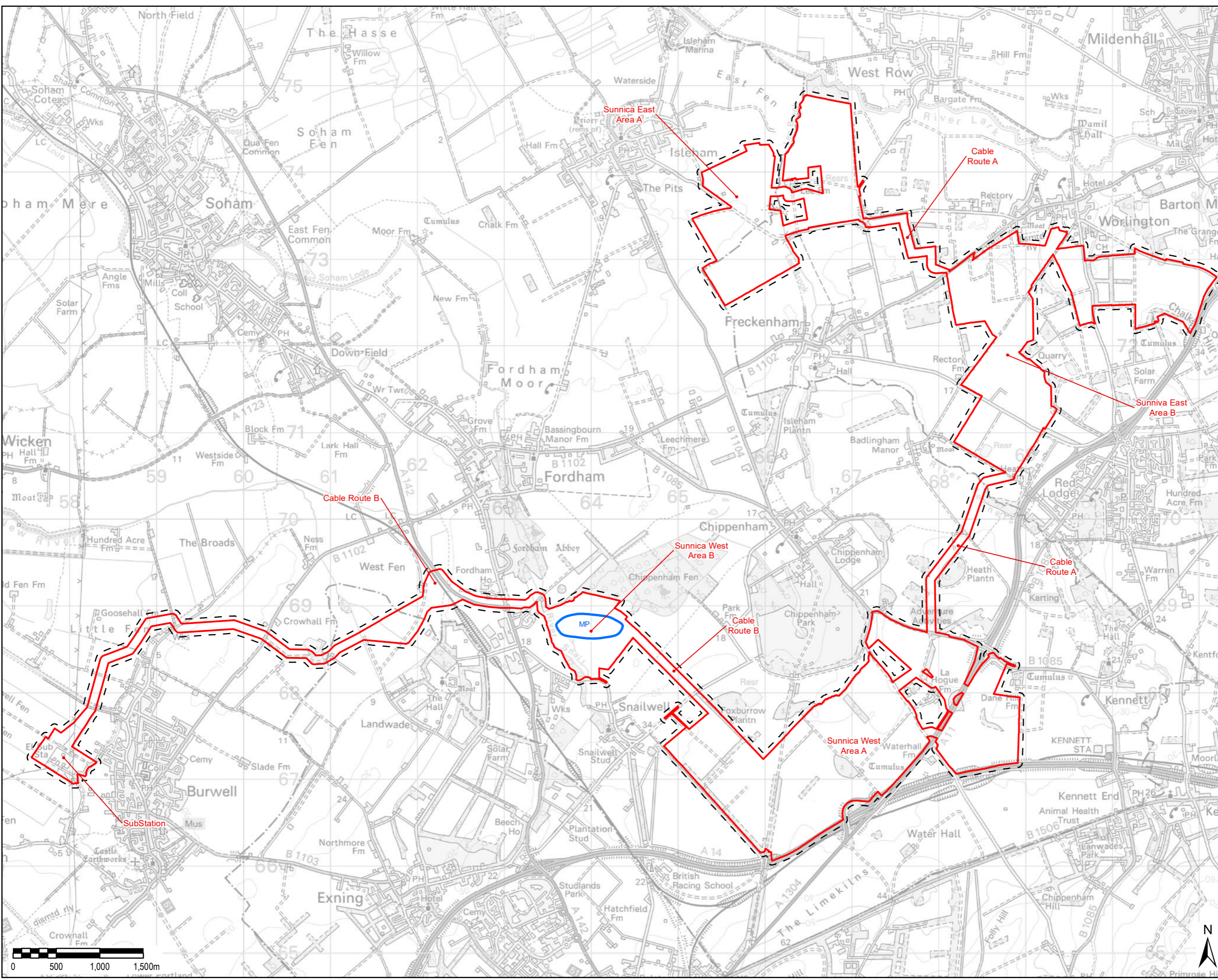
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LEGEND

- DCO Boundary
- 50m survey buffer
- Breeding bird territory
- Meadow Pipit (MP), 1 terr.



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Project Title



Drawing Title
**BREEDING BIRD TERRITORIES
 MEADOW PIPIT
 ANTHUS PRATENSIS**

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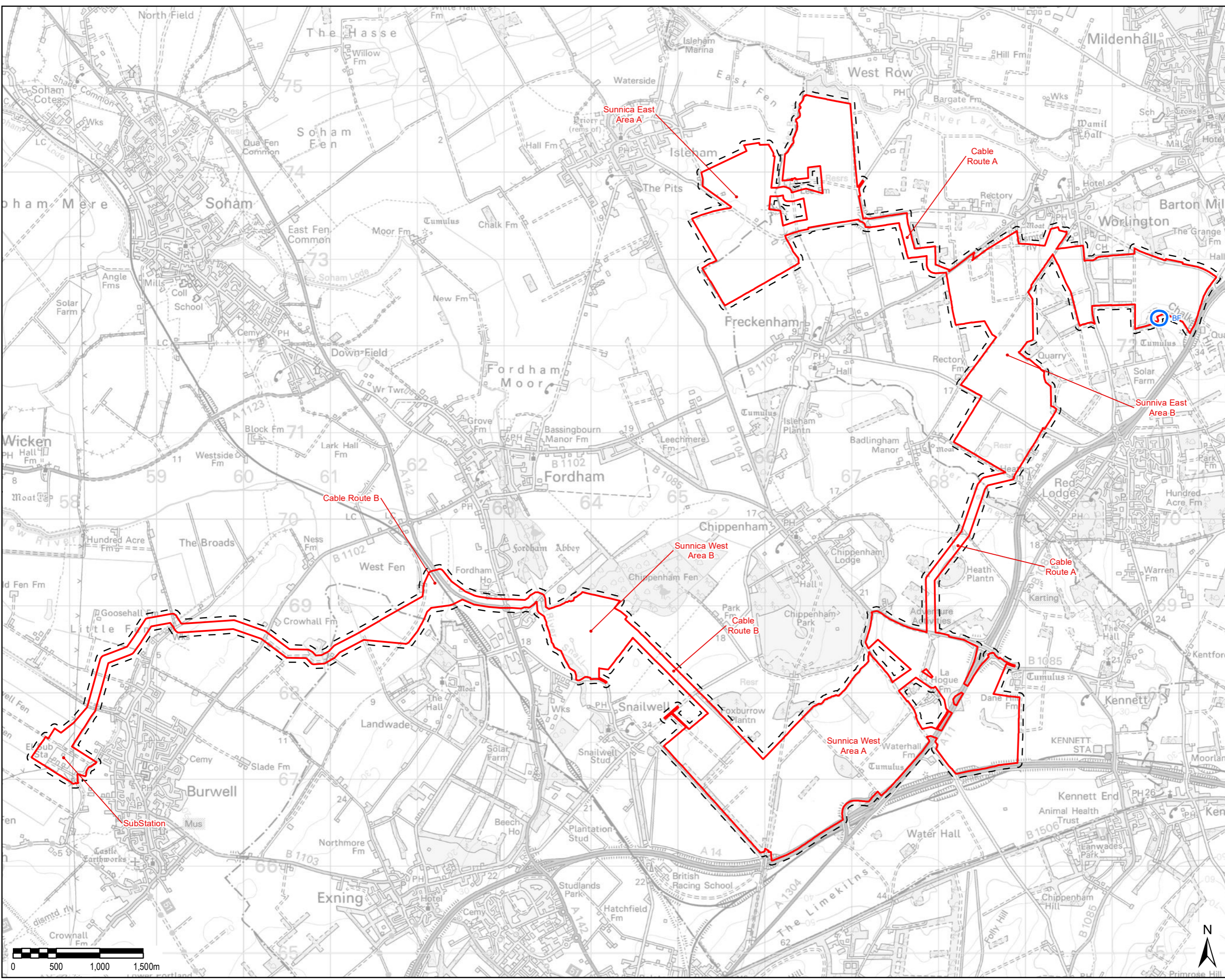
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- DCO Boundary
- 50m survey buffer
- Breeding bird
- Bullfinch (BF), 1



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Drawing Title
**BREEDING BIRD TERRITORIES
 BULLFINCH
 PYRRHULA PYRRHULA**

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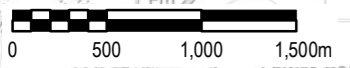
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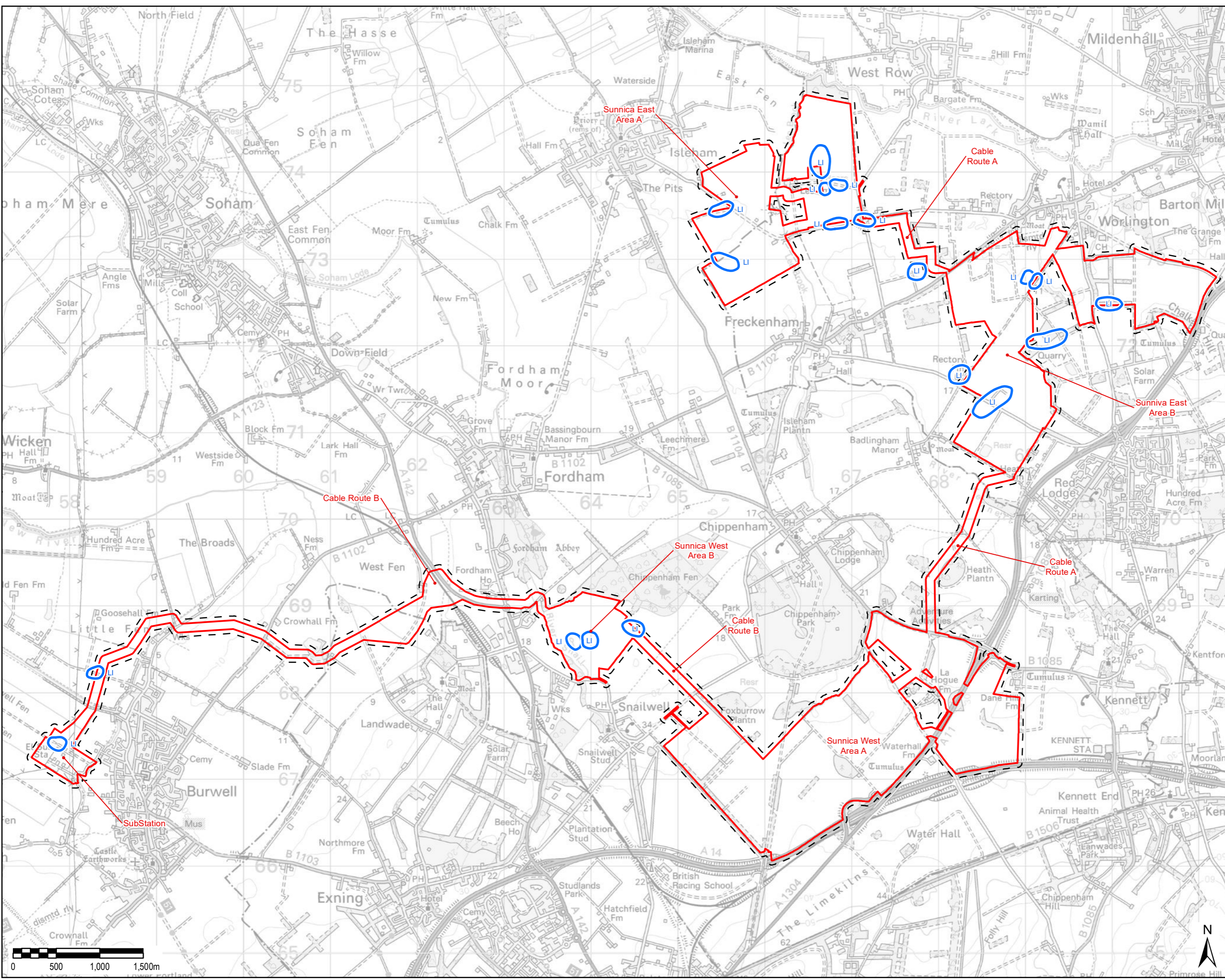
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- DCO Boundary
- 50m survey
- Breeding bird
- Linnet (LI), 19



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**BREEDING BIRD TERRITORIES
 LINNET
 LINARIA CANNABINA**

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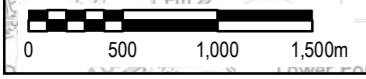
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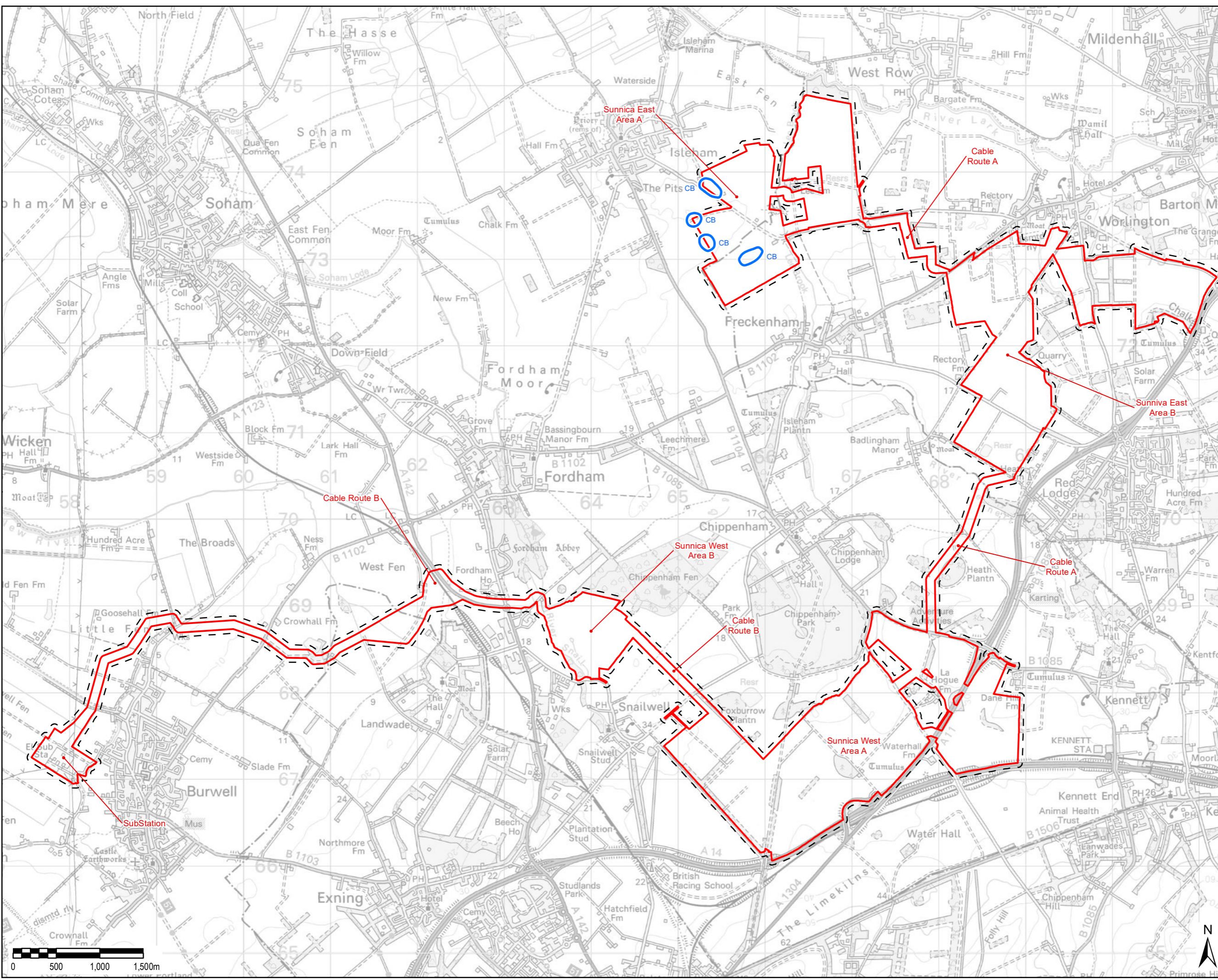
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- DCO Boundary
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 - Breeding bird territory
 - Corn Bunting (CB), 4 terr.



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 CORN BUNTING
 EMBERIZA CALANDRA**

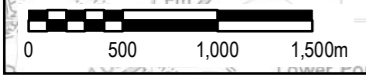
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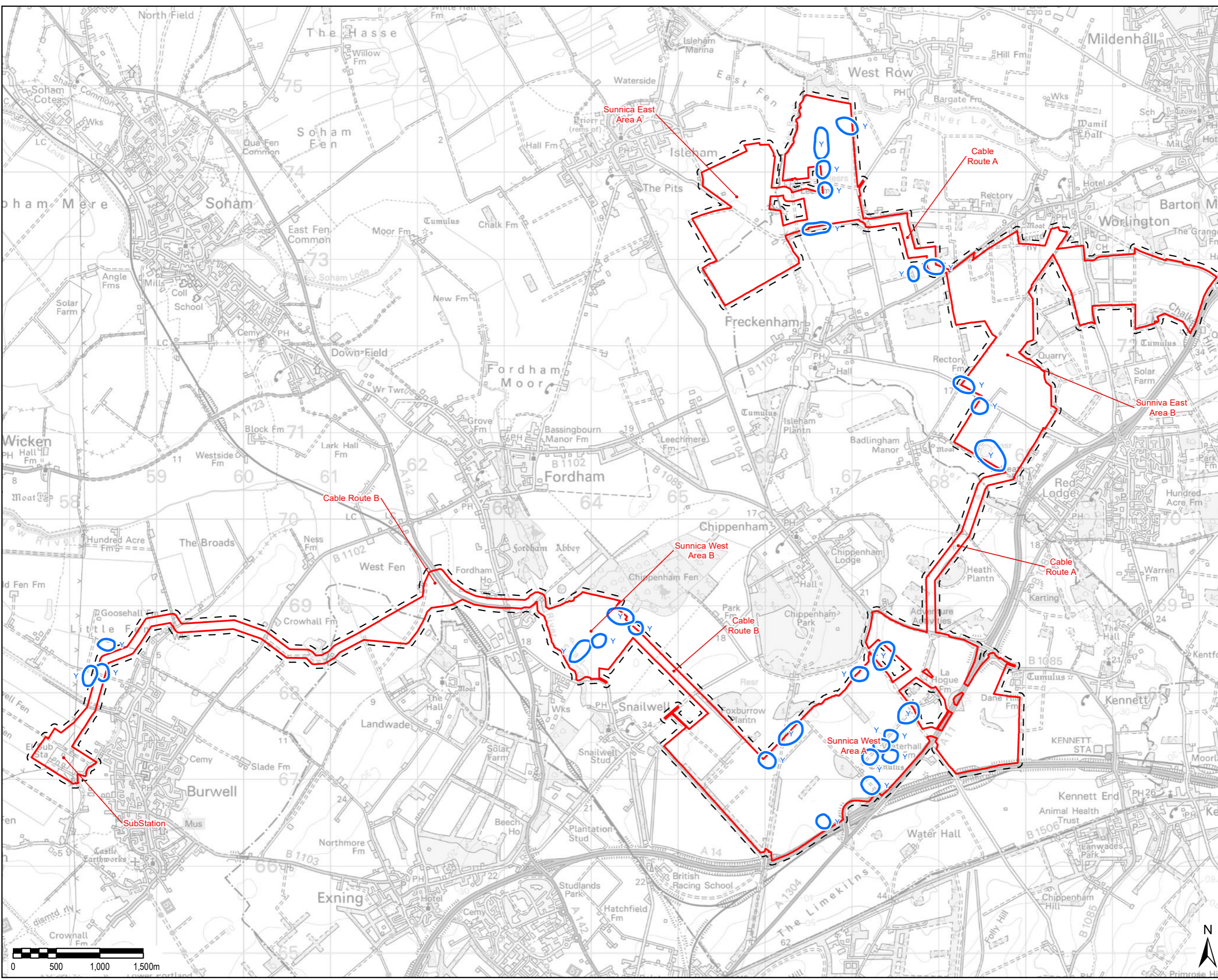
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 - Breeding bird territory
 - Yellowhammer (Y), 28 terr.



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Drawing Title
**BREEDING BIRD TERRITORIES
 YELLOWHAMMER
 EMBERIZA CITRINELLA**

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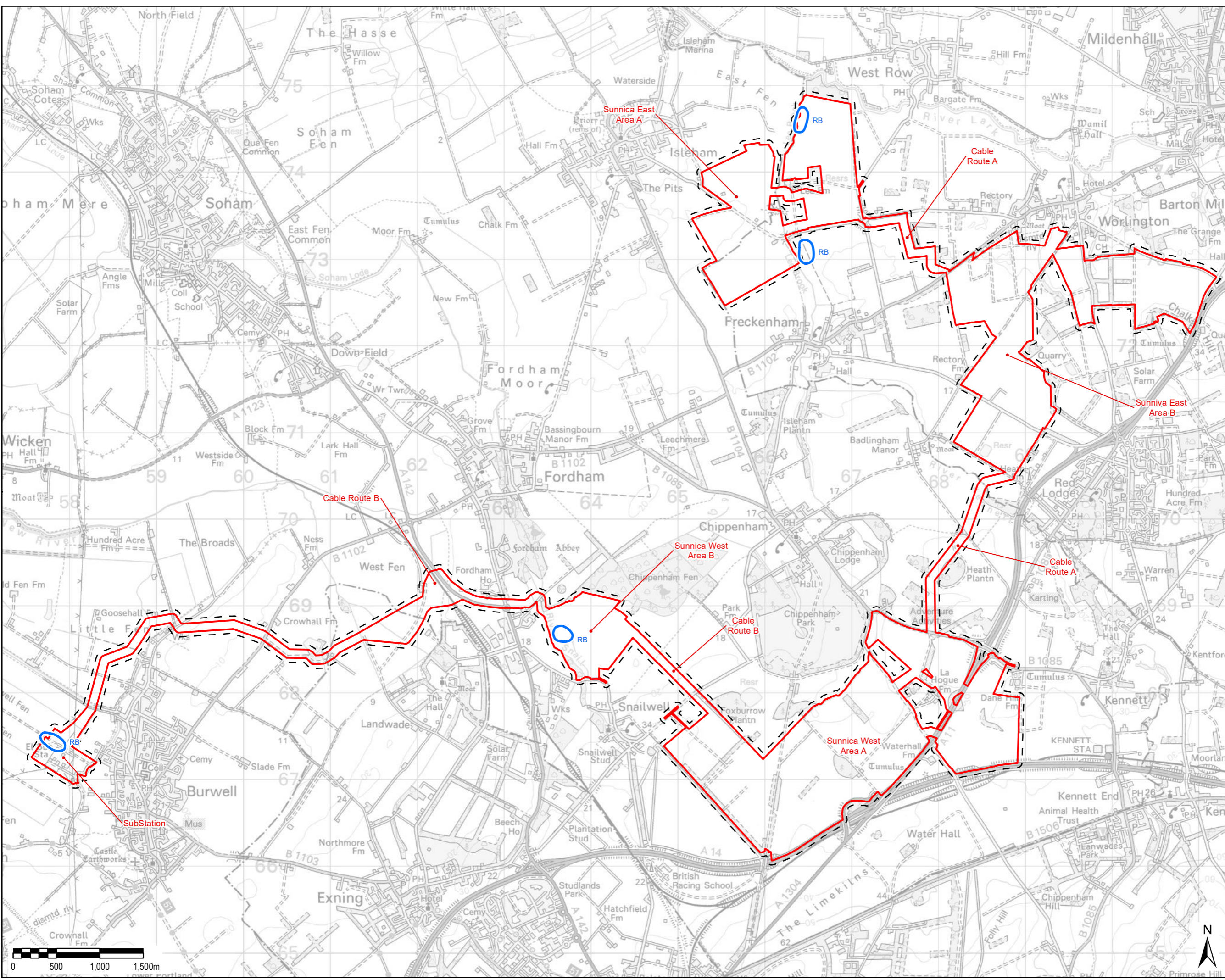
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- DCO Boundary
- 50m survey buffer
- Breeding bird
- Reed Bunting (RB), 4



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**BREEDING BIRD TERRITORIES
 REED BUNTING
 EMBERIZA SCHOENICLUS**

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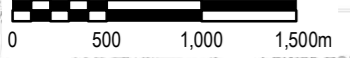
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Sub-Appendix B Records of Protected and Notable Species

Table A.1 Records of protected or notable species returned from the desk study

<i>Common name</i>	<i>Scientific name</i>	<i>Designation</i>
Arctic Tern	<i>Sterna paradisaea</i>	BD1, BAmb
Avocet	<i>Recurvirostra avosetta</i>	BD1, WCA1i, BAmb
Barn Owl	<i>Tyto alba</i>	CPASI, SBAP, WCA1i
Barnacle Goose	<i>Branta leucopsis</i>	BD1, BAmb
Barred Warbler	<i>Sylvia nisoria</i>	BD1
Bewick's Swan	<i>Cygnus columbianus</i>	BD1, UKBAP, CPPS, WCA1i, BAmb
Bittern	<i>Botaurus stellaris</i>	BD1, Sect.41, UKBAP, SBAP, CPPS, WCA1i, BAmb
Black Redstart	<i>Phoenicurus ochruros</i>	Bern2, BRed, WCA1i
Black Stork	<i>Ciconia nigra</i>	BD1
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	BAmb
Black-necked Grebe	<i>Podiceps nigricollis</i>	WCA1i, BAmb
Black-tailed Godwit	<i>Limosa limosa</i>	WCA1i, CPPS, BRed
Black-winged Stilt	<i>Himantopus himantopus</i>	BD1, WCA1i
Brent Goose	<i>Branta bernicla</i>	Sect.41, UKBAP, BAmb
Bullfinch	<i>Pyrrhula pyrrhula</i>	Sect.41, UKBAP, SBAP, CPPS, BAmb
Caspian Gull	<i>Larus cachinnans</i>	BAmb
Common Gull	<i>Larus canus</i>	BAmb
Common (Mealy) Redpoll	<i>Acanthis flammea</i>	BAmb
Common Sandpiper	<i>Actitis hypoleucos</i>	BAmb
Common Scoter	<i>Melanitta nigra</i>	Sect.41, UKBAP, WCA1i, Bred
Common Tern	<i>Sterna hirundo</i>	BD1, BAmb
Corn Bunting	<i>Emberiza calandra</i>	Sect.41, UKBAP, SBAP, CPPS, BRed
Crane	<i>Grus grus</i>	BD1, CPASI, BAmb

<i>Common name</i>	<i>Scientific name</i>	<i>Designation</i>
Cuckoo	<i>Cuculus canorus</i>	Sect.41, UKBAP, BRed
Curlew	<i>Numenius arquata</i>	Sect.41, UKBAP, CPPS, BRed
Dunnock	<i>Prunella modularis</i>	Sect.41, UKBAP, BAmb
Fieldfare	<i>Turdus pilaris</i>	WCA1i, Bred
Firecrest	<i>Regulus ignicapilla</i>	BD1
Gadwall	<i>Anas strepera</i>	BAmb
Garganey	<i>Anas querquedula</i>	WCA1i, BAmb
Golden Plover	<i>Pluvialis apricaria</i>	BD1
Grasshopper Warbler	<i>Locustella naevia</i>	Sect.41, UKBAP, CPPS, BRed
Great Black-backed Gull	<i>Larus marinus</i>	BAmb
Green Sandpiper	<i>Tringa ochropus</i>	WCA1i, BAmb
Greenshank	<i>Tringa nebularia</i>	WCA1i, BAmb
Grey Partridge	<i>Perdix perdix</i>	Sect.41, UKBAP, SBAP, CPPS
Grey Plover	<i>Pluvialis squatarola</i>	BAmb
Grey Wagtail	<i>Motacilla cinerea</i>	Bred
Greylag Goose	<i>Anser anser</i>	BAmb
Hen Harrier	<i>Circus cyaneus</i>	BD1, Sect.41, WCA1i
Herring Gull	<i>Larus argentatus</i>	CPPS, BRed
Honey-buzzard	<i>Pernis apivorus</i>	BD1, WCA1i, BAmb
House Martin	<i>Delichon urbicum</i>	BAmb
House Sparrow	<i>Passer domesticus</i>	Sect.41, UKBAP, CPPS, BRed
Kestrel	<i>Falco tinnunculus</i>	BAmb
Kingfisher	<i>Alcedo atthis</i>	BD1, WCA1i
Lapwing	<i>Vanellus vanellus</i>	Sect.41, UKBAP, CPPS, BRed
Lesser Black-backed Gull	<i>Larus fuscus</i>	BAmb
Lesser Redpoll	<i>Acanthis cabaret</i>	Sect.41, UKBAP, CPPS, BRed
Lesser Spotted Woodpecker	<i>Dendrocopos minor</i>	Sect.41, UKBAP, CPPS, BRed
Linnet	<i>Linaria cannabina</i>	Sect.41, UKBAP, SBAP, CPPS, BRed

<i>Common name</i>	<i>Scientific name</i>	<i>Designation</i>
Little Egret	<i>Egretta garzetta</i>	BD1
Mallard	<i>Anas platyrhynchos</i>	BAmb
Marsh Harrier	<i>Circus aeruginosus</i>	BD1, WCA1i, BAmb
Marsh Tit	<i>Poecile palustris</i>	Sect.41, UKBAP, CPPS, BRed
Meadow Pipit	<i>Anthus pratensis</i>	BAmb
Mediterranean Gull	<i>Larus melanocephalus</i>	BD1, WCA1i, BAmb
Merlin	<i>Falco columbarius</i>	BD1, WCA1i, Bred
Mistle Thrush	<i>Turdus viscivorus</i>	Bred
Mute Swan	<i>Cygnus olor</i>	BAmb
Nightingale	<i>Luscinia megarhynchos</i>	Bred
Nightjar	<i>Caprimulgus europaeus</i>	BD1, Sect.41, UKBAP, SBAP, BAmb
Osprey	<i>Pandion haliaetus</i>	BD1, WCA1i
Oystercatcher	<i>Haematopus ostralegus</i>	BAmb
Parrot Crossbill	<i>Loxia pytyopsittacus</i>	WCA1i, BAmb
Peregrine	<i>Falco peregrinus</i>	BD1, WCA1i
Pintail	<i>Anas acuta</i>	BAmb
Quail	<i>Coturnix coturnix</i>	WCA1i, BAmb, BRCC
Red Kite	<i>Milvus milvus</i>	BD1, WCA1i
Redshank	<i>Tringa totanus</i>	BAmb
Redwing	<i>Turdus iliacus</i>	WCA1i, Bred
Reed Bunting	<i>Emberiza schoeniclus</i>	Sect.41, UKBAP, SBAP, CPPS, BAmb
Ring Ouzel	<i>Turdus torquatus</i>	Sect.41, UKBAP, Bred
Ringed Plover	<i>Charadrius hiaticula</i>	Bred
Ruff	<i>Calidris pugnax</i>	BD1, WCA1i, Bred
Sandwich Tern	<i>Sterna sandvicensis</i>	BD1, BAmb
Shelduck	<i>Tadorna tadorna</i>	BAmb
Short-eared Owl	<i>Asio flammeus</i>	BD1, BAmb
Shoveler	<i>Anas clypeata</i>	BAmb
Skylark	<i>Alauda arvensis</i>	Sect.41, UKBAP, SBAP, CPPS, BRed
Snipe	<i>Gallinago gallinago</i>	BAmb

<i>Common name</i>	<i>Scientific name</i>	<i>Designation</i>
Song Thrush	<i>Turdus philomelos</i>	Sect.41, UKBAP, SBAP, CPPS, BRed
Spoonbill	<i>Platalea leucorodia</i>	BD1, WCA1i, BAmb
Spotted Crake	<i>Porzana porzana</i>	BD1, WCA1i, BAmb
Spotted Flycatcher	<i>Muscicapa striata</i>	Sect.41, UKBAP, SBAP, CPPS, BRed
Starling	<i>Sturnus vulgaris</i>	Sect.41, UKBAP, Bred
Stock Dove	<i>Columba oenas</i>	BAmb
Stone-curlew	<i>Burhinus oedichnemus</i>	BD1, Sect.41, UKBAP, SBAP, CPPS, WCA1i, BAmb
Swift	<i>Apus apus</i>	CPASI, BAmb
Tawny Owl	<i>Strix aluco</i>	BAmb
Teal	<i>Anas crecca</i>	BAmb
Tree Pipit	<i>Anthus trivialis</i>	Sect.41, UKBAP, BRed
Tree Sparrow	<i>Passer montanus</i>	Sect.41, UKBAP, SBAP, CPPS, BRed
Turtle Dove	<i>Streptopelia turtur</i>	Sect.41, UKBAP, SBAP, CPPS, BRed
Whimbrel	<i>Numenius phaeopus</i>	WCA1i, BRed
Whinchat	<i>Saxicola rubetra</i>	BRed
White-fronted Goose	<i>Anser albifrons</i>	Sect.41, UKBAP, BRed
Whooper Swan	<i>Cygnus cygnus</i>	BD1, WCA1i, BAmb
Wigeon	<i>Anas penelope</i>	BAmb
Willow Tit	<i>Poecile montana</i>	Sect.41, UKBAP, BRed
Willow Warbler	<i>Phylloscopus trochilus</i>	BAmb
Wood Sandpiper	<i>Tringa glareola</i>	BD1, WCA1i, BAmb
Woodcock	<i>Scolopax rusticola</i>	BRed
Woodlark	<i>Lullula arborea</i>	BD1, Sect.41, UKBAP, SBAP, WCA1i
Wryneck	<i>Jynx torquilla</i>	UKBAP, WCA1i
Yellow Wagtail	<i>Motacilla flava</i>	Sect.41, UKBAP, CPPS, BRed
Yellowhammer	<i>Emberiza citrinella</i>	Sect.41, UKBAP, CPPS, BRed
Yellow-legged Gull	<i>Larus michahellis</i>	BAmb

