

Steeple Renewables Project

Environmental Impact Assessment Scoping Report
Appendix 8A: Designated Sites

Land at Sturton-le-Steeple, Nottinghamshire

Prepared by: BSG Ecology



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1. Appendix 8A: Designated Sites

1.1 Desk study methodology

1.1.1 A data search for records of protected and notable species, and non-statutory local designated sites within 2km of the Site was requested from Nottinghamshire Biodiversity Records Centre (NBRC) and Lincolnshire Environmental Records Centre (LERC) in March 2024.

1.1.2 The MAGIC application (Defra, 2024a) was accessed, most recently in March 2024, to identify any nationally designated statutory sites of nature conservation interest within 5 km of the Site, such as Sites of Special Scientific Interest (SSSI). The desk study has also considered the location of the Site with respect to Natural England's Impact Risk Zones (IRZ) for statutorily designated sites.

1.1.3 A search for internationally designated sites of nature conservation interest, such as Ramsar Sites, proposed Ramsar Sites, Special Protection Areas (SPAs), Potential SPAs (pSPAs), Special Areas of Conservation (SACs), Possible SACs (pSACs), Candidate SACs (cSACs), and Sites of Community Importance (SCIs) was undertaken within 10 km of the Site. The search was extended to 30 km for SPAs and Ramsar Sites, as well as any SACs that include bats as qualifying features.

1.1.4 In the absence of prescriptive industry guidance on search areas on which to base the desk study, the distances of 2 km, 5 km, 10 km and 30 km have been decided with consideration to multiple factors. These include the CIEEM (2018) guidelines on determining Zones of Influence, consideration of the potential value of the Site to qualifying features, whether there are functional linkages from the Site to the wider landscape, the scale of the proposed scheme, as well as precedents set during the assessment of other NSIP schemes of similar nature.

1.2 Results

Statutory designated sites

1.2.1 Within the search areas, there are five biological SSSIs, four SACs, one SPA and one Ramsar site). The location, designation and description for each site are described in **Table 8.A.1** and shown on **Figures 8.A.1, 8.A.2 and 8.A.3**.

Table 8.A.1: Statutory designated sites (biological only) within the desk study area.

Site name	Designation	Distance from the Site	Summary of designation rationale
Clarborough Tunnel	SSSI	40m southwest	Notified for its unimproved calcareous grassland that have formed on the cuttings and spoil heaps associated with the operational railway.
Lea Marsh	SSSI	1.6km north	Unimproved floodplain meadow and wet pasture adjacent to the River Trent. Supports a number of scarce plant species and notable breeding wading bird species.
Chesterfield Canal	SSSI	1.9km west	Nationally uncommon aquatic plant communities.
Ashton's Meadow	SSSI	2.2km south	Unimproved, species-rich neutral grassland.
Treswell Wood	SSSI	2.5km south	Ash-oak-maple wood and ancient semi-natural woodland on heavy clay soils.
Birklands and Bilhaugh	SAC	19.5km north	Lowland raised bog, that supports Annex I habitat 'degraded raised bogs still capable of natural regeneration'. Is also

Site name	Designation	Distance from the Site	Summary of designation rationale
			notable for its invertebrate fauna.
Thorne and Hatfield Moors	SPA	19.5km north	<p>Supports populations of European nightjar <i>Caprimulgus europaeus</i>, which is closely associated with lowland heathland and felled or recently planted conifer plantations.</p> <p>The site also supports small numbers (at non-qualifying levels) of other Annex I species: hen harrier <i>Circus cyaneus</i>, merlin <i>Falco columbarius</i>, short-eared owl <i>Asio flammeus</i> and hobby <i>Falco subbuteo</i>.</p>
Humber Estuary	SAC	26.5km north	Supports various Annex I coastal habitats, and Annex II species sea lamprey <i>Petromyzon marinus</i> , River lamprey <i>Lampetra fluviatilis</i> and grey seal <i>Halichoerus grypus</i> .
Humber Estuary	Ramsar	26.5km north	A representative example of a near-natural estuary with the following component habitats: dune systems and humid

Site name	Designation	Distance from the Site	Summary of designation rationale
			dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons. Supports internationally important assemblages of passage and wintering waders and waterfowl, as well as supporting aquatic and marine species.
Thorne Moor	SAC	28.5km north	Lowland raised bog, that supports Annex I habitat 'degraded raised bogs still capable of natural regeneration'. Is also notable for its invertebrate fauna.

Non-statutory designated sites and ancient woodland

- 1.2.2 There are 32 non-statutory designated sites and two ancient semi-natural woodlands (ASNW) or plantations on ancient woodland sites (PAWS) within the search area. Six of the LWS (also referred to as Sites of Nature Conservation [SINCs] in Nottinghamshire) are within the Site boundary. Summary details of the non-statutory designated sites and ancient woodlands within the search area are provided in **Table 8.A.2** below.

Table 8.A.2: Non-statutory designated sites and ancient woodland within 2 km of the Site.

Site Name and Designation	Distance from Site	Feature(s) of interest
Nottinghamshire SINCs		
Blue Stocking Lane, Clarborough	Partially within the Site	A green lane with species-rich grassland and hedgerows.
Thornhill Lane Drain, Littleborough	Within the Site	A drain of interest for water beetles.
Mother Drain, Upper Ings	Partially within the Site	A drain of interest for water beetles.
Out Ings	Within the Site	A diverse mosaic of grassland, open water and carr communities adjacent to the River Trent.
Littleborough Lagoons	Within the Site	A shallow lagoon with flood bank and drain of botanical and ornithological importance.
High House Road Verges, Sturton Le Steeple	Off-site, adjacent west boundary.	A notable neutral grassland, ditch bank communities and species-rich hedgerow along a track.
West Burton Meadow	Off-site, adjacent north boundary.	An unimproved ridge and furrow grassland with an excellent species content.
Clarborough Tunnel	40m southwest	A fine example of species-rich calcareous grassland and scrub developed around the tunnel top and cuttings on an active

Site Name and Designation	Distance from Site	Feature(s) of interest
		railway line - a site of botanical and zoological interest.
Maumhill Wood	130m west	A broadleaved woodland on Mercia Mudstone clays with a notable ground flora.
Burton Round Ditch	160m northeast	A drain of interest for water beetles.
Caddow Wood (Northern Assart)	280m south	A neglected coppice wood of considerable floristic interest.
West Burton Power Station	345m northeast	An area of mature habitats within the power station of biological interest.
Caddow Wood (Southern Assarts)	430m south	A discontinuous and open old woodland of some botanical interest.
Muspitt Lane	435m northwest	Narrow strip of roadside verge and ditch bank with several notable species.
North Leys Road (ditch), Coates	470m south	A drain of interest for water beetles.
Retford Gate Green Lane	535m south	Unimproved neutral grassland with noteworthy herbs and communities along a Green Lane.
West Burton Reedbed	590m northeast	An extensive reedbed and associated carr woodland of botanical and note.
Clarborough Gypsum Pits	605m west	An area of calcicolous scrub and grassland developed on the site of a disused gypsum quarry.
Whinleys Road Woodland	630m southwest	A noteworthy woodland
Hutchinsons Holt	725m south	A belt of unmanaged woodland with a dense understorey.

Site Name and Designation	Distance from Site	Feature(s) of interest
North Wheatley Beck	955m northwest	A stream of interest for water beetles.
Coates Wetland	1km southeast	A group of pools with rough grazing land and a section of the River Trent, providing an area of zoological and botanical interest.
Cowland Stripe	1.2km southwest	Roadside strip of woodland with a notable flora.
Bole Ings	1.3km north	An old Trent oxbow with a good diversity of semi-natural habitat types - of botanical and zoological interest.
Hangingside and Hollinhill Lanes	1.5km west	Trackside verges that are rich in herbs.
Bole Ings Drains	1.6km north	Drains with a notable aquatic flora and of interest for water beetles
Broad Lane Grassland, North Leverton	1.6km south	A neutral grassland cut for hay.
Cow Pasture Lane Drains	1.8km south	Drains with notable aquatic and bankside vegetation.
Chesterfield Canal (Welham to Misterton)	1.9km west	A representative stretch of canal supporting a nationally notable aquatic plant community characteristic of brackish waters, and a rich invertebrate.
Lincolnshire LWS and Ancient woodlands		
Burton Wood ASNW and PAWS	1.3km east	The woodland listed on Natural England's Ancient Woodland Inventory datasets.

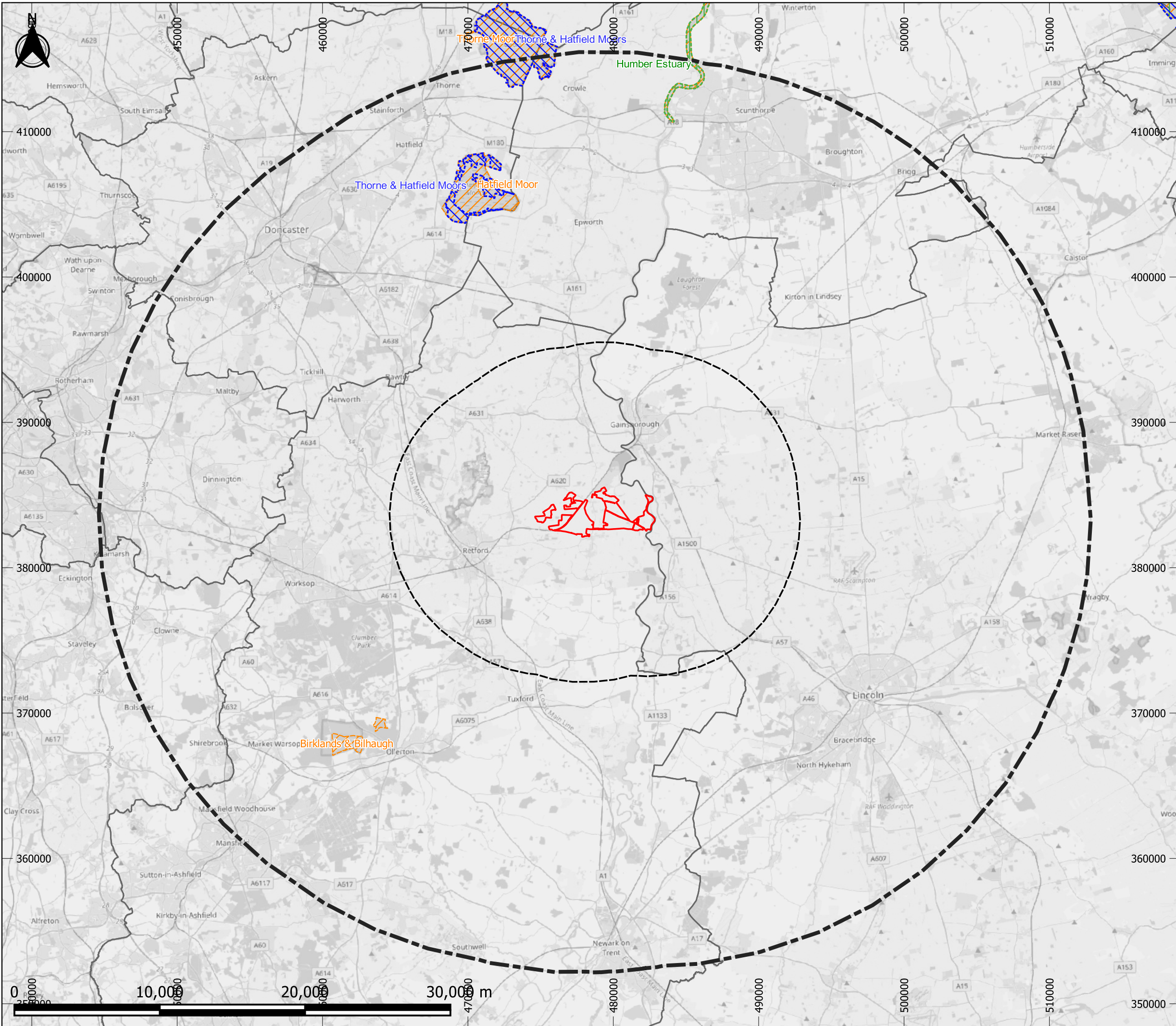
Site Name and Designation	Distance from Site	Feature(s) of interest
Trent Port Wetland LWS	1.5km southeast	Selected for its mosaic of botanically rich damp grassland/marsh/fen, and standing water/pond.
Lea Meadow LWS	1.5km north	Selected for meeting the criteria for neutral grassland and a mosaic of at least two other habitats.
Track to Lea Marshes LWS	1.6km north	Selected for meeting the criteria for neutral grassland and a for its self-sustaining population of subterranean clover <i>Trifolium subterraneum</i> .
Knaith Park Wood LWS, ASNW and PAWS	1.8km northeast	Selected for its ancient semi-natural woodland, and plantations on ancient woodland sites, and wet woodland. The woodland listed on Natural England's Ancient Woodland Inventory datasets.

1.3 References

CIEEM (2018). 'Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2'. Chartered Institute of Ecology and Environmental Management, Winchester.

Defra (2024a) MAGIC Interactive Map [online] Available at:
<https://magic.defra.gov.uk/MagicMap.aspx>

1.4 Figures



- Legend
- Site boundary
 - 10km from site boundary
 - 30km from site boundary
 - Counties & Unitary Authorities
 - Special Areas of Conservation
 - Ramsar Site
 - Special Protection Areas



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Figure 8.A.1: Internationally Designated Sites of Nature Conservation

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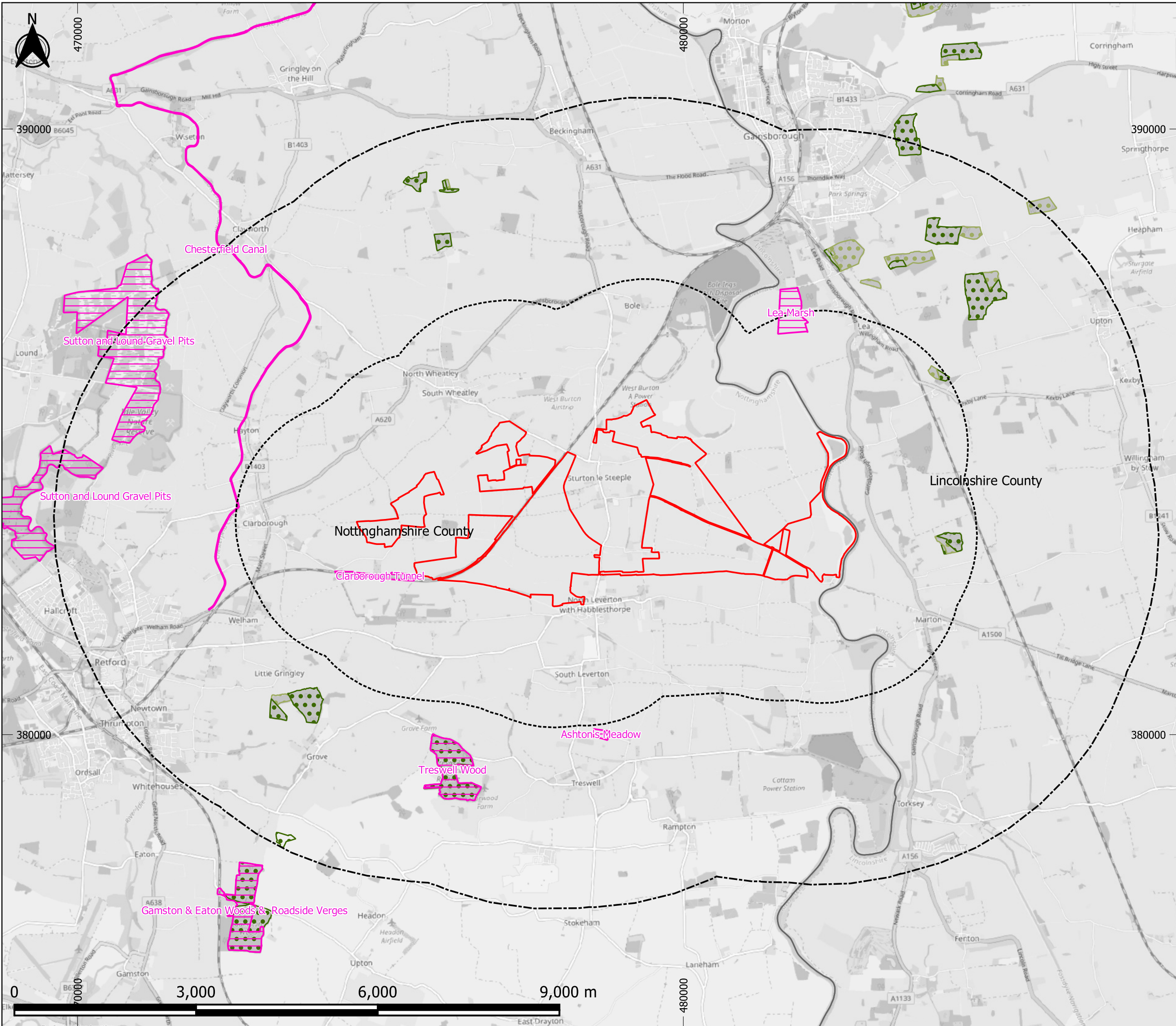
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- Legend
- Site boundary
 - 2km from site boundary
 - 5km from site boundary
 - Counties & Unitary Authorities
 - Sites of Special Scientific Interest
 - Ancient Semi-Natural Woodland
 - Plantation on Ancient Woodland Site



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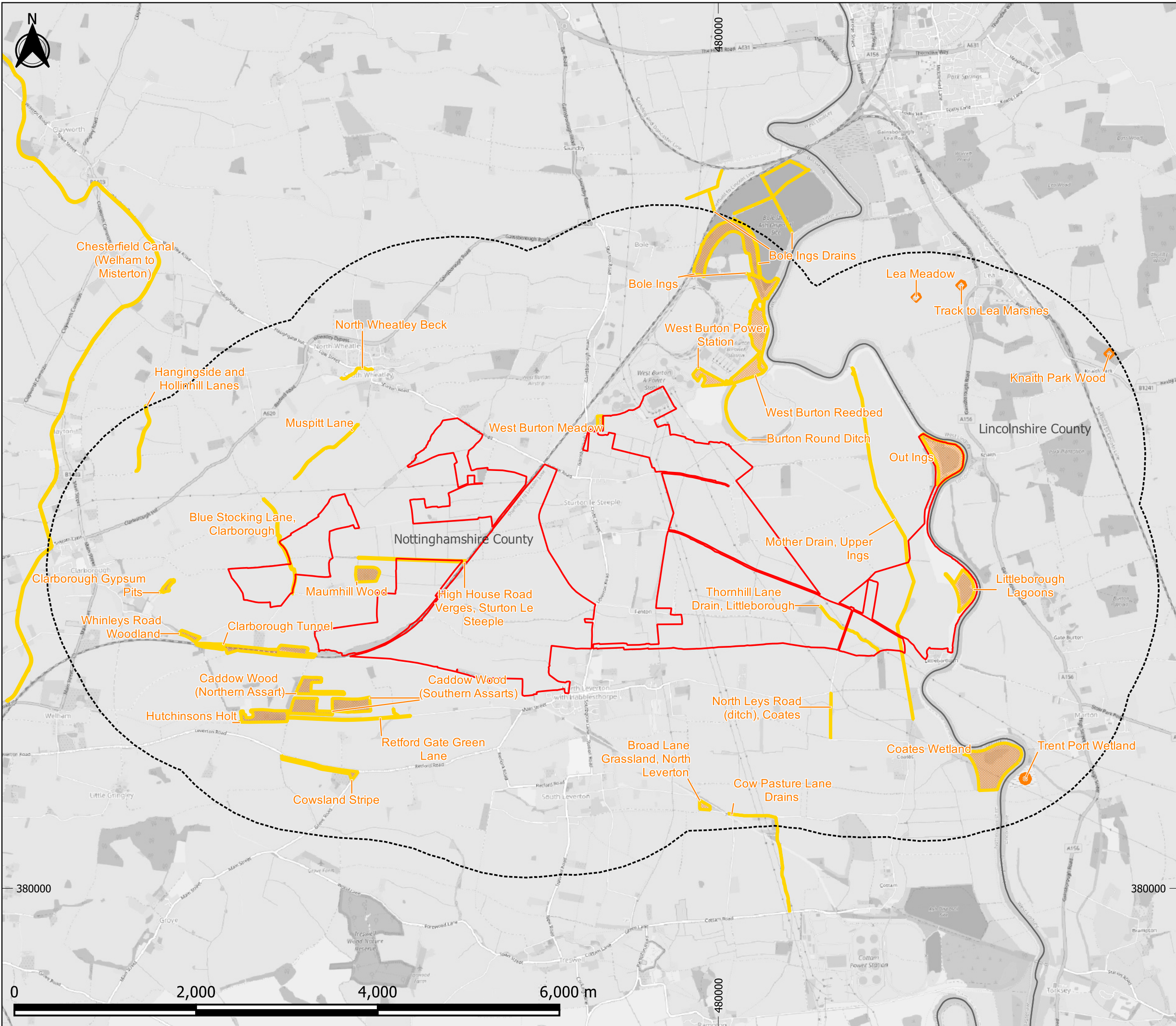
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- Legend**
- Site boundary
 - 2km from site boundary
 - Counties & Unitary Authorities
 - Indicative location of locally designated non-statutory site (LWS provided by LERC)
 - Location of locally designated non-statutory site (SINC provided by NBGRC)



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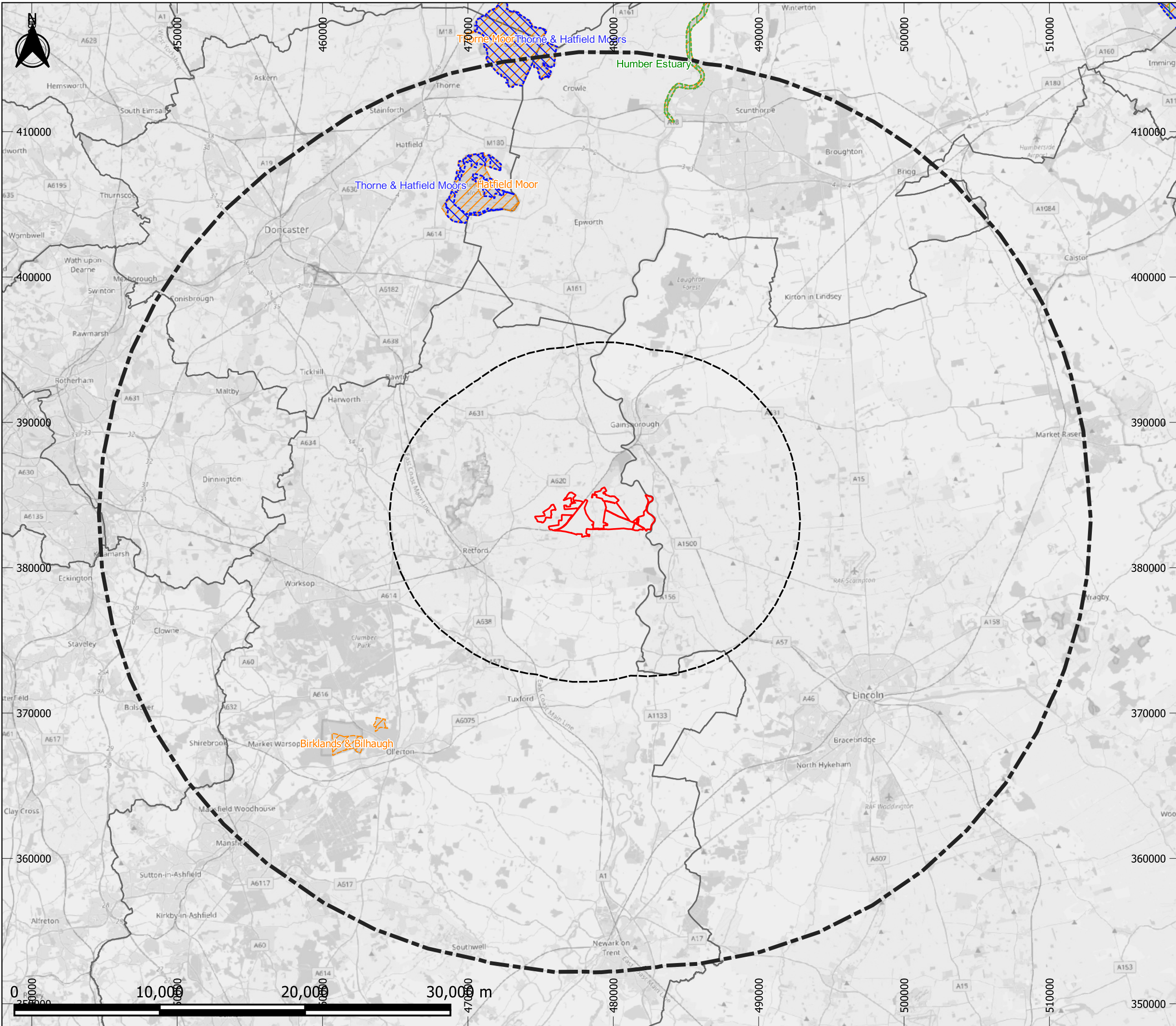
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 - Special Areas of Conservation
 - Ramsar Site
 - Special Protection Areas



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Figure 8.A.1: Internationally Designated Sites of Nature Conservation

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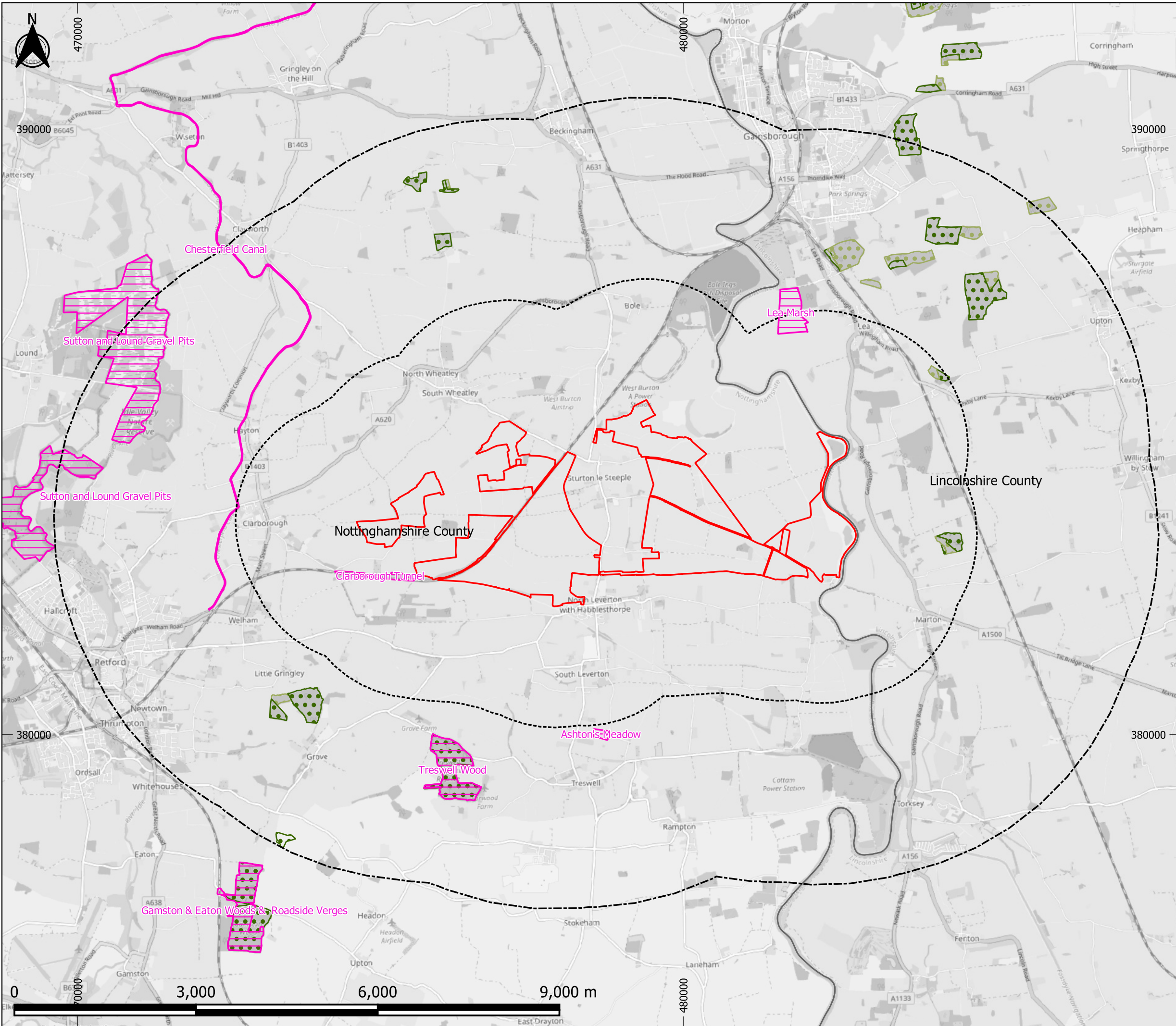
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- Site boundary
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 - 5km from site boundary
 - Counties & Unitary Authorities
 - Sites of Special Scientific Interest
 - Ancient Semi-Natural Woodland
 - Plantation on Ancient Woodland Site



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 Figure 8.A.2: Nationally Designated Sites of Nature Conservation

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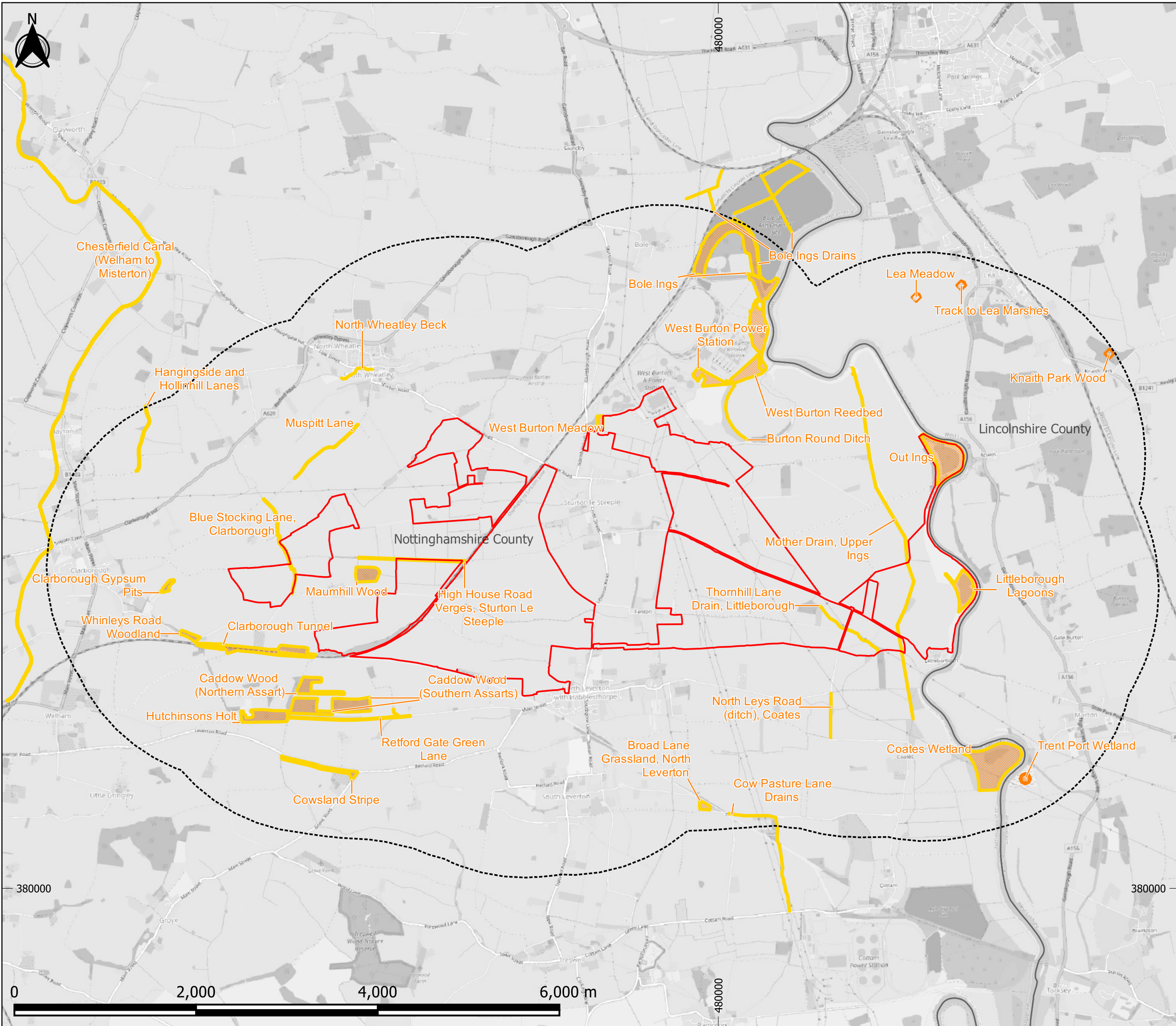
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- Legend**
- Site boundary
 - 2km from site boundary
 - Counties & Unitary Authorities
 - Indicative location of locally designated non-statutory site (LWS provided by LERC)
 - Location of locally designated non-statutory site (SINC provided by NBGRC)

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Figure 8.A.3: Locally Designated Sites of Nature Conservation

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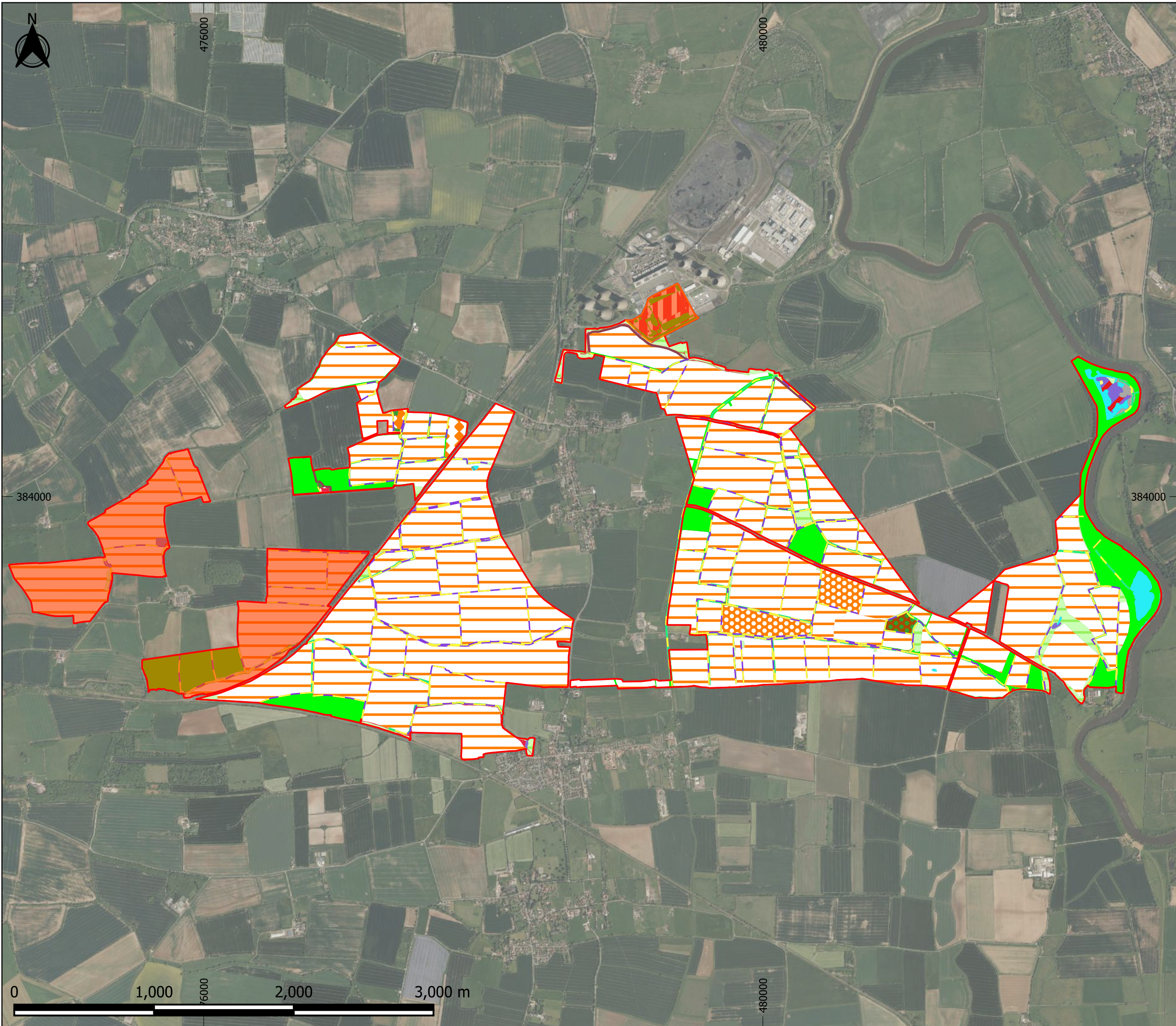
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- Legend
- Native Hedgerow
 - Built linear features
 - Ditches
 - Ruderal/Ephemeral
 - Traditional orchards
 - Vacant/derelict land/ bareground
 - Cereal crops
 - Non-cereal crops
 - Horticulture
 - Reedbeds
 - Other neutral grassland
 - Modified grassland
 - Scrub
 - Ponds
 - Temporary lakes, ponds and pools
 - Developed land; sealed surface
 - Artificial unvegetated, unsealed surface
 - Other woodland; broadleaved
 - Other woodland; mixed
 - Site boundary
 - No Access - Mapped from PRow and aerial photography

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Figure 8.B: Existing Habitat Plan

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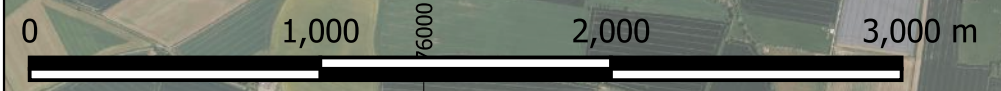
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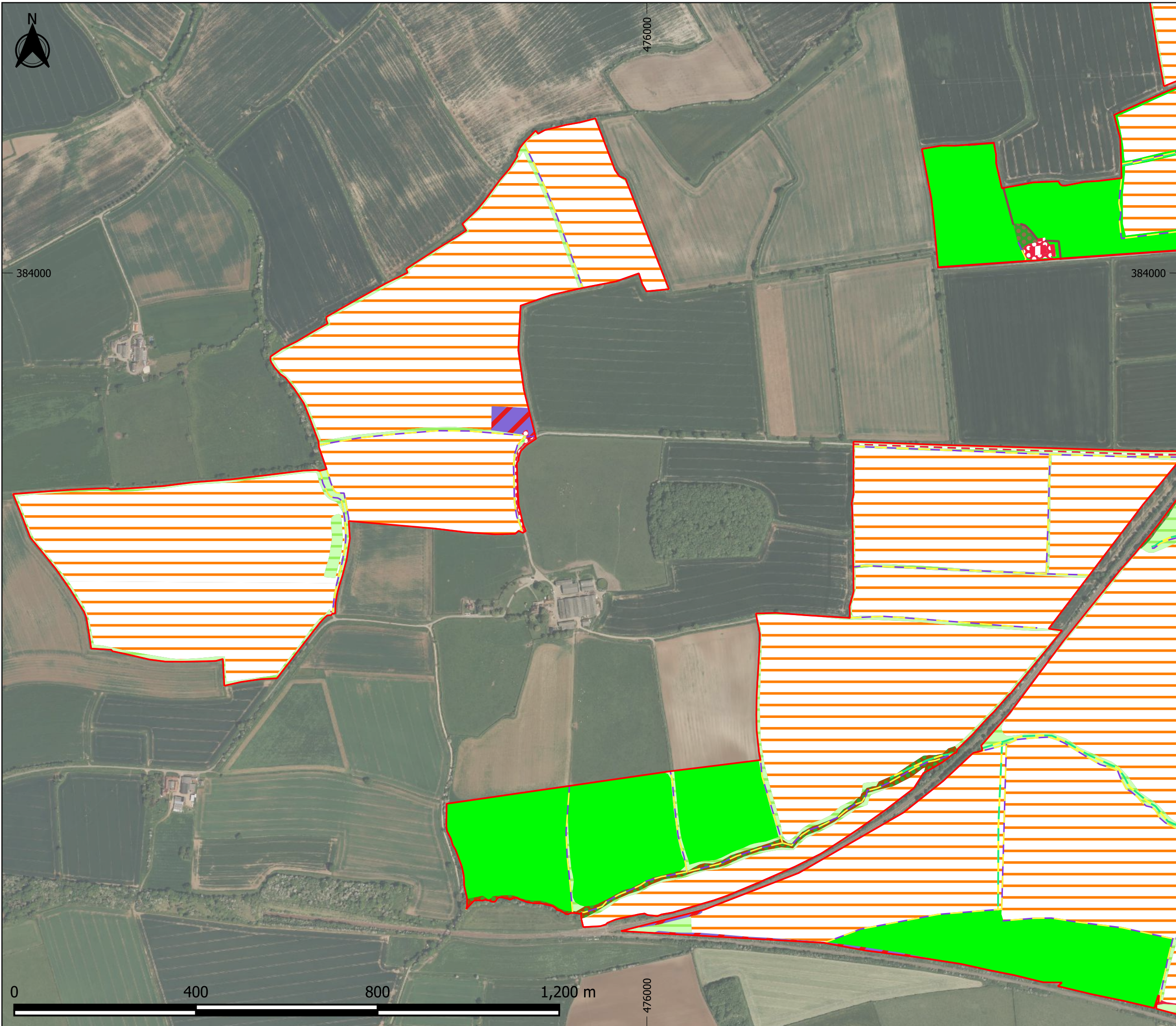
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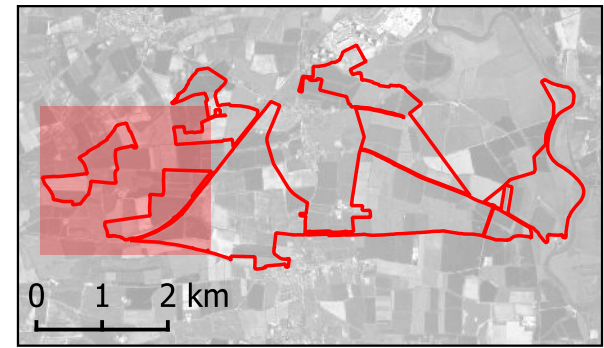
Sources: BSG Ecology survey data

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- Legend
-  Built linear features
 -  Ditches
 -  Vacant/derelict land/ bareground
 -  Cereal crops
 -  Other neutral grassland
 -  Modified grassland
 -  Developed land; sealed surface
 -  Artificial unvegetated, unsealed surface
 -  Other woodland; broadleaved
 -  Other woodland; mixed
 -  Site boundary



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Figure 8.B.1: Existing Habitat Plan

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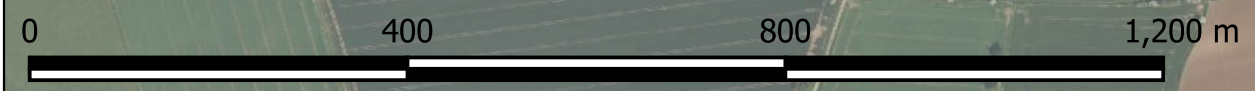
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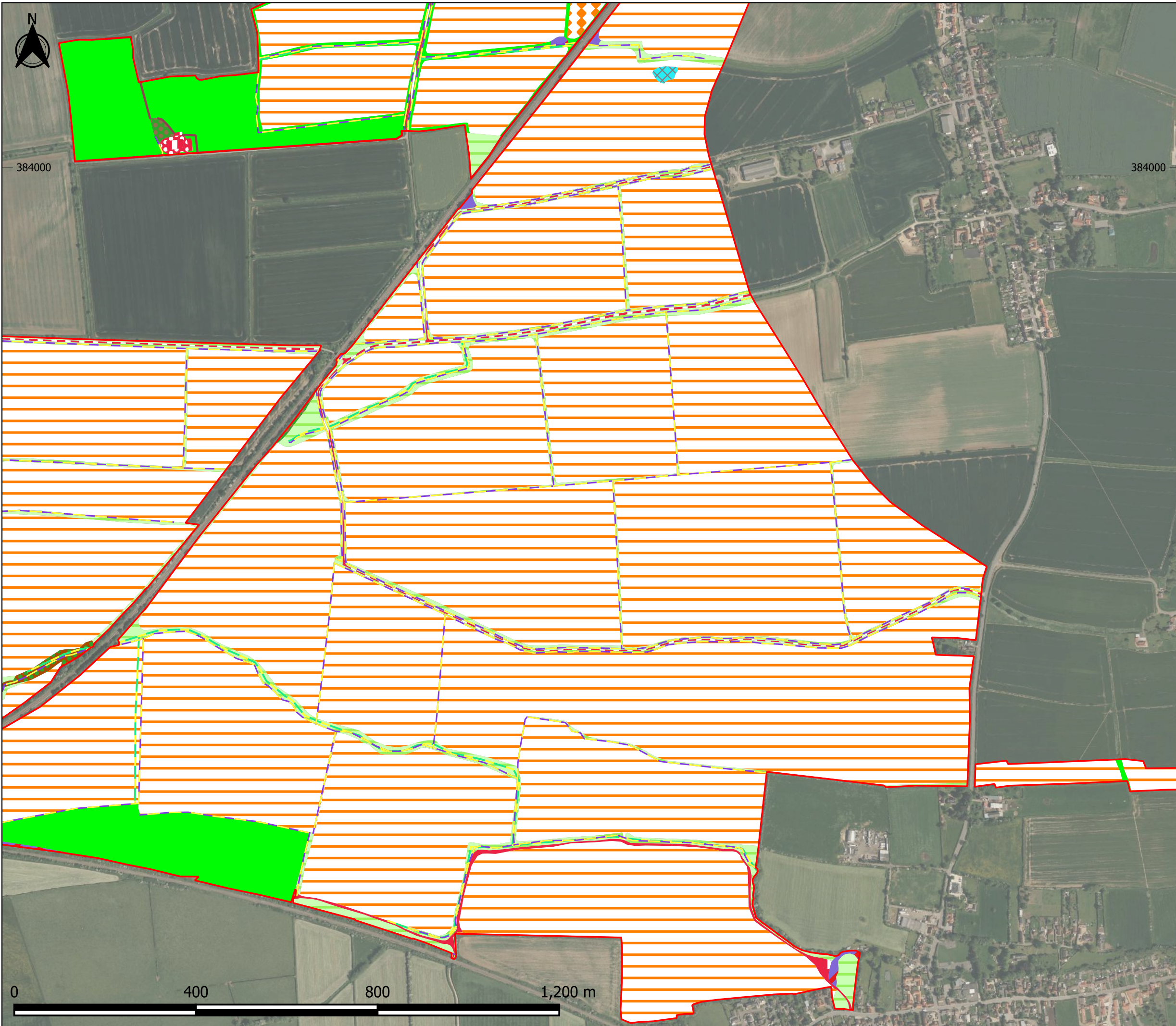
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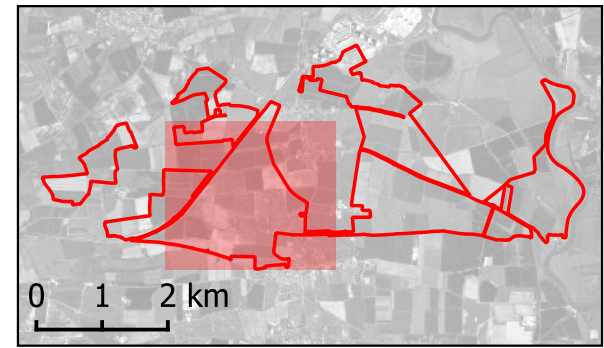
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- Legend
-  Built linear features
 -  Ditches
 -  Vacant/derelict land/ bareground
 -  Cereal crops
 -  Horticulture
 -  Other neutral grassland
 -  Modified grassland
 -  Temporary lakes, ponds and pools
 -  Developed land; sealed surface
 -  Artificial unvegetated, unsealed surface
 -  Other woodland; broadleaved
 -  Other woodland; mixed
 -  Site boundary



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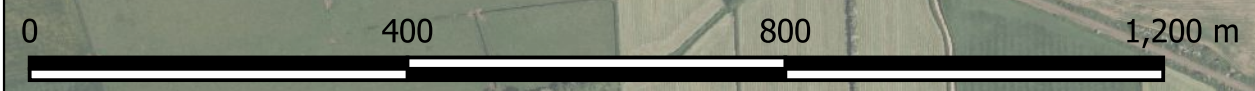
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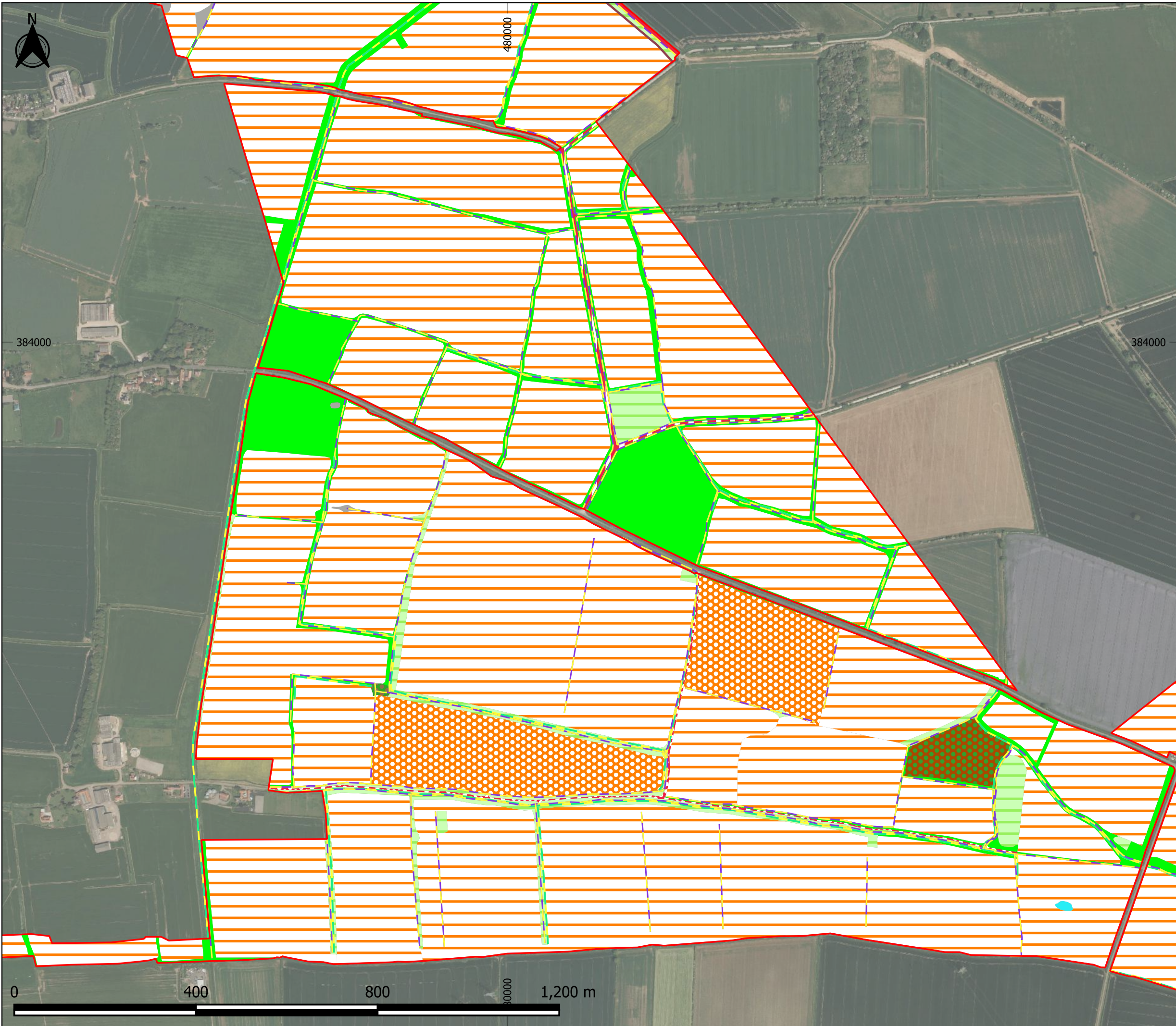
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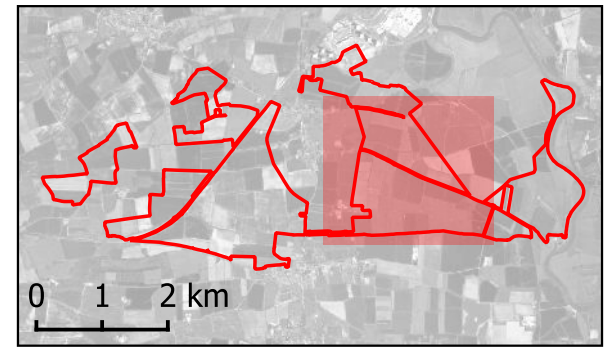
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- Legend
- Native Hedgerow
 - Built linear features
 - Ditches
 - Ruderal/Ephemeral
 - Vacant/derelict land/ bareground
 - Cereal crops
 - Non-cereal crops
 - Other neutral grassland
 - Modified grassland
 - Developed land; sealed surface
 - Artificial unvegetated, unsealed surface
 - Other woodland; broadleaved
 - Other woodland; mixed
 - Site boundary



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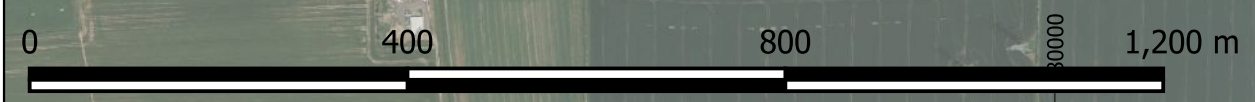
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- Legend
- Ditches
 - Ruderal/Ephemeral
 - Vacant/derelict land/ bareground
 - Cereal crops
 - Reedbeds
 - Other neutral grassland
 - Modified grassland
 - Scrub
 - Ponds
 - Artificial unvegetated, unsealed surface
 - Other woodland; mixed
 - Site boundary



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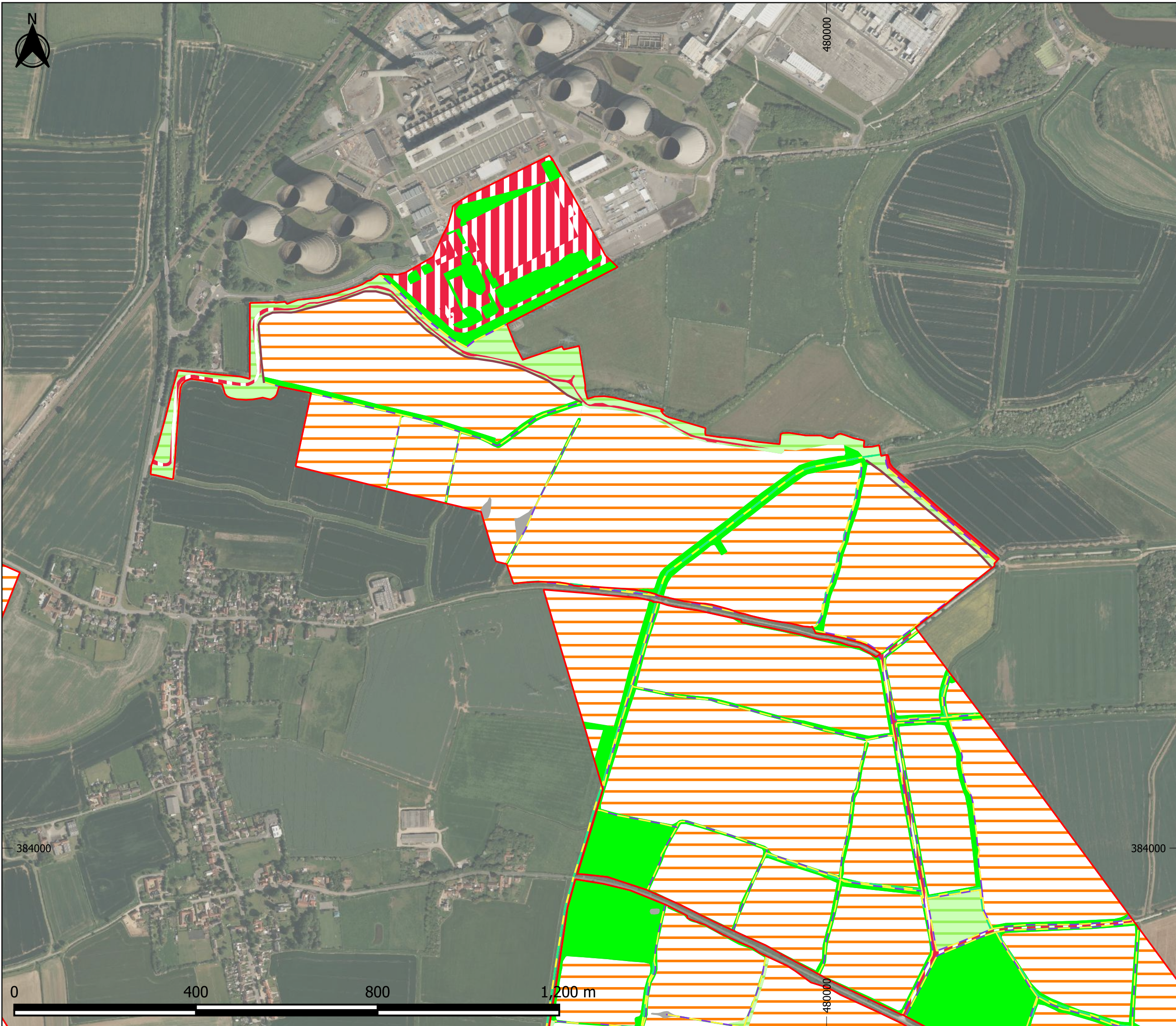
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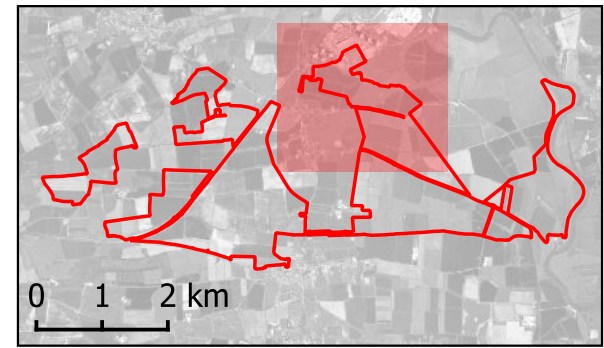
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- Legend
- Native Hedgerow
 - Built linear features
 - Ditches
 - Ruderal/Ephemeral
 - Vacant/derelict land/ bareground
 - Cereal crops
 - Other neutral grassland
 - Modified grassland
 - Developed land; sealed surface
 - Site boundary



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Figure 8.B.5: Existing Habitat Plan

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




Projection: OSGB 1936/British National Grid - EPSG 27700

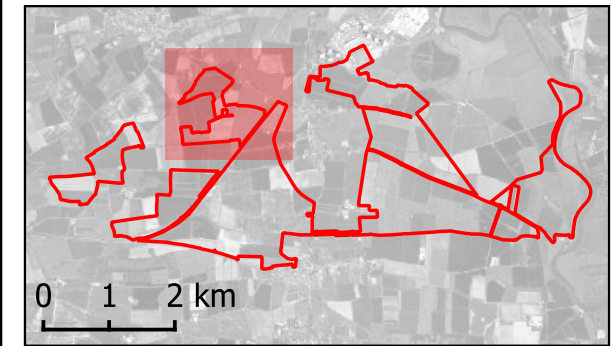
Sources: BSG Ecology survey data

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Legend

-  Built linear features
-  Ditches
-  Traditional orchards
-  Cereal crops
-  Horticulture
-  Other neutral grassland
-  Modified grassland
-  Temporary lakes, ponds and pools
-  Developed land; sealed surface
-  Artificial unvegetated, unsealed surface
-  Other woodland; broadleaved
-  Site boundary



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Figure 8.B.6: Existing Habitat Plan

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384000

384000

0 300 600 900 m

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Steeple Renewables Project

Environmental Impact Assessment Scoping Report
Appendix 8B: Habitat Survey

Land at Sturton-le-Steeple, Nottinghamshire

Prepared by: BSG Ecology



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Figures

Figure 8.B. Existing Habitat Plan (formed of 7 sheets)

1. Appendix 8B: Habitat Survey

1.1 Methodology

Desk study

1.1.1 The MAGIC.gov website (Defra, 2024) was accessed on 18 March 2024 to identify areas listed on the priority habitat inventory. In addition, the desk study included a review of freely available on-line aerial photographs and maps (Bing Maps 1:25,000).

1.1.2 Habitats have been provisionally mapped via desk study, including use of aerial imagery from 2021 (Bing, 2024), and ground-truthed via field surveys (refer to field survey methodology below).

Field survey

1.1.3 The field surveys were undertaken by ecologists Daniel Foster MCIEEM, Emily McVean ACIEEM and Emma Bruce ACIEEM throughout January to March 2024. The Site was walked over to identify and map preliminary habitat types or features and list dominant and notable plant species present. Detailed botanical survey was not undertaken, and will be programmed for the 2024 botanical survey season to verify the preliminary findings.

1.1.4 The habitat survey was undertaken with reference to UK Habitat Classification system (UK Habitat Classification Working Group, 2023) and adapted to include habitat classes used for biodiversity assessments (as defined in DEFRA, 2024). The habitats mapped are shown on **Figures 8.B.1 to 8.B.6**.

1.1.5 The survey was 'extended' to assess the suitability of habitats present to support protected species. Checks made for signs and evidence of protected species throughout the Site. Searches were made for evidence of badger *Meles meles* (such as setts, feeding remains, dung pits, hairs and tracks). The Site was also assessed for its potential to support reptiles and amphibians, and to identify potential habitats for breeding birds or roosting bats.

1.1.6 The Site was also searched for signs of invasive non-native plants such as Japanese knotweed *Fallopia japonica* and Himalayan balsam *Impatiens glandulifera*.

Consideration of potential limitations to survey

1.1.7 The survey was undertaken outside the optimal botanical survey season (typically considered to be May to September). The survey work is considered to be adequate to inform the scoping process as it is possible to broadly identify habitat types, and

their suitability for protected species. Further survey will be undertaken during the optimal season in 2024 to verify the habitat classifications, assess the condition of the habitats (for the BNG assessment), and verify the presence of invasive non-native plants. Therefore, the timing of the extended habitat survey is not considered to be a significant constraint.

- 1.1.8 Three areas of the Site have not been surveyed on the ground at this point as full access has not been provided. These are shown on **Figure 8.B** and comprise areas of farmland in the southwest of the Site and areas of buildings and associated infrastructure associated with West Burton Power Station in the north. Habitat mapping at this stage has been undertaken from public rights of way and using aerial photographs which has allowed an initial assessment of these areas to be undertaken for scoping purposes. Full access will be sought and further habitat survey work undertaken, and therefore this limitation is not considered to be significant.

1.2 Results

Ancient woodland and Priority habitats

- 1.2.1 There is no registered ancient semi-natural woodland (ASNW), planted ancient woodland sites (PAWS); or ancient wood pasture within the Site (inferred from Natural England, 2023).
- 1.2.2 A review of the MAGIC.gov website (Defra, 2024) shows that several priority habitats may be present within the Site including:
- Traditional orchard – one area of traditional orchard is listed as within the Site boundary and its presence has been verified via the field survey.
 - Deciduous woodland – two areas are listed as falling within the Site boundary one of these has been verified as present, whereas the other falls within an area that was identified as willow scrub that forms part of a wetland floodplain mosaic.
 - Coastal and floodplain grazing marsh (CFGM) – three areas are listed as falling within the Site boundary. These are not considered to be accurate and were found to be cropland / arable fields at the time of the habitat walkover (January 2024).

1.2.3 In addition, the following priority habitats were assessed to be present during the habitat walkover, but are not listed yet in Natural England Priority Habitat Inventory (Natural England, 2024) include:

- Hedgerows – the majority of hedgerows identified in the Site are considered to meet the criteria for priority habitat, as set out in the priority habitat definitions (Maddock et al., 2011).
- Coastal and floodplain grazing marsh (CFGM) is adjacent to the River Trent – further consideration is needed regarding the wetland species presence to confirm whether the habitat qualifies as a modified floodplain wetland mosaic, which is a subset of this priority habitat.
- Reedbed – a relatively small area (approximately 20m x 25m) of reedbed was observed within the wetland mosaic area, close to the River Trent.

1.2.4 Further survey information will also be collected to determine the qualification and extent of the following priority habitat types within the Site:

- Ponds and standing waters - further information is required to ascertain whether the ponds meet any priority habitat criteria, or whether larger bodies of standing water meet the definition of priority habitats (such as ‘eutrophic standing waters’).
- Arable field margins – further botanical survey is required to understand the status of the margins around cropland.

Potential irreplaceable habitats as defined by the NPPF

1.2.5 Mature trees with some veteran features were observed within the Site boundary. These will be assessed further to confirm their status as irreplaceable habitat.

1.2.6 The type, extent and distribution of habitats within the Site were mapped during the habitat survey work and are shown on **Figures 8.B. 1 to 8.B.6. Table 8B.1** present summaries of the habitats found at the Site.

Table 8B.1: Summary of the habitats present at the Site

Habitat	Description	Relevant ecological legislation and policy	Statutory Biodiversity Metric distinctiveness (and score)
Priority Habitats			
Arable Field Margins	The margins of the arable cropland include uncultivated strips of grassland of ca. 2 to 12 m width. Margins are generally dominated by tussocky, coarse grasses. Further assessment of the species composition and management regime is needed to consider whether grassland confirm to the priority habitat descriptions.	S41 ¹ , NPPF ² , Environment Act 2021, Nottinghamshire LBAP	Medium (4)
Floodplain wetland mosaic / Coastal and Floodplain Grazing Marsh Including reedbed priority habitat	An area in the east of the Site, adjacent to the River Trent (refer to Rivers below), was inundated with floodwater at in February 2024. An artificial levee is within this part of the Site and it is anticipated that floodwater may occasionally extend to this during times of spate. The area includes a mosaic of open standing water, modified grassland used for sheep grazing, willow scrub, reedbed, ditches,	S41 NPPF, Environment Act 2021	High (6)

¹ Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006

² National Planning Policy Framework

Habitat	Description	Relevant ecological legislation and policy	Statutory Biodiversity Metric distinctiveness (and score)
	nature trees, and ruderal vegetation.		
Hedgerows	<p>Preliminary assessments indicate that approximately 88 km of hedgerows are within the Site and likely qualify as priority habitat. The following types of hedgerows have been observed: native hedgerow; native hedgerow associated with a ditch or bank; native hedgerows with trees; native hedgerows with trees associated with a ditch or bank; species-rich native hedgerow. Further assessment is needed to determine whether hedgerows qualify as ‘important’ under the Hedgerow Regulations 1997.</p>	S41 NPPF, Environment Act 2021, Hedgerow Regulations 1997	Low to Very High (2-8)
Traditional orchard	A parcel of traditional orchard is shown on the Habitat Inventory within the west of the Site and confirmed via field survey.	S41 NPPF, Environment Act 2021,	High (6)
Woodlands (priority and non-priority)	<p>The following type of woodland are present within the Site and are considered priority woodland: wet woodland, lowland mixed deciduous woodland. The wet woodland is assumed to be present in the east of the Site (not accessed to date due to</p>	S41, NPPF, Environment Act 2021, Nottinghamshire LBAP	Medium – High (4-6)

Habitat	Description	Relevant ecological legislation and policy	Statutory Biodiversity Metric distinctiveness (and score)
	<p>floodwater, requires further assessment).</p> <p>One parcel of lowland mixed deciduous woodland is present in the southeast of the Site ('Fenton Gorse')</p> <p>Woodland is generally formed of copses, 'gorses', and shelter belts. Shelter belt planting has been classed as plantation woodland (which is not considered to qualify as not a priority habitat).</p> <p>Woodlands are generally surrounded by arable land and have signs of being occasionally flailed to prevent encroachment into cropland.</p> <p>No ancient woodland is in the Site or within 1 km of the boundary. The closest ancient woodland is 1.3km to the east of the Site (Burton Wood) and no ancient woodlands have direct habitat connectivity to the Site.</p>		
Ponds and lakes (priority and non-priority)	Aerial imagery indicates that a large waterbody (>35,000m ² area) is present in the east of the Site, adjacent to the River Trent, and may get inundated with floodwater periodically. The	S41, NPPF, Environment Act 2021	Medium to High (4-6)

Habitat	Description	Relevant ecological legislation and policy	Statutory Biodiversity Metric distinctiveness (and score)
	<p>waterbody requires further assessment to determine its habitat class with reference to priority habitat definitions. A series of approximately other smaller waterbodies are to be present within the boundary – further assessment is needed to determine whether the ponds qualify as priority habitat.</p>		
Potential irreplaceable habitats (as defined by NPPF)			
<p>Veteran trees (to be confirmed)</p>	<p>A number of trees within hedgerows were identified as exhibiting veteran features (such as fungal growth, large cavities, deadwood, broken main stem) – these require further assessment with reference to arboricultural survey findings to confirm whether they are of veteran status and qualify as irreplaceable habitats.</p>	<p>NPPF, The Environment Act 2021</p>	<p>(excluded from biodiversity gain, bespoke measures required)</p>
Other habitats			
<p>Cropland</p>	<p>The majority of the Site is formed of arable cropland (primarily winter stubble during the January-February 2024 walkovers). A small number of fields appeared to be sown with a game cover mix</p>	<p>Nottinghamshire LBAP</p>	<p>Low (2)</p>

Habitat	Description	Relevant ecological legislation and policy	Statutory Biodiversity Metric distinctiveness (and score)
	or similar (including mustard species and sunflowers).		
Ditches and culverts	<p>Ditches are present across the Site. Preliminary assessments indicate that almost 13 km of wet ditches are within the Site. It is anticipated that some of these are seasonally wet and are likely to dry over summer.</p> <p>Ditches are generally steep-sided (ca. 45-70° V-cut banks), with water depths of less than 1m.</p> <p>A proportion of the ditches comprise large field drains with widths of water observed at 2m, but may increase during spate. The ditches enter culvert across the Site, generally to facilitate roads and farm tracks.</p>	Nottinghamshire LBAP	Low – Medium (2-4)
Rivers (offsite)	<p>The River Trent is 1-10m from the Site and therefore the river’s supporting riparian habitat is considered to partly intersect the Site.</p> <p>The River is known to flood the eastern edge of the Site.</p>	Nottinghamshire LBAP	High
Grasslands	Pockets of pasture and uncultivated ground are present within the Site. These were considered to primarily comprise	N/A for lower distinctiveness grassland (species poor).	Low – High (2-6)

Habitat	Description	Relevant ecological legislation and policy	Statutory Biodiversity Metric distinctiveness (and score)
	<p>modified grassland, with some partly serving a function as farm tracks. Some parcels had higher species diversity and were characteristic of other neutral grassland. Further survey is required to confirm floral diversity.</p> <p>It is anticipated that higher diversity grassland may be present adjacent to the River Trent – further assessment is needed to classify this grassland (and whether it is a subcomponent of a wetland habitat).</p>	<p>Higher distinctiveness grassland (species rich) could be S41 and / or Nottinghamshire LBAP habitats</p>	
Scrub	<p>Pockets of scrub are present across the Site, generally in the corners of fields or adjacent to ditches. Scrub is generally formed of blackthorn, bramble, or a mixture woody native species.</p>	N/A	Medium (6)
Urban habitats	<p>The following urban habitats have been recorded on Site to date:</p> <p>Bare ground – such as recently re-profiled areas of ground within agricultural land</p> <p>Developed land; sealed surface – such as surfaced roads or</p>	N/A	Very low – Low (0-2)

Habitat	Description	Relevant ecological legislation and policy	Statutory Biodiversity Metric distinctiveness (and score)
	buildings. Four buildings have been recorded within the Site to date.		

1.3 References

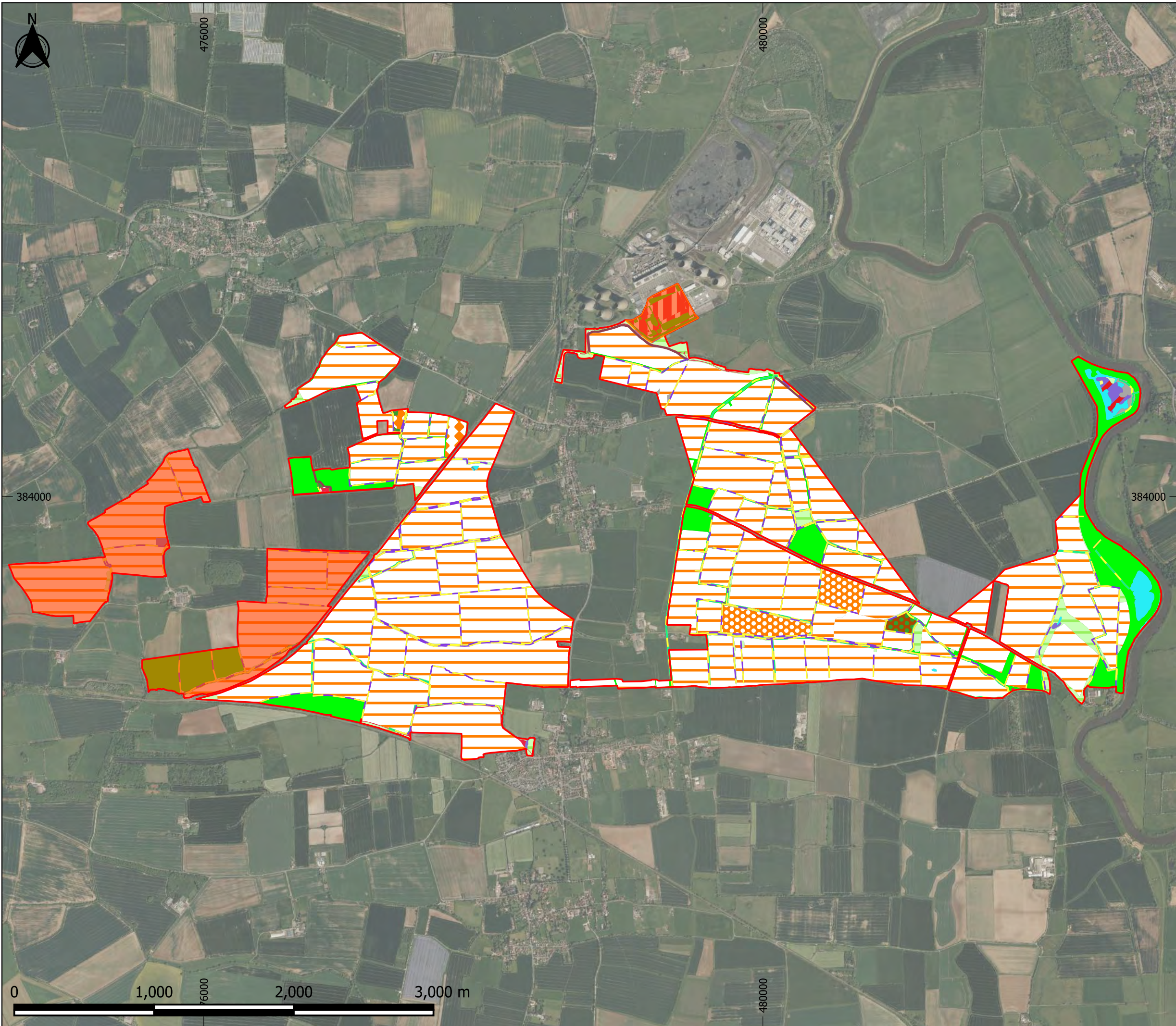
Defra (2024) MAGIC Interactive Map [online] Available at:

<https://magic.defra.gov.uk/MagicMap.aspx>

Maddock, A. (ed.) (2011) 'UK Biodiversity Action Plan; Priority Habitat Descriptions'.

Natural England (2014). 'Otters: surveys and mitigation for development projects.' Natural England and Department for Environment, Food & Rural Affairs, Worcester. Available at <https://www.gov.uk/guidance/otters-protection-surveys-and-licences>

1.4 Figures



- Legend
- Native Hedgerow
 - Built linear features
 - Ditches
 - Ruderal/Ephemeral
 - Traditional orchards
 - Vacant/derelict land/ bareground
 - Cereal crops
 - Non-cereal crops
 - Horticulture
 - Reedbeds
 - Other neutral grassland
 - Modified grassland
 - Scrub
 - Ponds
 - Temporary lakes, ponds and pools
 - Developed land; sealed surface
 - Artificial unvegetated, unsealed surface
 - Other woodland; broadleaved
 - Other woodland; mixed
 - Site boundary
 - No Access - Mapped from PRow and aerial photography



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PROJECT TITLE
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Figure 8.B: Existing Habitat Plan

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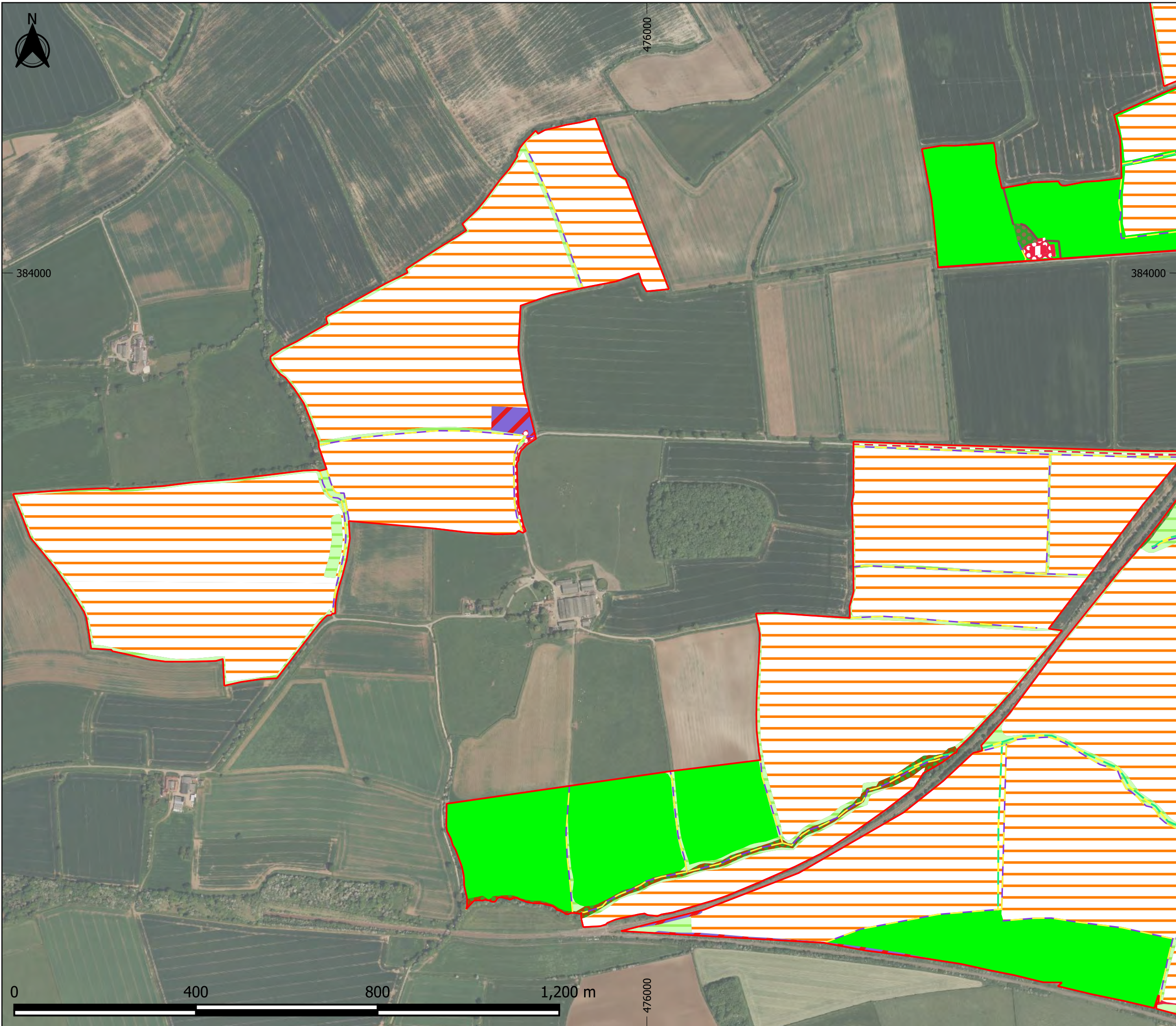
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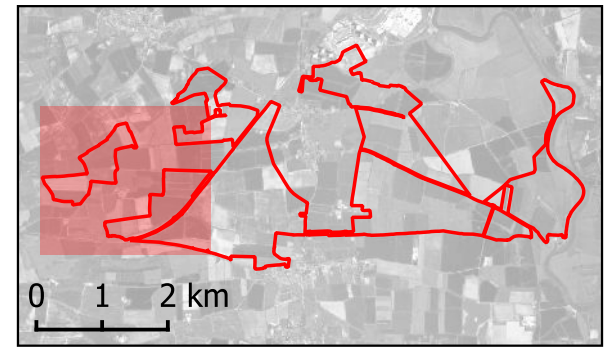
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- Legend
-  Built linear features
 -  Ditches
 -  Vacant/derelict land/ bareground
 -  Cereal crops
 -  Other neutral grassland
 -  Modified grassland
 -  Developed land; sealed surface
 -  Artificial unvegetated, unsealed surface
 -  Other woodland; broadleaved
 -  Other woodland; mixed
 -  Site boundary



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Figure 8.B.1: Existing Habitat Plan

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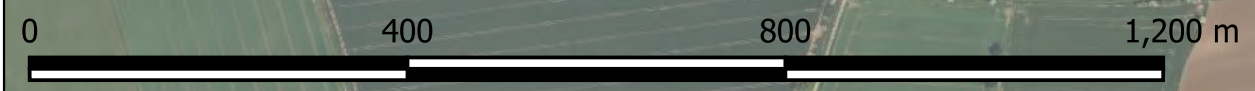
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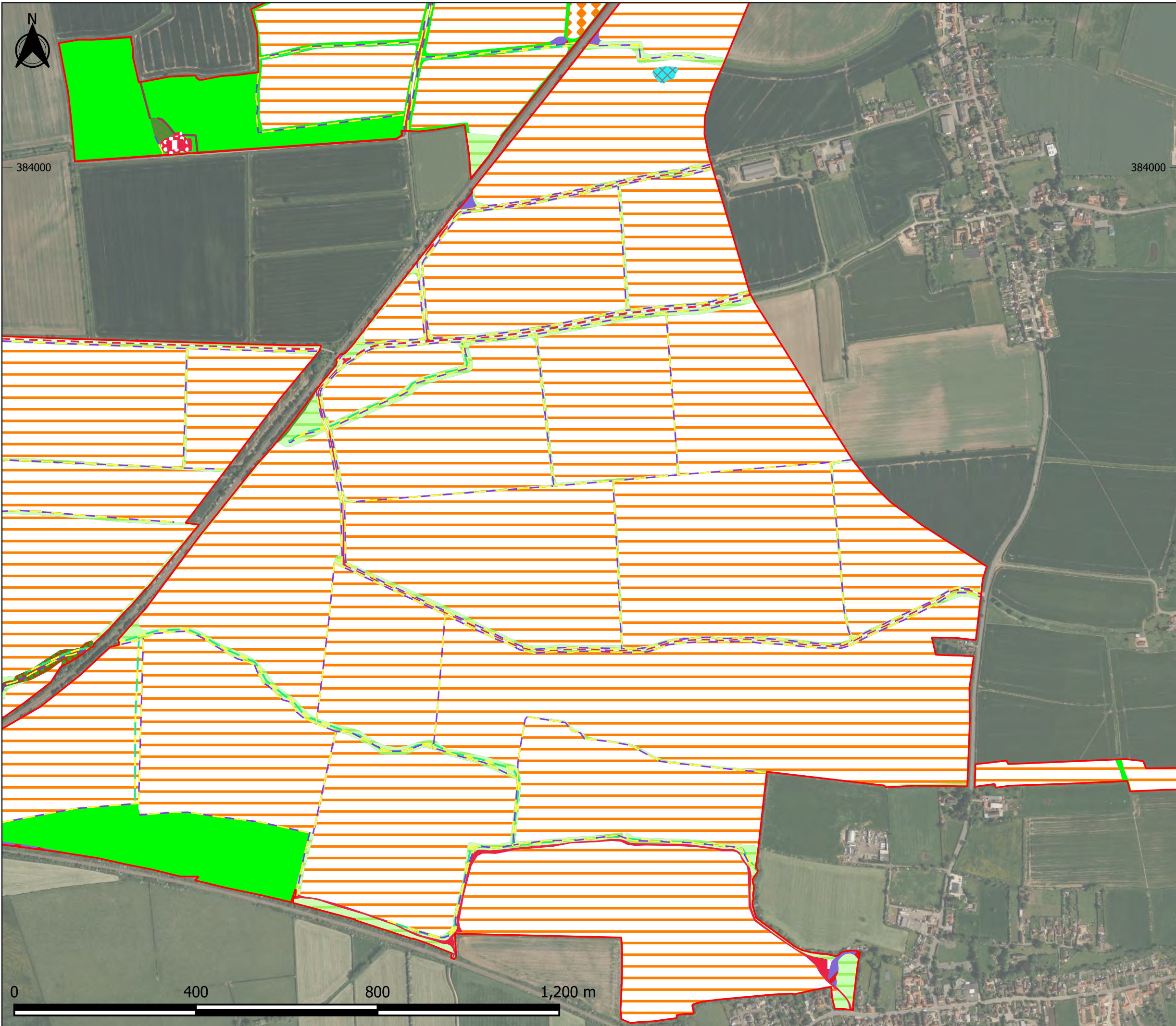
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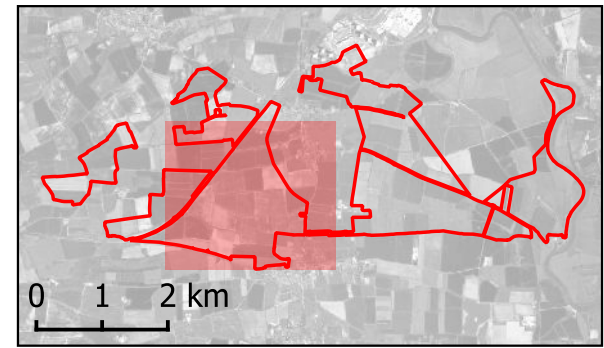
Sources: BSG Ecology survey data



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- Legend
-  Built linear features
 -  Ditches
 -  Vacant/derelict land/ bareground
 -  Cereal crops
 -  Horticulture
 -  Other neutral grassland
 -  Modified grassland
 -  Temporary lakes, ponds and pools
 -  Developed land; sealed surface
 -  Artificial unvegetated, unsealed surface
 -  Other woodland; broadleaved
 -  Other woodland; mixed
 -  Site boundary



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Figure 8.B.2: Existing Habitat Plan

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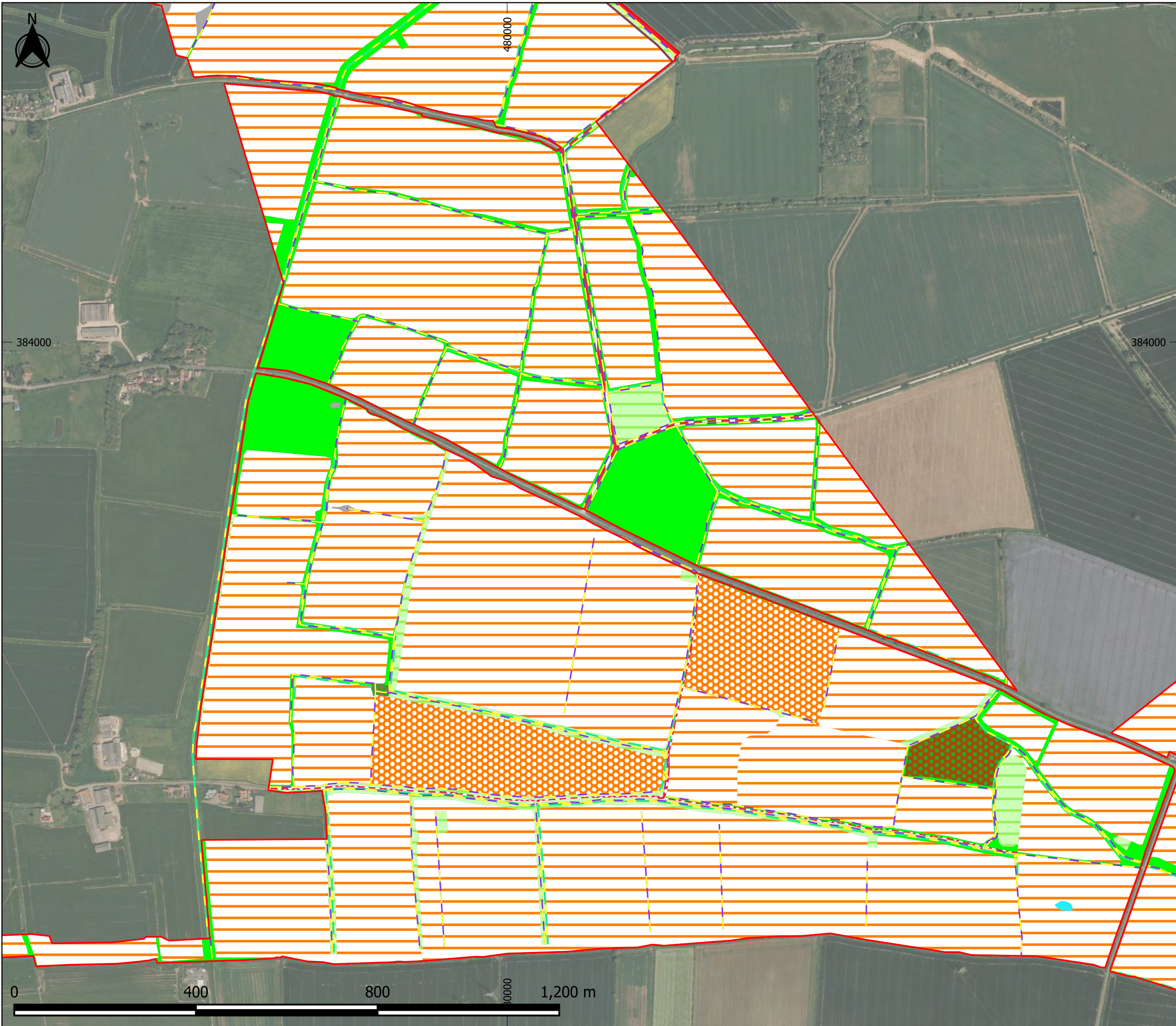
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- Legend
- Native Hedgerow
 - Built linear features
 - Ditches
 - Ruderal/Ephemeral
 - Vacant/derelict land/ bareground
 - Cereal crops
 - Non-cereal crops
 - Other neutral grassland
 - Modified grassland
 - Developed land; sealed surface
 - Artificial unvegetated, unsealed surface
 - Other woodland; broadleaved
 - Other woodland; mixed
 - Site boundary



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Figure 8.B.3: Existing Habitat Plan

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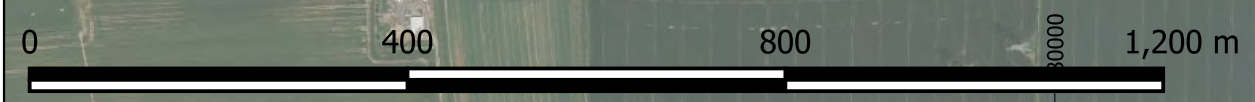
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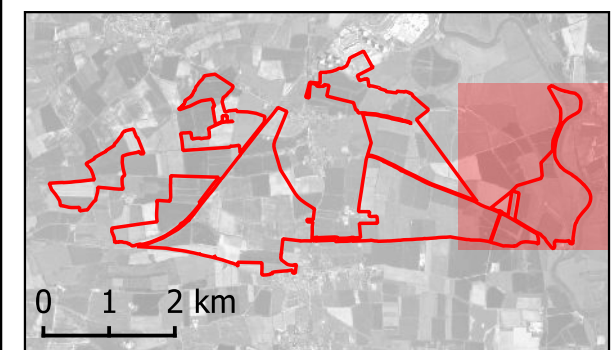
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- Legend
- Ditches
 - Ruderal/Ephemeral
 - Vacant/derelict land/ bareground
 - Cereal crops
 - Reedbeds
 - Other neutral grassland
 - Modified grassland
 - Scrub
 - Ponds
 - Artificial unvegetated, unsealed surface
 - Other woodland; mixed
 - Site boundary



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Figure 8.B.4: Existing Habitat Plan

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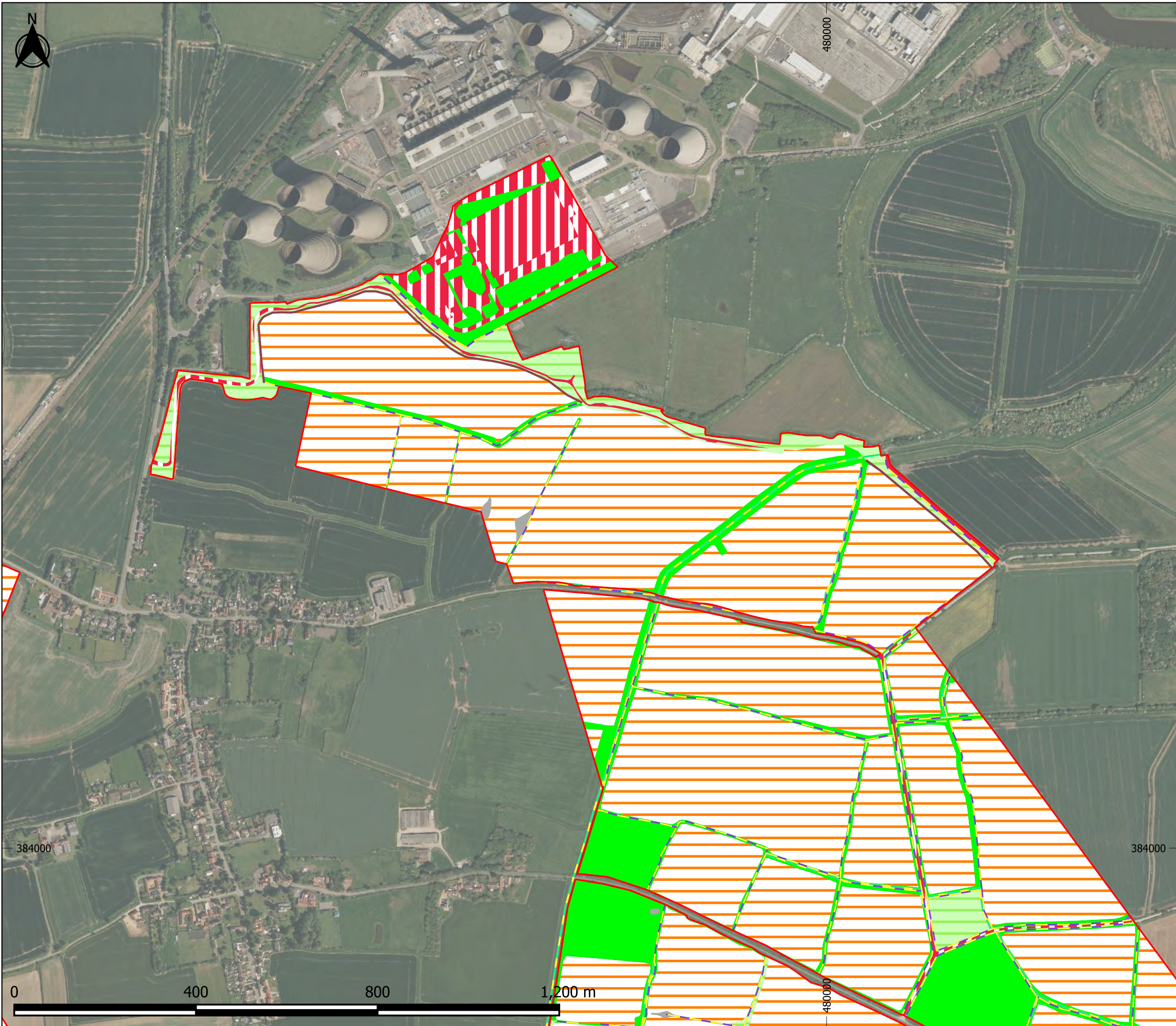
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- Legend
-  Native Hedgerow
 -  Built linear features
 -  Ditches
 -  Ruderal/Ephemeral
 -  Vacant/derelict land/ bareground
 -  Cereal crops
 -  Other neutral grassland
 -  Modified grassland
 -  Developed land; sealed surface
 -  Site boundary



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



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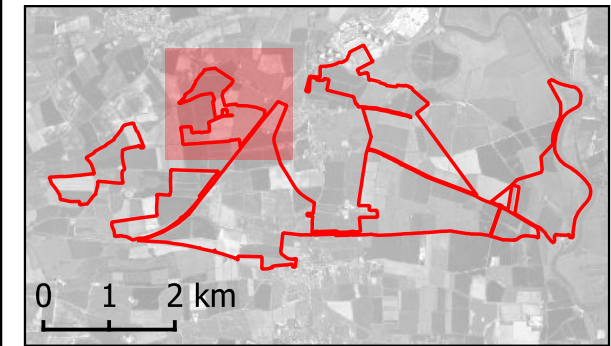
Sources: BSG Ecology survey data

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Legend

-  Built linear features
-  Ditches
-  Traditional orchards
-  Cereal crops
-  Horticulture
-  Other neutral grassland
-  Modified grassland
-  Temporary lakes, ponds and pools
-  Developed land; sealed surface
-  Artificial unvegetated, unsealed surface
-  Other woodland; broadleaved
-  Site boundary



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Steeple Renewables Project

Environmental Impact Assessment Scoping Report
Appendix 8C: Breeding Bird Characterisation Survey

Land at Sturton-le-Steeple, Nottinghamshire

Prepared by: BSG Ecology



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Figures

Figure 8.C.1 Survey area of the 2023 breeding bird characteristics survey

Figure 8.C.2a-h Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

1. Appendix 8C: Breeding Bird Characterisation Survey

1.1 Methodology

1.1.1 Breeding bird characterisation surveys were undertaken between March and July 2023 within the survey area (as shown on Figure 8.C.1) being subject one morning visit per month, and one dusk / crepuscular survey in June 2023. Owing to the size of the survey area, each survey was split over three to five days, as presented in Table 8.C.1.

1.1.2 During each visit, the surveyor walked across the survey area scanning all habitats present (within the survey boundary and the immediate surrounding area) using binoculars as required. Frequent stops were made to listen and scan for singing, calling, and displaying birds. Birds observed beyond the boundary were also noted. Bird locations were mapped, and behaviour recorded using standard British Trust for Ornithology (BTO) codes and symbols.

Table 8.C.1: Dates of breeding bird characterisation survey visits and weather conditions

Date	Cloud Cover (Oktas)	Precipitation	Wind (Beaufort)	Visibility
28.03.23	6	0	2	Excellent
29.03.23	6	0	2	Excellent
30.03.23	5	0	2	Excellent
21.04.23	8	Occasional showers	3	Excellent
22.04.23	5	Occasional showers	1	Excellent
23.04.23	6	Occasional showers	2	Excellent
20.05.23	2	0	1	Excellent
21.05.23	2	0	1	Excellent
22.05.23	5	0	1	Excellent
23.05.23	6	0	2	Excellent
19.06.23	4	0	2	Excellent
19.06.23 (evening)	4	0	1	Excellent

Date	Cloud Cover (Oktas)	Precipitation	Wind (Beaufort)	Visibility
20.06.23	6	0	1	Excellent
21.06.23	5	0	2	Excellent
21.06.23 (evening)	5	0	2	Excellent
22.06.23	4	0	2	Excellent
23.06.23	4	0	1	Excellent
23.06.23 (evening)	5	0	2	Excellent
11.07.23	4	Occasional showers	2	Excellent
12.07.23	4	Occasional showers	2	Excellent
13.07.23	6	Occasional showers	2	Excellent

1.1.3 Birds exhibiting breeding behaviour will be assigned to one of two categories: likely breeding or confirmed breeding:

- Likely breeding: birds heard singing or alarm calling or simply present in suitable breeding habitat on one of the survey visits; a pair of birds present in suitable breeding habitat; a repeat observation of territorial behaviour (song or alarm calling) on two or more different visits in the same location; courtship behaviour or display in suitable breeding habitat; birds apparently visiting a nest site; or evidence of nest building (including excavation of a hole).
- Confirmed breeding: one or more adults undertaking a distraction display; the presence of a used nest or eggshells; the presence of recently fledged or downy young (that are clearly of local origin); apparently incubating adults or adults commuting to and from a nest hole; adult birds carrying faecal sacs or food for young; or, a nest with eggs or young present.

1.1.4 The conservation status of each species of bird is taken into account and with species present on the following lists a priority for recording bird territories:

- The Wildlife and Countryside Act 1981 (as amended), Schedule 1.

- Species of Principal Importance (SPI) for the Conservation of Biodiversity in England as listed in accordance with section 41 of the Natural Environment and Rural Communities Act (NERC) 2006 (S41).
- Species of high and medium conservation concern ('red listed' and amber listed species respectively) included in Birds of Conservation Concern 3 (Eaton et al., 2021).

1.1.5 For the purpose of this technical annex, analysis of breeding territories for skylark as been completed, based on the field data collected to date, in line with the methodology outlined above.

1.1.6 Draft findings for other species is provided below, which indicates the presence of a species during the breeding season only (i.e. only the confirmed presence of the species has been indicated, no analysis of the breeding status has been undertaken).

Consideration of potential limitations

1.1.7 Full access to the Site was not available during the breeding bird characterisation surveys, and this work was limited to surveying from public rights of way only. There is an extensive network of public rights of way across the Site which has allowed much of the Site to be accessed, although certain areas were not accessible. The Site is comprised of large, flat open arable fields which did allow for good visual observations to be made, particularly of species within the arable fields that are more detectable this way such as skylark. Whilst the 2023 breeding bird survey was constrained by the access restrictions, it has provided a useful baseline of the breeding bird assemblage at the Site.

1.1.8 Modifications to the Site boundary following the completion of the 2023 breeding bird surveys has resulted in the removal of certain surveyed areas, and the inclusion of areas that were not surveyed (refer to **Figure 8.C.1**). However, the main areas impacted by the Proposed Solar Areas have remained similar, and the main area that was not surveyed during 2023 is identified for biodiversity mitigation (Eastern Biodiversity Mitigation Area).

1.1.9 The breeding bird characterisation survey will be repeated in 2024 and will cover the entire Order Limits, and with full access permissions, and therefore these limitations are not considered to be significant.

Personnel

1.1.10 The breeding bird characterisation surveys were undertaken by Andrew Cockroft. Andrew is an experienced ornithological surveyor who regularly undertakes breeding and wintering bird surveys based on established methodologies.

1.2 Results

Table 8.C.2: Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird characterisation surveys

Common name	Scientific name	Estimated no. of territories			Conservation status* ²
		Proposed Solar Area	Western Biodiversity Mitigation Area	Eastern Biodiversity Mitigation Area* ¹	
Skylark	<i>Alauda arvensis</i>	✓ (115)	✓ (17)	✓ (0)	Red listed; (Farmland Birds Action Plan); SPI

*¹ It should be noted that much of the Eastern Biodiversity Mitigation area was outside of the survey area.

*² Red / Amber / Green listed= Birds of Conservation Concern (Eaton et al., 2021) listing assesses bird species on the basis of their population status, reflecting changes in their abundance and range. Red list species are of high nature conservation concern; Amber list species are of medium conservation concern.

SPI = Species of Principal under the provisions of the NERC Act 2006

Table 8.C.3: Summary of results from the breeding bird characterisation surveys (providing presence information only, the numbers show the total registrations for the survey period, not the number of territories)

BTO Code	Common name	Scientific name	Bird presence (and count of registrations from March to July 2023)			Conservation status*
			Proposed Solar Area	Western Biodiversity Mitigation Area	Eastern Biodiversity Mitigation Area*	
B.	Blackbird	<i>Turdus merula</i>	√(81)	√(9)		Green listed
BC	Blackcap	<i>Sylvia atricapilla</i>	√(1)	√(5)		Green listed
BF	Bullfinch	<i>Pyrrhula pyrrhula</i>	√(7)			Amber listed, SPI
BO	Barn Owl	<i>Tyto alba</i>	√(9)		√(1)	Green listed, Sch1
BT	Blue Tit	<i>Cyanistes caeruleus</i>	√(3)	√(1)		Green listed
BZ	Buzzard	<i>Buteo buteo</i>	√(15)	√(2)		Green listed
C.	Carrion Crow	<i>Corvus corone</i>	√(93)			Green listed
CC	Chiffchaff	<i>Phylloscopus collybita</i>	√(3)	√(2)		Green listed
CH	Chaffinch	<i>Fringilla coelebs</i>	√(38)	√(7)		Green listed
CU	Curlew	<i>Numenius arquata</i>	√(3)			Red listed, SPI
D.	Dunnock	<i>Prunella modularis</i>	√(15)	√(1)		Amber listed, SPI
ET	Little Egret	<i>Egretta garzetta</i>	√(2)			Green listed
G.	Green Woodpecker	<i>Picus viridis</i>	√(1)			Green listed
GJ	Greylag Goose	<i>Anser anser</i>	√(11)			Amber listed
GO	Goldfinch	<i>Carduelis carduelis</i>	√(48)	√(26)		Green listed
GR	Greenfinch	<i>Chloris chloris</i>	√(4)			Red listed
GT	Great Tit	<i>Parus major</i>	√(1)			Green listed
H.	Grey Heron	<i>Ardea cinerea</i>	√(2)			Green listed
JD	Jackdaw	<i>Coloeus monedula</i>	√(108)			Green listed
K.	Kestrel	<i>Falco tinnunculus</i>	√(17)		√(1)	Amber listed
LB	Lesser Black-backed Gull	<i>Larus fuscus</i>	√(7)			Amber listed
LI	Linnet	<i>Linaria cannabina</i>	√(80)	√(14)		Red listed, SPI
LO	Little Owl	<i>Athene noctua</i>	√(4)	√(1)		Green listed

BTO Code	Common name	Scientific name	Bird presence (and count of registrations from March to July 2023)			Conservation status*
			Proposed Solar Area	Western Biodiversity Mitigation Area	Eastern Biodiversity Mitigation Area*	
LT	Long-tailed Tit	<i>Aegithalos caudatus</i>	√(21)			Green listed
LW	Lesser Whitethroat	<i>Curruca curruca</i>	√(1)	√(1)		Green listed
MA	Mallard	<i>Anas platyrhynchos</i>	√(41)			Amber listed
MG	Magpie	<i>Pica pica</i>	√(16)			Green listed
MP	Meadow Pipit	<i>Anthus pratensis</i>		√(16)		Amber listed
MS	Mute Swan	<i>Cygnus olor</i>	√(1)			Amber listed
P.	Grey Partridge	<i>Perdix perdix</i>	√(3)			Red listed
PH	Pheasant	<i>Phasianus colchicus</i>	√(17)	√(1)		Green listed
PW	Pied Wagtail	<i>Motacilla alba</i>		√(6)		Green listed
R.	Robin	<i>Erithacus rubecula</i>	√(22)	√(2)		Green listed
RB	Reed Bunting	<i>Emberiza schoeniclus</i>	√(31)			Amber listed, SPI
RL	Red-legged Partridge	<i>Alectoris rufa</i>	√(45)	√(10)		Green listed
RO	Rook	<i>Corvus frugilegus</i>	√(130)	√(14)		Amber listed
SD	Stock Dove	<i>Columba oenas</i>	√(25)			Amber listed
SG	Starling	<i>Sturnus vulgaris</i>	√(35)			Red listed, SPI
SH	Sparrowhawk	<i>Accipiter nisus</i>	√(1)			Amber listed
SL	Barn Swallow	<i>Hirundo rustica</i>	√(4)			Green listed
ST	Song Thrush	<i>Turdus philomelos</i>		√(8)		Amber listed, SPI
T.	Teal	<i>Anas crecca</i>	√(2)			Amber listed
TO	Tawny Owl	<i>Strix aluco</i>	√(2)			Amber listed
W.	Northern Wheatear	<i>Oenanthe oenanthe</i>	√(2)	√(2)		Amber listed
WH	Whitethroat	<i>Curruca communis</i>	√(17)	√(8)	√(1)	Amber listed

BTO Code	Common name	Scientific name	Bird presence (and count of registrations from March to July 2023)			Conservation status*
			Proposed Solar Area	Western Biodiversity Mitigation Area	Eastern Biodiversity Mitigation Area*	
WP	Woodpigeon	<i>Columba palumbus</i>	√(140)			Amber listed
WR	Wren	<i>Troglodytes troglodytes</i>	√(19)	√(8)		Amber listed
WW	Willow Warbler	<i>Phylloscopus trochilus</i>	√(6)			Amber listed, SPI
Y.	Yellowhammer	<i>Emberiza citrinella</i>	√(104)	√(16)		Red listed, SPI
YW	Yellow Wagtail	<i>Motacilla flava</i>	√(30)	√(3)		Red listed, SPI

*1 It should be noted that much of the Eastern Biodiversity Mitigation area was outside of the survey area.

*2 Red / Amber / Green listed= Birds of Conservation Concern (Eaton et al., 2021) listing assesses bird species on the basis of their population status, reflecting changes in their abundance and range. Red list species are of high nature conservation concern; Amber list species are of medium conservation concern.

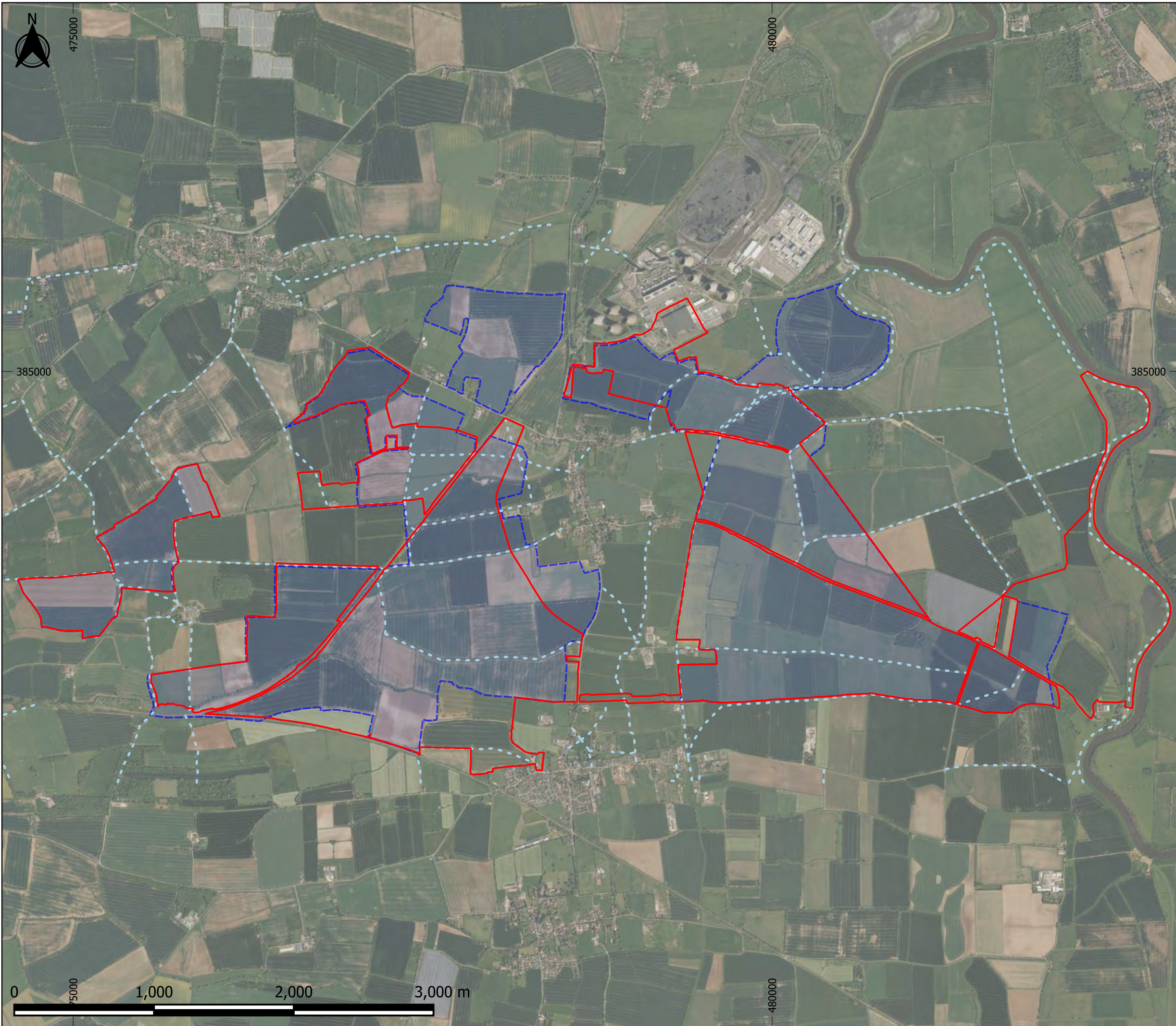
SPI = Species of Principal under the provisions of the NERC Act 2006

Sch1 - Birds listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)

1.3 References

Eaton, M.A., et al. (2021). 'The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain'. *British Birds* 114: 723-747.

1.4 Figures



Legend

- Breeding bird characterisation 2023 survey boundary
- Site boundary
- Public Rights of Way (PRoW)

Note: the 2023 breeding bird characterisation surveys were undertaken from PRoW only.



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Figure 8.C.1: Survey area of the 2023 breeding bird characterisation surveys

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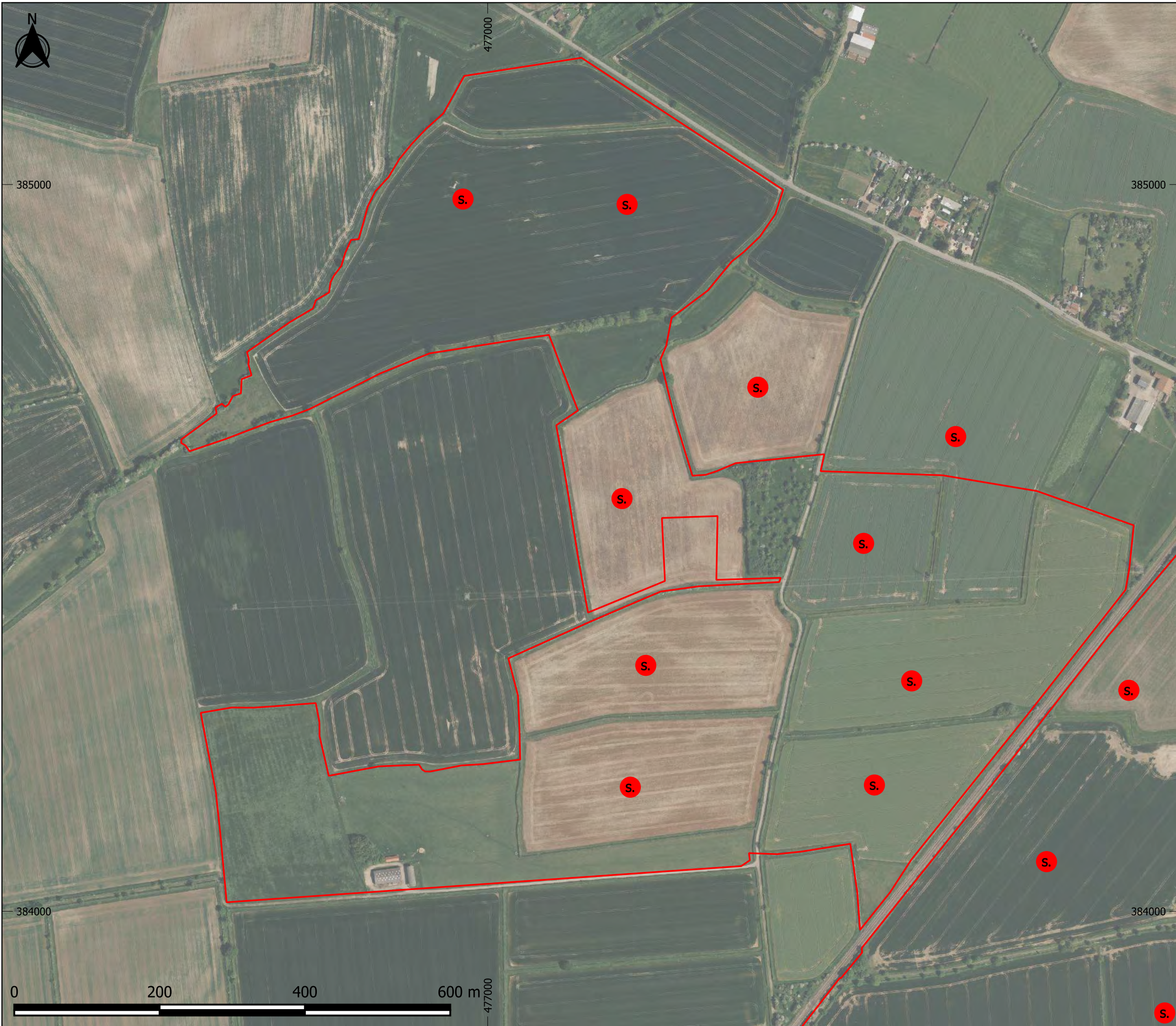
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- Legend
- S. Confirmed breeding or likely breeding skylark
 - Site boundary



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Figure 8.C.2a: Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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Figure 8.C.2b: Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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Figure 8.C.2c: Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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- Legend
- S. Confirmed breeding or likely breeding skylark
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Figure 8.C.2d(1): Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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- Legend
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Figure 8.C.2d(2): Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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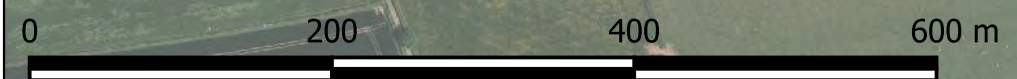
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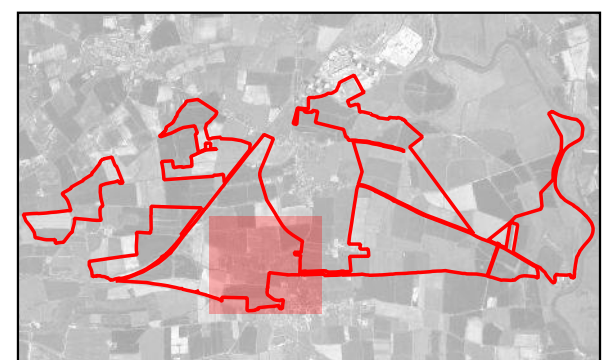
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- Legend
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Figure 8.C.2d(3): Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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Figure 8.C.2e(1): Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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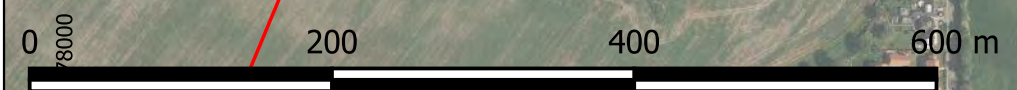
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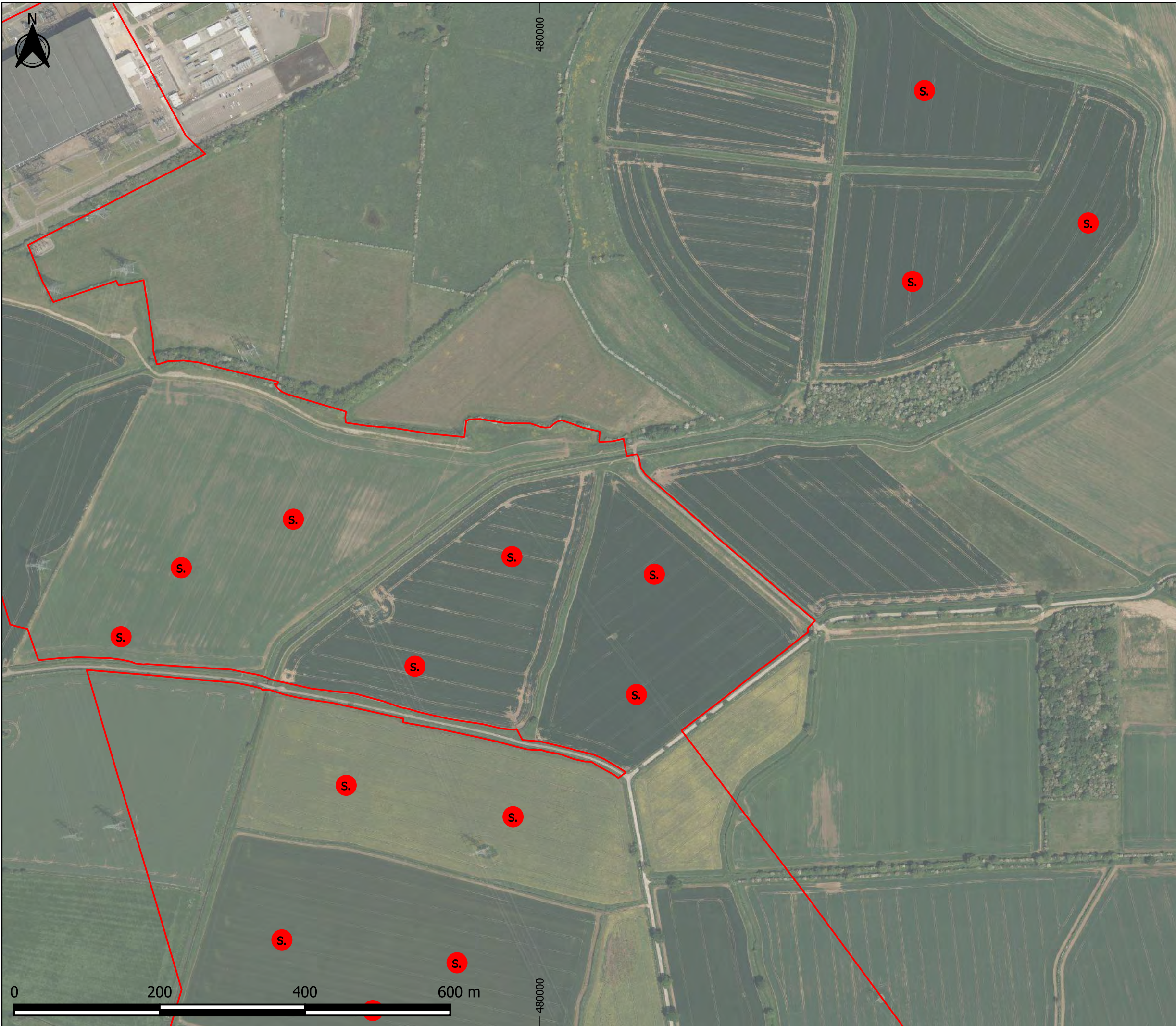
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Figure 8.C.2e(2): Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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Figure 8.C.2e(3): Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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Figure 8.C.2f(1): Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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Figure 8.C.2f(2): Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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Figure 8.C.2g: Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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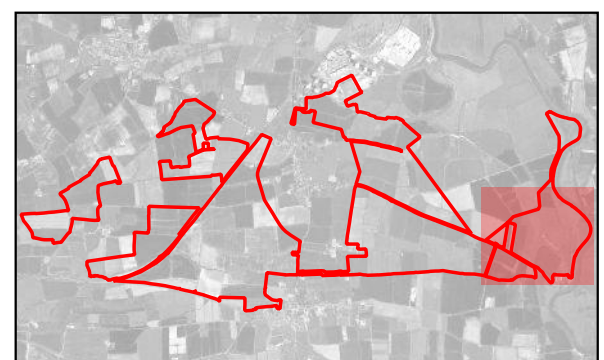
Projection: OSGB 1936/British National Grid - EPSG 27700

Sources: BSG Ecology survey data

Graphics Ref. No.: 106129



- Legend
- S. Confirmed breeding or likely breeding skylark
 - Site boundary



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PROJECT TITLE
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DRAWING TITLE
Figure 8.C.2h: Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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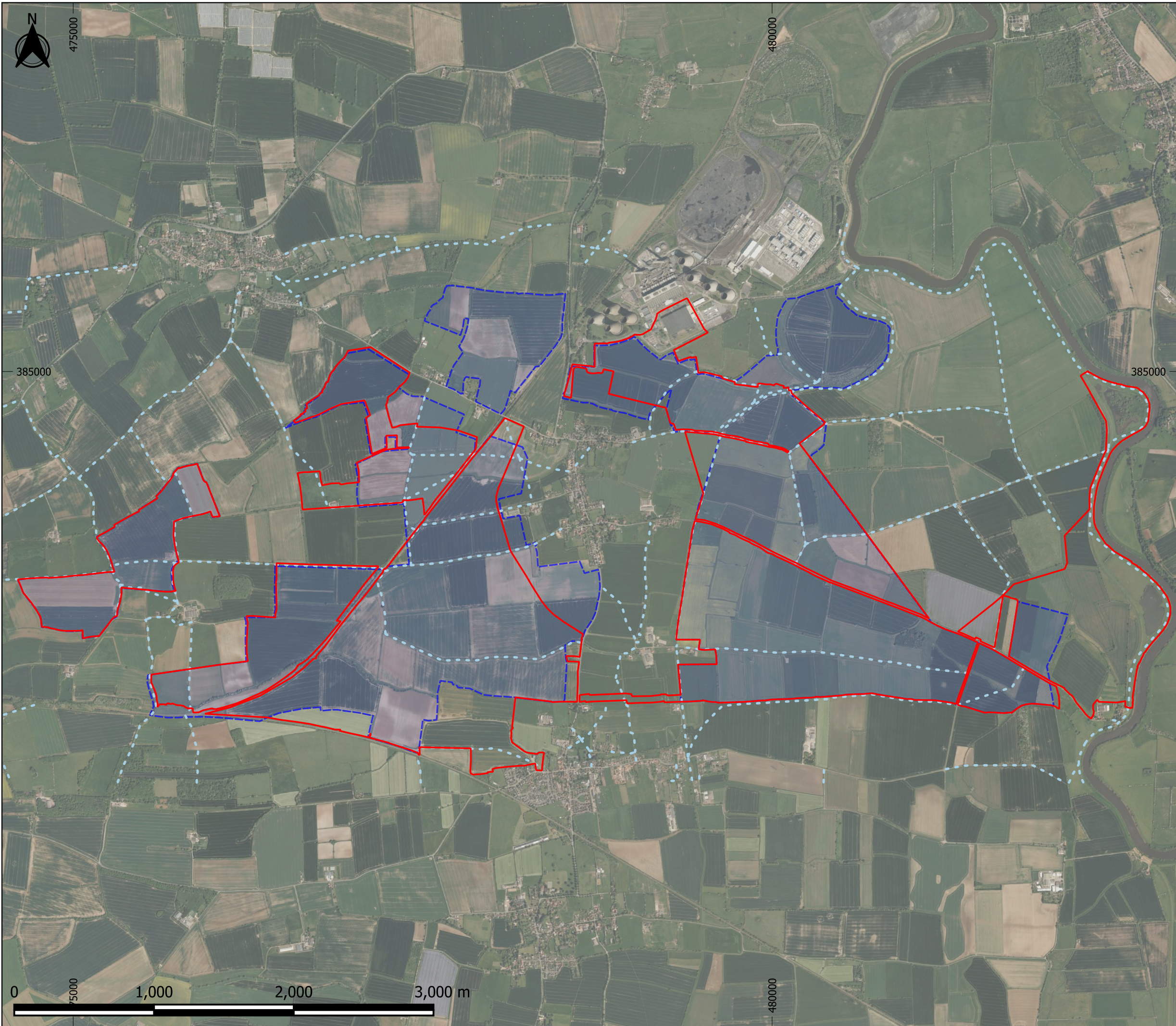
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Legend

- Breeding bird characterisation 2023 survey boundary
- Site boundary
- Public Rights of Way (PRoW)

Note: the 2023 breeding bird characterisation surveys were undertaken from PRoW only.



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PROJECT TITLE
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DRAWING TITLE
Figure 8.C.1: Survey area of the 2023 breeding bird characterisation surveys

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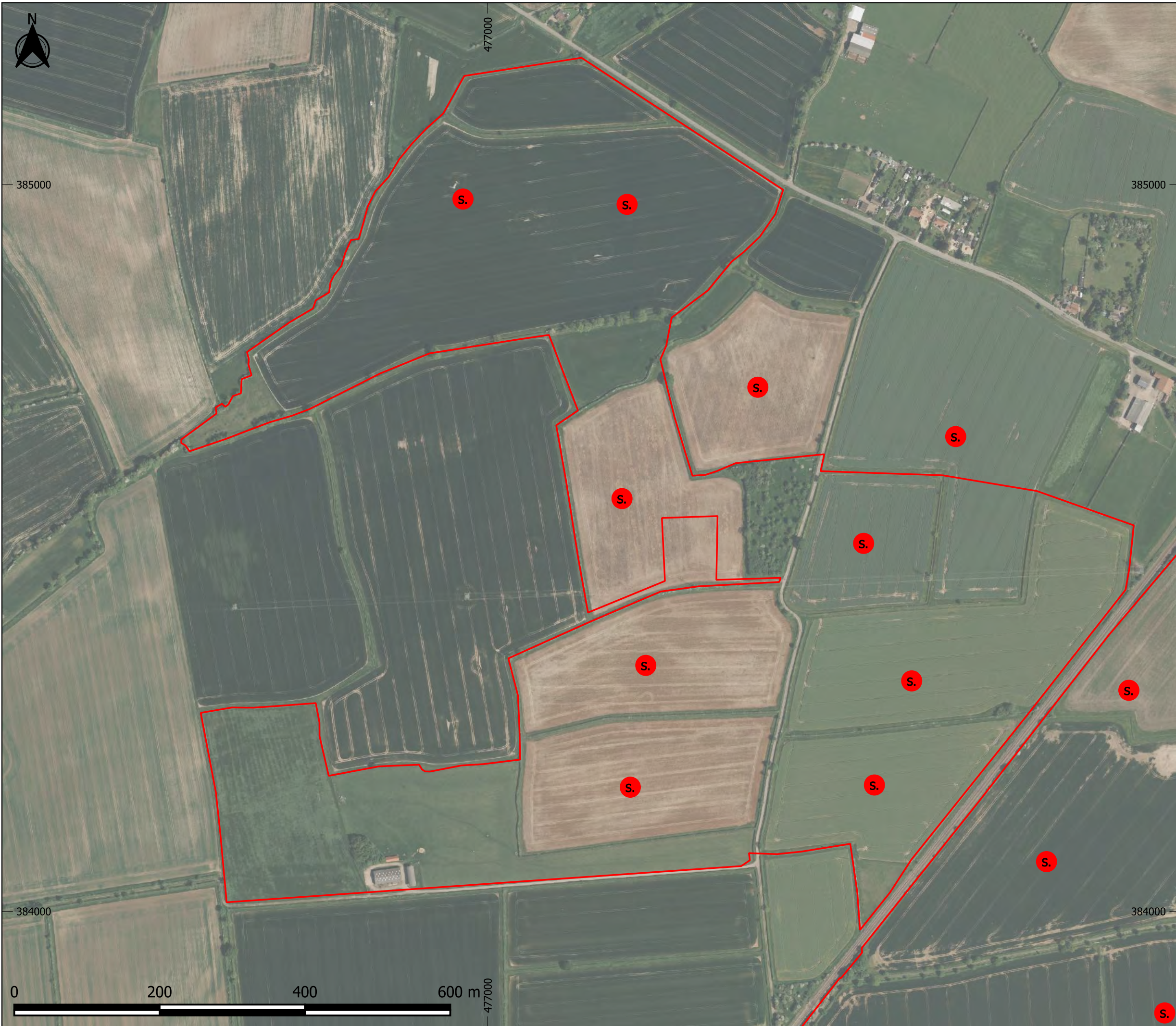
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Sources: BSG Ecology survey data

Graphics Ref. No.: 06196



- Legend
- S. Confirmed breeding or likely breeding skylark
 - Site boundary



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PROJECT TITLE
STEEPLE RENEWABLES PROJECT

DRAWING TITLE
Figure 8.C.2a: Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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Sources: BSG Ecology survey data

Graphics Ref. No.: 06117



- Legend
- S. Confirmed breeding or likely breeding skylark
 - Site boundary



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PROJECT TITLE
STEEPLE RENEWABLES PROJECT

DRAWING TITLE
Figure 8.C.2b: Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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- Legend
- S. Confirmed breeding or likely breeding skylark
 - Site boundary



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PROJECT TITLE
STEEPLE RENEWABLES PROJECT

DRAWING TITLE
Figure 8.C.2c: Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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Sources: BSG Ecology survey data

Graphics Ref. No.: 105120



- Legend
- S. Confirmed breeding or likely breeding skylark
 - Site boundary



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PROJECT TITLE
STEEPLE RENEWABLES PROJECT

DRAWING TITLE
Figure 8.C.2d(1): Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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Sources: BSG Ecology survey data

Graphics Ref. No.: 06121



- Legend
- S. Confirmed breeding or likely breeding skylark
 - Site boundary



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PROJECT TITLE
STEEPLE RENEWABLES PROJECT

DRAWING TITLE
Figure 8.C.2d(2): Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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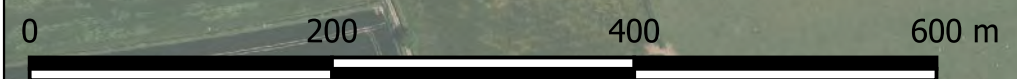
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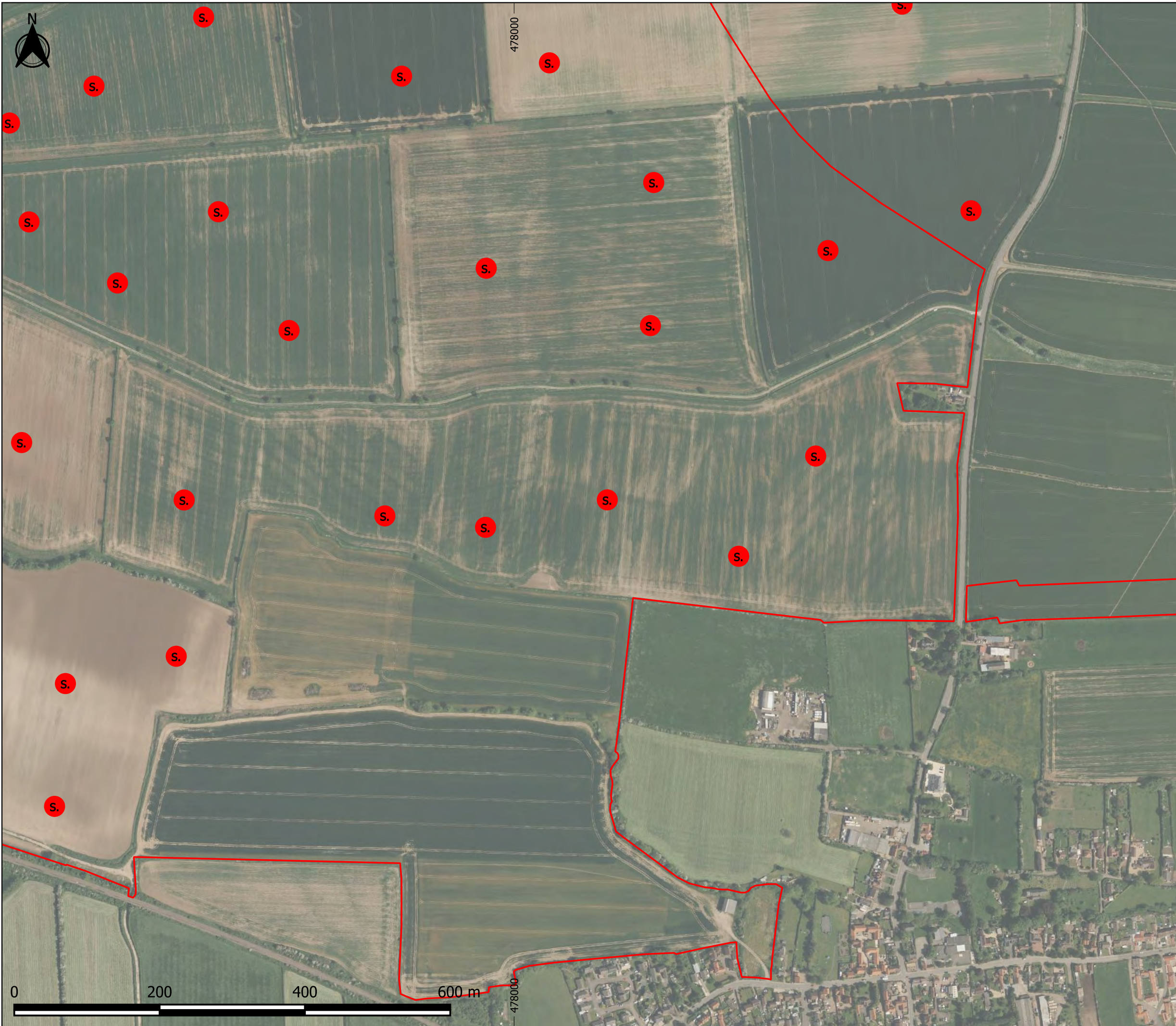
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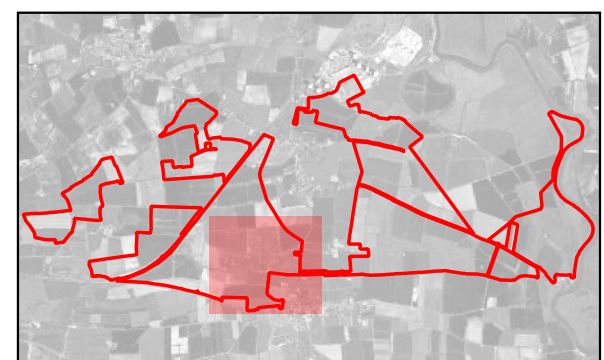
Sources: BSG Ecology survey data



Graphics Ref. No.: 06122



- Legend
- S. Confirmed breeding or likely breeding skylark
 - Site boundary



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PROJECT TITLE
STEEPLE RENEWABLES PROJECT

DRAWING TITLE
Figure 8.C.2d(3): Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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Legend

- S. Confirmed breeding or likely breeding skylark
- Site boundary



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PROJECT TITLE
STEEPLE RENEWABLES PROJECT

DRAWING TITLE
Figure 8.C.2e(1): Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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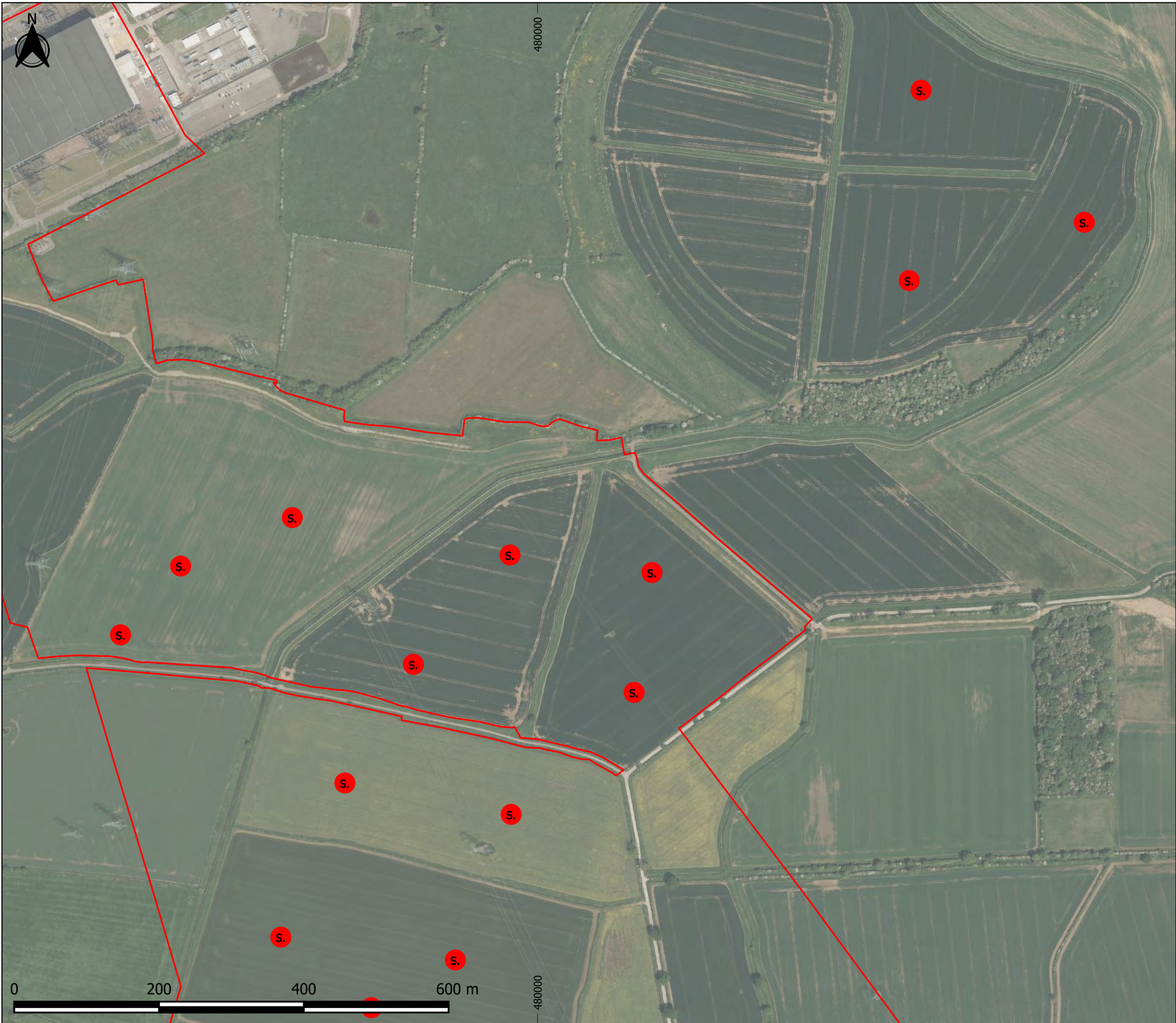
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Legend

- S. Confirmed breeding or likely breeding skylark
- Site boundary



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PROJECT TITLE
STEEPLE RENEWABLES PROJECT

DRAWING TITLE
Figure 8.C.2e(2): Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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- Legend
- S. Confirmed breeding or likely breeding skylark
 - Site boundary



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DRAWING TITLE
Figure 8.C.2e(3): Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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- Legend
- S. Confirmed breeding or likely breeding skylark
 - Site boundary



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PROJECT TITLE
STEEPLE RENEWABLES PROJECT

DRAWING TITLE
Figure 8.C.2f(1): Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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Sources: BSG Ecology survey data

Graphics Ref. No.: 106126



- Legend
- S. Confirmed breeding or likely breeding skylark
 - Site boundary



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PROJECT TITLE
STEEPLE RENEWABLES PROJECT

DRAWING TITLE
Figure 8.C.2f(2): Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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- Legend
- S. Confirmed breeding or likely breeding skylark
 - Site boundary



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PROJECT TITLE
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DRAWING TITLE
Figure 8.C.2g: Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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- Legend
- S. Confirmed breeding or likely breeding skylark
 - Site boundary



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PROJECT TITLE
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DRAWING TITLE
Figure 8.C.2h: Summary of confirmed breeding or likely breeding skylark from the 2023 breeding bird surveys

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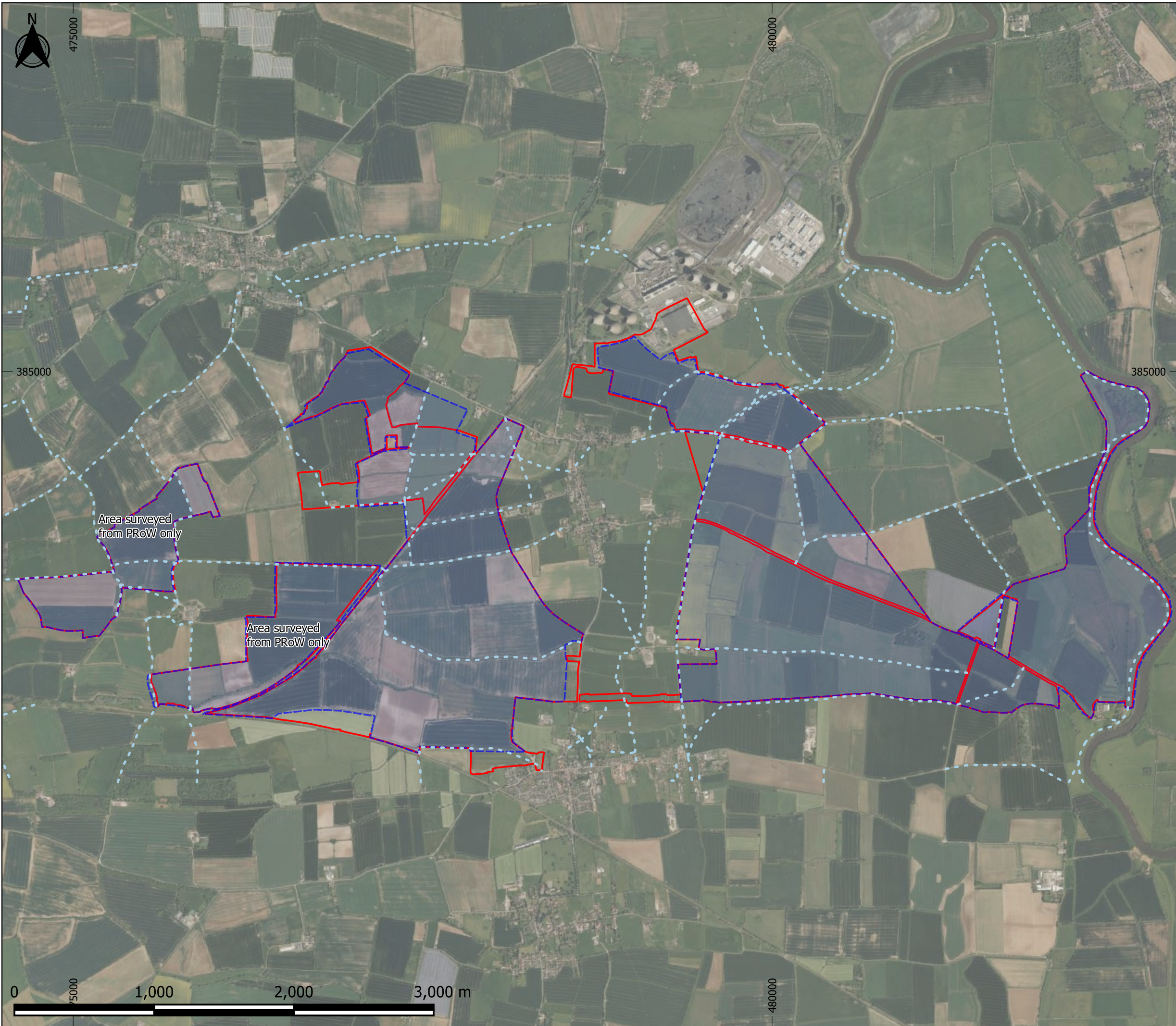
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- Legend
- Wintering bird characterisation 2023-24 survey boundary
 - Site boundary
 - Public Right of Way (PRoW)

Area surveyed from PRoW only

Area surveyed from PRoW only

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PROJECT TITLE
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DRAWING TITLE
Figure 8.D.1: Survey area of the 2023-24 wintering bird surveys

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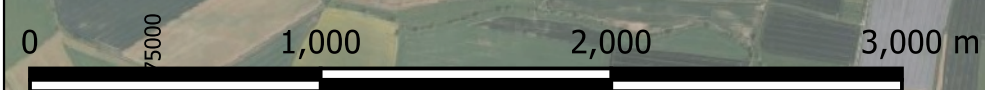
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Steeple Renewables Project

Environmental Impact Assessment Scoping Report
Appendix 8D: Wintering Bird Characterisation Survey

Land at Sturton-le-Steeple, Nottinghamshire

Prepared by: BSG Ecology



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Figure 8.D.1 Survey area of the 2023-24 wintering bird survey

1. Appendix 8D: Wintering Bird Characterisation Survey

1.1 Methodology

1.1.1 Characterisation surveys of the wintering bird community were undertaken between October 2023 and March 2024 with one visit per month. Owing to the size of the survey area, each survey was split over five days, as presented in **Table 8.D.1**, which shows the survey details.

1.1.2 During each visit, the surveyor walked across the survey area scanning all habitats present (within the survey boundary and the immediate surrounding area) using binoculars as required. Frequent stops were made to listen and scan for birds. Birds observed beyond the boundary were also noted. Bird locations were mapped and behaviour recorded using standard British Trust for Ornithology (BTO) codes and symbols (Gilbert, G., Gibbons, D.W. & Evans, J., 1998).

Table 8.D.1: Dates of breeding bird characterisation survey visits and weather conditions

Date	Cloud Cover (Oktas)	Precipitation	Wind (Beaufort)	Visibility
23.10.23	8	None	1	Misty morning then excellent
24.10.23	8	Showers	3	Fair
25.10.23	3	None	2	Excellent
26.10.23	3	Light drizzle	2	Fair
27.10.23	3	Showers	2	Mist early morning
20.11.23	4	None	1	Excellent
21.11.23	8	Occasional light rain	3	Excellent
22.11.23	8	None	1	Excellent
23.11.23	7	None	3	Excellent
24.11.23	5	None	2	Excellent
11.12.23	2	None	2	Excellent
12.12.23	8	None	2	Fair

Date	Cloud Cover (Oktas)	Precipitation	Wind (Beaufort)	Visibility
13.12.23	8	Occasional heavy showers	3	Misty morning then excellent
14.12.23	4	None	2	Excellent
15.12.23	4	None	2	Excellent
08.01.24	8	None	2	Excellent
09.01.24	6	None	2	Excellent
10.01.24	7	None	2	Excellent
11.01.24	8	Light rain	2	Excellent
12.01.24	8	Light drizzle	2	Excellent
05.02.24	5	None	3	Excellent
06.02.24	8	Light rain	4	Excellent
07.02.24	2	None	2	Excellent
08.02.24	8	Snow showers	3	Poor
09.02.24	4	light rain	3	Fair
04.03.24	8	None	3	Excellent
05.03.24	7	None	2	Excellent
06.03.24	8	None	2	Excellent
07.03.24	8	None	2	Fair
08.03.24	8	None	3	Fair

1.1.3 The conservation status of each species of bird was taken into account and with species present on the following lists a priority for recording behaviour:

- The Wildlife and Countryside Act 1981 (as amended), Schedule 1.
- Species of Principal Importance (SPI) for the Conservation of Biodiversity in England as listed in accordance with section 41 of the Natural Environment and Rural Communities Act (NERC) 2006 (S41).
- Species of high and medium conservation concern (red and amber listed species respectively) included in Birds of Conservation Concern 3 (Eaton et al., 2021).

Consideration of potential limitations

- 1.1.4 Full access was not possible to two areas of Site (as shown on **Figure 8.D.1**) and these were surveyed from public rights of way; these areas are largely identified as being for biodiversity enhancements. The remainder of the Site had full access available, including the majority of the areas that are identified for the Proposed Solar Areas.
- 1.1.5 Minor modifications to the Site boundary following the completion of the wintering bird surveys has resulted in the removal of certain surveyed areas, and the inclusion of some small areas that were not surveyed. However, the main areas impacted by the Proposed Solar Areas have remained similar.
- 1.1.6 These limitations are not considered to be significant, as the majority of the Site, including the areas to be impacted by the Proposed Solar Areas, were extensively surveyed. The wintering bird characterisation survey is considered to be robust and has enabled the identification of any protected or sensitive ornithological receptors.

Personnel

- 1.1.7 The wintering bird characterisation surveys were undertaken by Andrew Cockroft. Andrew is an experienced ornithological surveyor who regularly undertakes breeding and wintering bird surveys based on established methodologies.

1.2 Results

- 1.2.1 The results from the October to December 2023 surveys have been digitised and tabulated below. The remaining survey data from the January to March 2024 visits are pending analysis and digitisation.
- 1.2.2 The results of the surveys have been considered with respect to the Proposed Solar Areas, the Western Biodiversity Mitigation Area and the Eastern Biodiversity Mitigation Area. The Conservation Status has been considered with reference to Birds of Conservation Concern red lists and amber lists (Eaton et al., 2021). The conservation status, presence and estimated count of bird registrations are presented in **Table 8.D.1**.
- 1.2.3 A total of 58 bird species were recorded within the Proposed Solar Areas from October to December 2023. These included a variety of species, of which 15 are 'red list' and a further 20 are 'amber list' (refer to **Table 8.D.2**).

- 1.2.4 Compared to the Proposed Solar Areas, an additional 27 species were recorded within the Eastern Biodiversity Mitigation Site, which had a total of 57 species recorded overall. This area supports a greater diversity of wetland birds and waders than does the Proposed Solar Area. Of the additional 27 species in the Eastern Biodiversity Mitigation Area, six are 'red list' species (dunlin, hen harrier, house sparrow, lapwing, mistle thrush, and pochard) and nine are amber list species (refer to **Table 8.D.2** for the full list).
- 1.2.5 The Western Biodiversity Mitigation Site had a total count of 28 species observed from October to December 2023. The majority were also observed in the Proposed Solar Areas; there were three species in the Western Biodiversity Area not being recorded within the Proposed Solar Areas- house sparrow, long-tailed tit, and mistle thrush.

Table 8.D.1: The confirmed presence (✓), estimated count of registrations (shown in brackets), and conservation status for birds within the Proposed Solar Areas and in the Biodiversity Mitigation Areas between October and December 2023

BTO Code	Common name	Scientific name	October			November			December			Conservation status*
			Proposed Solar Area	Western Biodiversity Mitigation Area	Eastern Biodiversity Mitigation Area	Proposed Solar Area	Western Biodiversity Mitigation Area	Eastern Biodiversity Mitigation Area	Proposed Solar Area	Western Biodiversity Mitigation Area	Eastern Biodiversity Mitigation Area	
B.	Blackbird	<i>Turdus merula</i>	✓(20)	✓(4)	✓(6)	✓(37)	✓(1)	✓(9)	✓(70)	✓(3)	✓(9)	Green listed
BH	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	✓(211)	-	-	✓(75)	✓(17)	-	✓(118)	-	-	Amber listed
BT	Blue Tit	<i>Cyanistes caeruleus</i>	✓(7)	✓(1)	✓(2)	✓(2)	-	-	✓(10)	✓(4)	-	Green listed
BZ	Buzzard	<i>Buteo buteo</i>	✓(6)	-	✓(1)	✓(6)	-	✓(2)	✓(9)	✓(1)	✓(1)	Green listed
C.	Carrion Crow	<i>Corvus corone</i>	-	-	-	✓(70)	-	✓(7)	✓(81)	✓(20)	✓(8)	Green listed
CA	Cormorant	<i>Phalacrocorax carbo</i>	-	-	✓(3)	-	-	-	-	-	✓(3)	Green listed
CG	Canada Goose	<i>Branta canadensis</i>	✓(3)	-	-	✓(1)	-	-	-	-	-	Green listed
CH	Chaffinch	<i>Fringilla coelebs</i>	✓(48)	✓(10)	-	✓(17)	-	-	✓(36)	-	✓(9)	Green listed
CM	Common Gull	<i>Larus canus</i>	✓(14)	-	-	✓(9)	-	-	✓(456)	-	-	Amber listed
CO	Coot	<i>Fulica atra</i>	-	-	-	-	-	-	-	-	✓(6)	Green listed
CT	Coal Tit	<i>Periparus ater</i>	✓(2)	-	-	-	-	-	-	-	-	Green listed
D.	Dunnock	<i>Prunella modularis</i>	✓(1)	-	-	✓(4)	✓(1)	✓(1)	✓(5)	-	✓(2)	Amber listed
DN	Dunlin	<i>Calidris alpina</i>	-	-	-	-	-	-	-	-	✓(2)	Red listed
ET	Little Egret	<i>Egretta garzetta</i>	✓(6)	-	✓(2)	✓(1)	-	✓(1)	-	-	✓(4)	Green listed

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FF	Fieldfare	<i>Turdus pilaris</i>	√(90)	√(160)	-	√(310)	-	√(160)	√(65)	-	√(80)	Red listed
G.	Green Woodpecker	<i>Picus viridis</i>	-	-	-	-	-	-	-	-	√(1)	Green listed
GA	Gadwall	<i>Mareca strepera</i>	-	-	-	-	-	√(1)	-	-	√(12)	Amber listed
GB	Great Black-backed Gull	<i>Larus marinus</i>	-	-	-	-	-	-	√(2)	-	-	Amber listed
GC	Goldcrest	<i>Regulus regulus</i>	-	-	-	√(1)	-	-	-	-	-	Green listed
GJ	Greylag Goose	<i>Anser anser</i>	√(8)	-	-	√(15)	-	√(42)	√(11)	-	-	Amber listed
GO	Goldfinch	<i>Carduelis carduelis</i>	√(46)	-	-	√(39)	-	√(3)	√(117)	√(7)	√(8)	Green listed
GR	Greenfinch	<i>Chloris chloris</i>	√(4)	-	-	√(1)	-	-	√(12)	-	-	Red listed
GP	Golden Plover	<i>Pluvialis apricaria</i>	-	-	-	-	-	-	-	-	√(8)	Green listed
GS	Great Spotted Woodpecker	<i>Dendrocopos major</i>	-	-	-	-	-	-	-	-	√(1)	Green listed
GT	Great Tit	<i>Parus major</i>	√(3)	-	√(2)	-	-	√(2)	√(5)	√(6)	-	Green listed
GW	Garden Warbler	<i>Sylvia borin</i>	-	-	√(12)	-	-	-	-	-	-	Green listed
H.	Grey Heron	<i>Ardea cinerea</i>	√(2)	-	√(5)	√(6)	-	√(2)	√(4)	-	√(3)	Green listed
HG	Herring Gull	<i>Larus argentatus</i>	√(15)	-	-	√(3)	-	-	√(14)	-	-	Red listed
HH	Hen Harrier	<i>Circus cyaneus</i>	-	-	√(1)	√(1)	-	-	√(1)	-	-	Red listed
HS	House Sparrow	<i>Passer domesticus</i>	-	√(8)	√(18)	-	√(7)	√(22)	√(3)	√(8)	√(4)	Red listed
HW	Great White Egret	<i>Ardea alba</i>	-	-	√(1)	-	-	-	-	-	-	Amber listed

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JD	Jackdaw	<i>Coloeus monedula</i>	-	-	-	√(22)	-	√(9)	√(76)	-	√(30)	Green listed
K.	Kestrel	<i>Falco tinnunculus</i>	√(4)	√(2)	√(3)	√(5)	√(2)	√(4)	√(7)	√(3)	√(3)	Amber listed
L.	Lapwing	<i>Vanellus vanellus</i>	-	-	√(80)	-	-	√(43)	-	-	-	Red listed
LB	Lesser Black-backed Gull	<i>Larus fuscus</i>	√(30)	-	-	√(23)	-	-	√(6)	-	-	Amber listed
LG	Little Grebe	<i>Tachybaptus ruficollis</i>	-	-	√(1)	-	-	√(3)	-	-	√(2)	Green listed
LI	Linnet	<i>Linaria cannabina</i>	√(157)	-	-	√(37)	-	-	√(326)	-	√(385)	Red listed
LO	Little Owl	<i>Athene noctua</i>	-	-	-	√(1)	-	-	-	-	-	Green listed
LT	Long-tailed Tit	<i>Aegithalos caudatus</i>	√(12)	-	√(7)	-	√(8)	√(8)	-	-	-	Green listed
M.	Mistle Thrush	<i>Turdus viscivorus</i>	√(3)	-	√(1)	-	-	√(3)	-	√(2)	-	Red listed
MA	Mallard	<i>Anas platyrhynchos</i>	√(5)	-	√(15)	√(8)	-	√(18)	√(5)	-	√(11)	Red listed
MG	Magpie	<i>Pica pica</i>	√(2)	-	√(3)	-	-	√(6)	√(14)	√(2)	-	Green listed
MH	Moorhen	<i>Gallinula chloropus</i>	-	-	√(4)	√(6)	-	√(2)	-	-	√(2)	Amber listed
ML	Merlin	<i>Falco columbarius</i>	√(1)	-	-	-	-	-	-	-	-	Red listed
MP	Meadow Pipit	<i>Anthus pratensis</i>	√(39)	√(9)	-	-	-	-	√(19)	√(6)	-	Amber listed

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MR	Marsh Harrier	<i>Circus aeruginosus</i>	-	-	-	-	-	√(1)	-	-	-	Amber listed
MS	Mute Swan	<i>Cygnus olor</i>	√(2)	-	√(11)	-	-	√(40)	√(4)	-	√(13)	Amber listed
P.	Grey Partridge	<i>Perdix perdix</i>	√(2)	-	-	√(4)	-	√(1)	√(2)	-	-	Red listed
PE	Peregrine	<i>Falco peregrinus</i>	-	-	-	√(2)	-	-	-	-	-	Green listed
PG	Pink-footed Goose	<i>Anser brachyrhynchus</i>	√(39)	-	-	-	-	-	-	-	-	Amber listed
PH	Pheasant	<i>Phasianus colchicus</i>	√(27)	√(11)	√(15)	√(30)	√(5)	-	√(45)	√(9)	√(8)	Green listed
PO	Pochard	<i>Aythya ferina</i>	-	-	√(1)	-	-	-	-	-	-	Red listed
PW	Pied Wagtail	<i>Motacilla alba</i>	√(57)	-	√(17)	√(2)	√(2)	√(2)	√(79)	-	√(4)	Green listed
R.	Robin	<i>Erithacus rubecula</i>	√(5)	-	√(2)	√(26)	√(1)	√(2)	√(13)	-	-	Green listed
RB	Reed Bunting	<i>Emberiza schoeniclus</i>	√(21)	√(2)	-	√(11)	√(2)	-	√(50)	√(3)	√(10)	Amber listed
RE	Redwing	<i>Turdus iliacus</i>	√(16)	-	-	√(62)	-	-	√(10)	--	√(20)	Amber listed
RL	Red-legged Partridge	<i>Alectoris rufa</i>	√(95)	√(14)	√(10)	√(92)	√(9)	-	√(49)	-	-	Green listed
RO	Rook	<i>Corvus frugilegus</i>	√(25)	-	-	√(32)	√(7)	-	√(21)	√(15)	√(10)	Green listed
RU	Ruff	<i>Anser rossii</i>	√(1)	-	-	-	-	-	-	-	-	Red listed
S.	Skylark	<i>Alauda arvensis</i>	√(137)	√(37)	√(10)	√(42)	√(2)	√(4)	√(40)	√(2)	-	Red listed
SC	Stonechat	<i>Saxicola rubicola</i>	√(6)	-	-	√(2)	-	-	-	-	-	Green listed
SD	Stock Dove	<i>Columba oenas</i>	-	-	√(2)	√(15)	√(11)	√(6)	√(14)	-	√(8)	Amber listed

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SE	Short-eared Owl	<i>Asio flammeus</i>	-	-	-	√(2)	-	-	-	-	-	Amber listed
SG	Starling	<i>Sturnus vulgaris</i>	√(770)	√(770)	√(1700)	√(1645)	√(48)	√(1200)	√(1188)	√(140)	-	Red listed
SH	Sparrowhawk	<i>Accipiter nisus</i>	√(1)	-	√(2)	√(2)	-	√(1)	-	-	-	Amber listed
SI	Swift	<i>Apus apus</i>	-	-	-	√(2)	-	-	-	-	-	Red listed
SN	Snipe	<i>Gallinago gallinago</i>	√(4)	-	-	√(10)	-	√(8)	√(14)	-	-	Amber listed
ST	Song Thrush	<i>Turdus philomelos</i>	√(1)	-	-	√(1)	-	-	√(1)	-	-	Amber listed
SV	Shoveler	<i>Spatula clypeata</i>	-	-	√(6)	-	-	-	-	-	√(14)	Amber listed
T.	Teal	<i>Anas crecca</i>	-	-	√(2)	-	-	√(3)	-	-	√(13)	Amber listed
TU	Tufted Duck	<i>Aythya fuligula</i>	-	-	-	-	-	-	-	-	√(6)	Green listed
WN	Wigeon	<i>Mareca penelope</i>	-	-	√(24)	-	-	√(236)	-	-	√(525)	Amber listed
WP	Woodpigeon	<i>Columba palumbus</i>	√(361)	-	√(2)	√(353)	√(72)	√(67)	√(645)	√(80)	√(25)	Amber listed
WR	Wren	<i>Troglodytes troglodytes</i>	√(5)	√(1)	√(2)	√(9)	√(1)	√(1)	√(3)	-	-	Amber listed
Y.	Yellowhammer	<i>Emberiza citrinella</i>	√(90)	√(6)	-	√(12)	√(4)	√(7)	√(75)	√(10)	√(23)	Red listed

* Red / Amber / Green listed= Birds of Conservation Concern (Eaton *et al.*, 2021) listing assesses bird species on the basis of their population status, reflecting changes in their abundance and range. Red list species are of high nature conservation concern; Amber list species are of medium conservation concern.

Bold = indicated species associated with the Humber Estuary Ramsar Site Ramsar Criterion 6 (species occurring at levels of international importance)

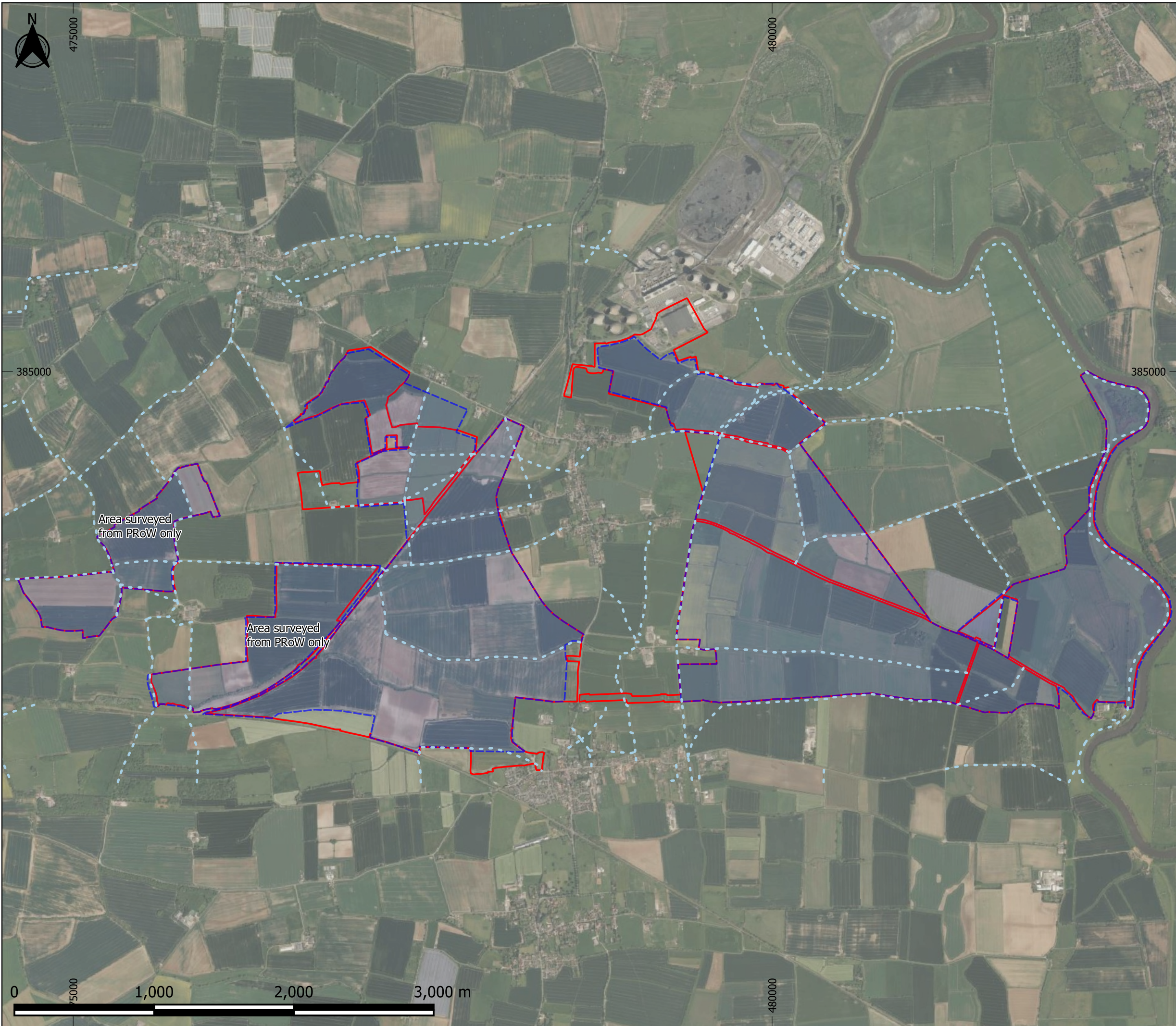
1.3 References

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1.4 Figures



- Legend
- Wintering bird characterisation 2023-24 survey boundary
 - Site boundary
 - Public Right of Way (PRoW)

Area surveyed from PRoW only

Area surveyed from PRoW only

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PROJECT TITLE
STEEPLE RENEWABLES PROJECT

DRAWING TITLE
Figure 8.D.1: Survey area of the 2023-24 wintering bird surveys

DATE: 26/03/2024 CHECKED: EM SCALE: 1:26,000
 DRAWN: CS APPROVED: DF VERSION:1.0

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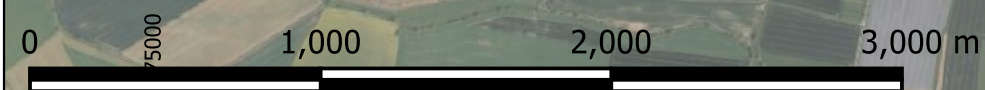
No dimensions are to be scaled from this drawing and are to be checked on site. Area measurements for indicative purposes only.

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Sources: BSG Ecology survey data



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