

**Tillbridge Solar Project  
EN010142**

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Environmental Statement  
Appendix 9-7: Baseline Report for Breeding Birds  
Part 1 of 2  
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## Executive Summary

- ES-1. The objective of this assessment for breeding birds was to determine the presence and assemblage of breeding bird species within the Study Area, with emphasis on species of conservation concern.
- ES-2. A desk study was undertaken as part of the Preliminary Ecological Appraisal in July 2022 (Ref 15) to gather records of protected and notable bird species occurring within a 2km radius of the Order limits, through Greater Lincolnshire Nature Partnership (GLNP) and Nottinghamshire Biological and Geological Records Centre (NBGRC). Only records up to ten years old 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. This desk study returned records of 99 bird species.
- ES-3. As set out in **Chapter 3: Scheme Description** of this Environmental Statement (ES) [EN010142/APP/6.1], the Scheme has worked collaboratively with Gate Burton Energy Park, Cottam Solar Project and West Burton Solar Project to minimise environmental impacts along the Cable Route Corridor by using a shared route, where practicable. To minimise disturbance to wildlife and landowners, through repeated access by multiple schemes, where relevant, the Applicant has collaborated with the other proposed developments to 'share' data and data was received from these schemes on the presence and location of breeding bird species within the Cable Route Corridor.
- ES-4. Field surveys were undertaken between April and July 2022 (five survey visits), supplemented by additional surveys to previously inaccessible areas between April and June 2023. These surveys recorded 77 species and a breeding assemblage of 55 species. From the breeding assemblage of 55 bird species, 30 species (including specially protected species) meet at least one of a range of criteria relating to conservation importance. The breeding assemblage of 55 species would place the value of the Order limits as being of county importance for breeding birds.
- ES-5. Fourteen species, recorded during field surveys or identified as occurring within the Cable Route Corridor are listed as a priority species in the UK Biodiversity Action Plan and as a species of principal importance under Section 41 of the NERC Act, 12 species are included on the Birds of Conservation Concern Red list and 15 species are included on the Birds of Conservation Concern Amber list.
- ES-6. No species were present within the survey area in numbers of national significance, i.e. 1% or more of the UK population, when compared to national population estimates as given in a paper by Woodward et al. (2020).
- ES-7. A single breeding pair of Curlew is likely to represent a significant proportion of the Lincolnshire breeding population, however, the Order limits on its own is not considered to represent a significant resource for the species in isolation, but in recognition of forming part of a breeding territory or home range the Order limits is of importance to breeding Curlew at District scale. The population of Skylark within the Order limits is likely to be of district

importance in West Lindsey. Furthermore, territories of Black Redstart, identified through the datasets provided by Gate Burton Solar Farm, is likely to represent a significant proportion (i.e. greater than 1%) of this species' population in Nottinghamshire.

- ES-8. No other species recorded in the Survey Area were recorded in a figure approaching 1% of the county breeding population estimates in Lincolnshire or Nottinghamshire as the numbers of individuals recorded were all relatively low and did not represent significant proportions (i.e. 1 % or more) of the county populations in both counties.
- ES-9. Confidential information regarding the locations of any sensitive breeding species recorded, which are included on Schedule 1 of the Wildlife and Countryside Act (1981, as amended) are included separately as confidential Annex C and will be provided to key stakeholders separately.

# 1. Introduction

## 1.1 Background

- 1.1.1 This report forms a technical appendix to the Environmental Statement (ES) [EN010142/APP/6.1], specifically to accompany **Chapter 9: Ecology and Nature Conservation** of this ES [EN010142/APP/6.2]. This report provides information on the presence, distribution and abundance of breeding bird species, relevant to the Tillbridge Solar project, hereafter referred to as the Scheme, including the results of surveys undertaken within the Order limits.
- 1.1.2 Breeding territory locations and information for bird species that are included on Annex 1 of the Birds Directive (Ref 2) or listed on Schedule 1 of the Wildlife and Countryside Act (Ref 3), is not included within this report. This information is confidential and therefore a confidential annex (**Annex C**) and separate figure (**Figure 9-7-2**) will be provided to key stakeholders with a legitimate need to view the information.

## 1.2 Site Description

- 1.2.1 The Scheme is located approximately 5 kilometres (km) to the east of Gainsborough and approximately 13km to the north of Lincoln. The Scheme comprises two distinct parcels, which are:
- a. 'the Principal Site', which is the location where ground mounted solar PV panels, electrical sub-stations, and Battery Energy Storage System (BESS) will be installed; and
  - b. 'the Cable Route Corridor', which will comprise the underground electrical infrastructure required to connect the Principal Site to National Grid Cottam Substation.
- 1.2.2 The Principal Site is located within the administrative district of West Lindsey. The Cable Route Corridor tracks south of the Principal Site, to the east of Willingham by Stow, before tracking west towards the River Trent and to the south of Gate Burton. The Cable Route Corridor crosses into Nottinghamshire (within the administrative district of Bassetlaw) before connecting to National Grid Cottam Substation.
- 1.2.3 This report is based on the administrative county of Lincolnshire whilst recognising that key aspects of biodiversity are coordinated and managed within the geography of Greater Lincolnshire, for example the Nature Strategy for the Greater Lincolnshire Nature Partnership.
- 1.2.4 The Order limits covers an area of approximately 1,670 hectares (ha) and is dominated by arable fields (minimum 80% of the Order limits). There are numerous mature trees and hedges within the Order limits, with woodlands and small wooded copses. It is surrounded by mainly arable and improved grassland livestock fields.
- 1.2.5 The location of the Scheme is presented in **Figure 9-7-1**, included in **Annex A** of this survey report.

## 1.3 Aims and Objectives

1.3.1 The aim of this report is to determine the presence, assemblage and distribution of breeding bird species within the Survey Area (see **Section 3.1**).

1.3.2 The objectives, therefore, are to:

- a. review existing ecological data to identify any records of breeding birds occurring within the Study Area (see **Section 3.1**); and
- b. undertake surveys of breeding birds to confirm presence, assemblage and distribution of breeding bird species.

1.3.3 Combined, this is being used to:

- a. determine the nature conservation value of the Order limits for breeding birds; and
- b. the potential impacts of the Scheme on breeding birds and any required mitigation.

## **2. Relevant Legislation, Policy and Guidance**

### **2.1 Legislation**

#### **Wildlife and Countryside Act**

- 2.1.1 The legislative provisions for the protection of all wild birds in the UK are contained primarily in Sections 1-7 of the Wildlife and Countryside Act (WCA) 1981 (as amended) (Ref 3). 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 but does not include poultry or (except in relation to the power to grant licences and prohibition on certain methods of killing) any game bird.
- 2.1.2 When breeding, all birds, their nest, eggs and nestlings are afforded protection under the WCA, as updated by the 'Countryside and Rights of Way Act 2000' (Ref 4). Therefore, during the bird breeding season it is an offence to:
- a. intentionally kill, injure or take any wild bird;
  - b. intentionally take, damage or destroy the nest of any wild bird while it is in use or being built; and
  - c. intentionally take or destroy the eggs of any wild bird.
- 2.1.3 Typically, the breeding season is defined as between March and August, inclusive, although it is important to note that for some species, breeding can occur outside of these months.
- 2.1.4 Additionally, special penalties exist for offences related to species listed on Schedule 1 of the Wildlife and Countryside Act, 1981 (as amended) (Ref 3), for which there are additional offences for intentionally or recklessly disturbing these birds while it is building a nest or is in, on or near a nest containing eggs or young, and of disturbing their dependent young.
- 2.1.5 No licences are available for disturbance during a development even in circumstances where that development is fully authorised by consents such as a valid Development Consent Order.

#### **Directive of the Conservation of Wild Birds**

- 2.1.6 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 (European Union (EU) Birds Directive) (Ref 2), which lists 193 species, or sub-species, of birds in Annex 1 which are:
- a. in danger of extinction;
  - b. are rare, or have restricted local distribution;
  - c. are vulnerable to specific changes in their habitat; or
  - d. require particular attention for reasons of the specific nature of habitat.



2.1.7 The Birds Directive was most recently transposed into English law by the Conservation of Habitats and Species Regulations 2017 (as amended) (Ref 5). Although the UK is no longer a member state of the EU, the 2019 amendments (Ref 6) to the Conservation of Habitats and Species Regulations 2017 (Ref 5) make it clear that provisions regarding the protection and designation of Special Protection Areas (SPAs) are maintained. Species listed in Annex 1 are those for which the UK government takes special conservation measures; including the designation of land as SPAs to ensure the survival and reproduction of these species throughout their distributions. These sites are automatically included within the National Site Network; a network of core breeding and resting sites that are protected for rare and threatened species.

## 2.2 Priority Species

2.2.1 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 7). These species are of material consideration during the planning process.

2.2.2 The NERC list of Species of Principal Importance (Ref 7) 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 2006 (in this context, the Secretary of State). Under Section 40, every public authority (e.g. a local authority or local planning authority) must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity, including restoring or enhancing a population or a habitat.

2.2.3 The UK Biodiversity Action Plan (UKBAP) (Ref 8) was launched in 1994 and established a framework and criteria for identifying species (and habitat types) of conservation concern. From this list, action plans for Priority Species of conservation concern were published and have subsequently been succeeded by the UK Post-2010 Biodiversity Framework (July 2012) (Ref 9), which is relevant in the context of Section 40 of the NERC Act. These species are identified as those of conservation concern, due to their rarity or a declining population trend.

## 2.3 Local Biodiversity Action Plan

2.3.1 The Scheme is located within the counties of Lincolnshire and Nottinghamshire. Formerly, the Lincolnshire Biodiversity Action Plan (Lincolnshire BAP) (3rd edition) (Ref 10) provided context to inform identification of threatened or uncommon species of local relevance, alongside priorities for conservation and enhancement targeted at a local level in Lincolnshire. However, under the Environment Act 2021 (Ref 11), these are being replaced by Local Nature Recovery Strategies (LNRSs), which are a system of spatial strategies for nature which will support delivery of biodiversity net gain (BNG) and provide more focussed action for nature recovery. Whilst this is still being developed for Lincolnshire and with no specific habitat or species plans currently in place, this report references

those species formerly included on the Lincolnshire BAP, of which there are 17 priority bird species (see **Table 1**).

- 2.3.2 The Nottinghamshire Biodiversity Action Plan (Nottinghamshire BAP) (Ref 12) continues to provide context to inform identification of threatened or uncommon species of local relevance and identifies priorities for conservation and enhancement and are a mechanism for enabling national targets at a local level. However, it confers no particular legislative or policy protection to the species identified, although in some cases this is provided through related legislation and local planning policy. The Nottinghamshire BAP lists three priority bird species, as presented in **Table 1**.

**Table 1. Priority bird species listed on the Lincolnshire and Nottinghamshire BAPs**

English name	(vernacular) Scientific name	Lincs BAP	Notts BAP
Barn Owl	<i>Tyto alba</i>	-	✓
Bullfinch	<i>Pyrrhula pyrrhula</i>	✓	-
Corn Bunting	<i>Emberiza calandra</i>	✓	-
Curlew	<i>Numenius arquata</i>	✓	-
Grey Partridge	<i>Perdix perdix</i>	✓	-
Lapwing	<i>Vanellus vanellus</i>	✓	-
Linnet	<i>Linaria cannabina</i>	✓	-
Nightjar	<i>Caprimulgus europaeus</i>	✓	✓
Redshank	<i>Tringa totanus</i>	✓	-
Reed Bunting	<i>Emberiza schoeniclus</i>	✓	-
Skylark	<i>Alauda arvensis</i>	✓	-
Snipe	<i>Gallinago gallinago</i>	✓	-
Starling	<i>Sturnus vulgaris</i>	✓	-
Tree Sparrow	<i>Passer montanus</i>	✓	-
Turtle Dove	<i>Streptopelia turtur</i>	✓	-
Willow Tit	<i>Poecile montanus</i>	✓	✓
Yellow Wagtail	<i>Motacilla flava</i>	✓	-
Yellowhammer	<i>Emberiza citrinella</i>	✓	-

- 2.3.3 The following threats to farmland birds in Lincolnshire were identified in the Lincolnshire BAP (Ref 10):
- the loss of permanent and relatively species-rich grassland;
  - increased chemical usage including fertilisers, pesticides and use of broad spectrum and persistent animal treatments;

- c. uniformity within crops, offering fewer opportunities for birds to feed and nest;
  - d. the decline of mixed farming;
  - e. loss of hedgerow trees through old age and removal for safety and other reasons;
  - f. hedgerow removal and poor management of remaining hedges;
  - g. drainage of arable land decreasing the potential for nesting Lapwing and
  - h. reducing the ability of chicks to probe for food;
  - i. a reduction in crop mosaic; and
  - j. nest destruction by agricultural machinery and non-replacement of old nest boxes for Barn Owls, reducing future availability of nesting sites.
- 2.3.4 The Nottinghamshire BAP (Ref 12) provides specific action plan for Barn Owl and identifies the following threats to this species:
- a. loss of habitats such as rough grassland and hedgerows to development and agricultural intensification, with a consequent decline in prey species populations;
  - b. lack of long grass in field margins and roadside verges as a habitat for small mammals;
  - c. a lack of old trees for nesting and roosting sites;
  - d. demolition or conversion of old agricultural buildings;
  - e. poisoning by rodenticides and insecticides;
  - f. road deaths;
  - g. disturbance to nesting and roosting sites (often unintentionally) by people; and
  - h. hard winters leading to Barn Owls dying of starvation.
- 2.3.5 The Nottinghamshire BAP action plans for Willow Tit and Nightjar have not been included within this report as neither species was recorded during the surveys for breeding birds and therefore the action plans are not relevant in the context of the Scheme.

## 2.4 Birds of Conservation Concern

- 2.4.1 The Birds of Conservation Concern (BoCC) 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 and are drawn together by the UK's leading bird conservation organisations, including the Royal Society for the Protection of Birds (RSPB) and British Trust for Ornithology (BTO).
- 2.4.2 The most recent assessment, BoCC 5 (Ref 13), was published in December 2021 and is based on the most up-to-date evidence available and includes conservation status at global and European levels and, within the UK: historical decline, trends in population and range, rarity, localised distribution and international importance.

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

### **Red List**

- a. species that are globally threatened (Critically Endangered, Endangered and Vulnerable, but not Near Threatened) under International Union for Conservation of Nature and Natural Resources (IUCN) Red List guidelines (Ref 14);
- b. species that have shown a historical decline in breeding populations, declining severely between 1800 and 1995 and have subsequently not recovered;
- c. species that have suffered a severe (>50%) breeding or non-breeding population decline within the UK in either the last 25 years or the longer-term (since 1969); or
- d. species whose UK range in either the breeding or non-breeding season has declined by more than 50% between respective breeding and non-breeding atlases.

### **Amber List**

- a. species that are threatened in Europe (Critically Endangered, Endangered and Vulnerable, but not Near Threatened as per IUCN Red List Guidelines (Ref 14));
- b. species that were previously red-listed for historical population decline, followed by an increase of at least 100% over 25 years or the longer-term period;
- c. species that have suffered a moderate (>25% but <50%) breeding or non-breeding population decline within the UK in either the last 25 years or the longer-term (since 1969);
- d. species whose UK range in either the breeding or non-breeding season has declined by more than 25% but less than 50% between respective breeding and non-breeding atlases;
- e. breeding or non-breeding rarities (UK population <300 breeding pairs or <900 non-breeding individuals);
- f. breeding or non-breeding localisation whereby more than 50% of the UK population was found at ten or fewer sites in either the breeding or the non-breeding season; or
- g. breeding or non-breeding international importance whereby the UK holds at least 20% of the European population in either the breeding or the non-breeding season of a particular species.

### **Green List**

- a. species that are not showing moderate or severe declines and do not qualify under any of the above criteria.

2.4.4 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 that may be affected by a plan or project.

## 3. Methods

### 3.1 Characterising the baseline

3.1.1 Within this report, the following terminology is used when referring to the geographic areas within which assessments were made:

- a. Study Area – the area within the Order limits and a 2km radius which was subject to collection of background information e.g. desk study records for birds to supplement the findings of the survey work;
- b. Zone of Influence (Zol) - the area over which breeding birds may be affected by the Scheme which, using the criteria below and proportionate to the Scheme's impacts, is up to 200m from the Order limits (dependent on the sensitivity of the species). Through review of likely impacts of the Scheme and results of the desk study, the scope of field surveys was then defined; and
- c. Survey Area – this is the area within which survey work was undertaken. The Survey Area to record the general breeding bird assemblage included all habitats within the Principal Site and a minimum 50m survey buffer around the Principal Site. For species of greater conservation value and/or higher sensitivity, e.g. those listed on Schedule 1 of the WCA (Ref 3) and sensitive to potential noise or visual disturbance, where any such species were recorded, the Survey Area was extended up to 200m from the Order limits

3.1.2 The Zol is based on:

- a. the nature of the project (a solar farm scheme), project activities and the potential for effects at all development stages (construction, operation and decommissioning);
- b. the nature of the land use (minimum 80% arable) and habitats in the vicinity (majority being arable), their connectivity within and outside of the Order limits and how they may be used by breeding birds;
- c. the presence and assemblages of breeding bird species in the wider area, based on the location of the Order limits and desk study data; and
- d. the habits, behaviours and preferences of different bird species during the breeding season and whether these could be affected both spatially and temporally.

3.1.3 Whilst standardised survey buffers for assessing the impacts of development on bird populations do not exist, the geographic areas described above provide information on breeding birds both within the Order limits and the area immediately surrounding the Order limits, including areas contiguous with the Order limits, where birds may potentially be adversely affected. Therefore, these are sufficient to determine the likely impacts of the Scheme on the majority of breeding bird species occurring or likely to occur within the vicinity of the Order limits.

## 3.2 Desk Study

- 3.2.1 A desk study was undertaken as part of the Preliminary Ecological Appraisal in July 2022 (Ref 15). Records of protected and notable bird species within a 2km radius of the Order limits were obtained through Greater Lincolnshire Nature Partnership (GLNP) and Nottinghamshire Biological and Geological Records Centre (NBGRC).
- 3.2.2 Only records up to ten years old 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.

## 3.3 Collaborative Dataset

- 3.3.1 As set out in **Chapter 3: Scheme Description** of this ES [EN010142/APP/6.1], the Scheme has worked collaboratively with Gate Burton Energy Park, Cottam Solar Project and West Burton Solar Project to minimise environmental impacts along the Cable Route Corridor by using a shared route, where practicable. As a result, a wealth of ecological information has been collected along this corridor. To minimise disturbance to wildlife and landowners, through repeated access by multiple schemes, where relevant, the Applicant has collaborated with the other proposed developments to 'share' data. Where this has been the case, it is clearly described in this report. In addition, the Applicant has undertaken surveys to ground truth these data, where relevant.
- 3.3.2 Wider ecological survey data for these schemes was reviewed as part of the desk study and informed the assessment of breeding birds in the wider landscape (Gate Burton Energy Park (Ref 16); Cottam Solar Project (Ref 17); and West Burton Solar Project (Ref 18)).

## 3.4 Field Survey

### Territory Mapping Survey

- 3.4.1 The survey was undertaken based on standard territory mapping methods for surveying breeding birds as detailed in '*Bird Monitoring Methods*' (Gilbert *et al.*, 1998) (Ref 19) and '*Bird Census Techniques*' (Bibby *et al.*, 2000) (Ref 20). 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. 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.
- 3.4.2 Five survey visits were undertaken between mid-April and end-July 2022, as presented below. Given the size of the survey area for the Principal Site each survey visit took up to nine days to complete.

- a. Visit 1: 13<sup>th</sup> & 14<sup>th</sup> April 2022; 19<sup>th</sup> to 22<sup>nd</sup> April 2022; 26<sup>th</sup> to 28<sup>th</sup> April 2022;
  - b. Visit 2: 29<sup>th</sup> April 2022; 4<sup>th</sup> to 6<sup>th</sup> May 2022; 10<sup>th</sup> to 13<sup>th</sup> May 2022;
  - c. Visit 3: 17<sup>th</sup> to 20<sup>th</sup> May 2022; 24<sup>th</sup> to 27<sup>th</sup> May 2022; 7<sup>th</sup> to 10<sup>th</sup> June 2022;
  - d. Visit 4: 14<sup>th</sup> to 17<sup>th</sup> June 2022; 28<sup>th</sup> June to 1<sup>st</sup> July 2022; and
  - e. Visit 5: 12<sup>th</sup> to 14<sup>th</sup> July 2022; 26<sup>th</sup> to 29<sup>th</sup> July 2022.
- 3.4.3 In addition, further survey visits were undertaken between April and June 2023 of areas not accessible during 2022 to ensure suitable coverage of the Survey Area. These surveys concentrated on locating species of conservation concern, as defined in **Section 2**.
- 3.4.4 Survey routes followed the majority of 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. Regular stopping points were included along the survey route to record any species that may be passing through the Survey Area and to survey birds that were audible or visible within any inaccessible areas.
- 3.4.5 Each survey was undertaken during appropriate conditions for surveying when the weather was dry, warm and with little to no wind. Surveys were undertaken 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. Survey routes were mapped, and the direction walked alternated on each visit, to ensure that all areas were covered at various times of the morning across the duration of the survey.
- 3.4.6 All birds seen and heard were recorded directly onto paper maps and then later digitised onto a 1:10,000 scale Ordnance Survey base map of the Survey Area. All bird species were recorded and mapped across the entire survey area. 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.
- 3.4.7 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.
- 3.4.8 On completion of the surveys, analysis maps were produced for each species, consisting of all registrations recorded during surveys. From these species maps, the number of territories was calculated by identifying the number of clusters present.
- 3.4.9 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.

- 3.4.10 Territory analysis focussed on those species of highest conservation concern i.e. specially protected species (those listed on Schedule 1 of the WCA (Ref 3) or Annex 1 of the EU Birds Directive (Ref 2)); Priority species (Ref 8) and BoCC Red-listed species (Ref 13); or BoCC Amber-listed species (but only where impacts were predicted on specific species). Therefore, for species which are widespread throughout the Survey Area (e.g. Robin *Erithacus rubecula*), and/ or are common within both counties (Lincolnshire and Nottinghamshire) and the UK, and are 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 although these are referred to in the results section as having breeding territories present (P) within the Survey Area.
- 3.4.11 The following definitions were used to identify the breeding territory status of each species recorded:
- a. 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/downy young;
  - b. 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;
  - c. Possible: includes species observed during surveys in suitable nesting habitat; or a singing male present (or breeding calls heard) in suitable breeding habitat; or
  - d. Non-breeding: species-specific information was used to determine fly-over species, or species suspected to be summering non-breeder.
- 3.4.12 For non-passerines, including waterbirds, e.g., wildfowl, waders and birds of prey, the behaviour or number of individuals including the sex ratio, present in suitable breeding habitat, was used to determine the potential presence of likely breeding territories and/or estimated number of breeding individuals. This was made with reference to the specific species group methods, as presented in '*Bird Monitoring Methods*' (Ref 20).

## 3.5 Assessment of ornithological importance

- 3.5.1 The assessment of the ornithological importance of the Survey Area during the 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 section 2 of this report. These include:
- a. species listed on Annex 1 of the EU Birds Directive (Ref 2);
  - b. species listed on Schedule 1 of the WCA, 1981 (as amended) (Ref 3);
  - c. priority bird species in the UK (Ref 7), Lincolnshire or Nottinghamshire (see Table 1); and



- d. species included in the Birds of Conservation Concern (BoCC) Red and Amber Lists (Ref 13).

## Species abundance

- 3.5.2 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 21). The BTO Bird Atlas 2007-2011 (Ref 22) was also reviewed for species information on a national level.
- 3.5.3 Information on populations of any nationally rare species was sourced from the most recently published paper by the Rare Breeding Birds Panel (RBBP) (Ref 23).
- 3.5.4 County-level estimates on the breeding bird populations of the majority of species in Lincolnshire and Nottinghamshire were obtained from online resources and county avifauna publications, where this information was available. However, professional judgement was applied when determining the geographic importance of species where population estimates were not available.

## Species diversity

- 3.5.5 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.
- 3.5.6 **Table 2** presents the breeding species diversity criteria as outlined in Fuller (1980) (Ref 24), 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 2. Breeding species diversity criteria (Fuller, 1980)**

Local	County	Regional	National
25-49 species	50-69 species	70-84 species	85+ species

- 3.5.7 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.
- 3.5.8 Local Wildlife Sites (LWS) (or County Wildlife Sites (CWS)) are among the most important places for wildlife in Lincolnshire and Nottinghamshire, together with legally protected land such as Sites of Special Scientific Interest (SSSIs).

- 3.5.9 In Lincolnshire, CWS's are selected for their habitats and subsequently has no specific criteria for birds. Therefore, species diversity in Lincolnshire has been measured using professional judgement, considering species presence within distinct habitat types within the Principal Site, e.g. farmland passerines, with reference to GLNP 'Local Wildlife Site Guidelines for Greater Lincolnshire' (Ref 25).
- 3.5.10 As stated in the Nottinghamshire LWS Handbook (Ref 26), a LWS in Nottinghamshire can be selected based on the following specific criteria for birds (Ref 26):
- a. *“Criterion 1: Any site that regularly supports breeding by a species monitored by the Rare Breeding Birds Panel;*
  - b. *Criterion 2: Any site that regularly supports a breeding colony of a colonial species on the Notts BoCC list;*
  - c. *Criterion 3: Any site that regularly has two or more breeding species of waders; and*
  - d. *Criterion 4: Any site that has a regular breeding bird assemblage with a score that is equal to or exceeds the threshold Value for the site's habitat”.*

### **Importance of the breeding bird population**

- 3.5.11 An essential prerequisite step to allow ecological impact assessment of the Scheme was an evaluation of the relative biodiversity importance of the Survey Area for breeding birds. This is necessary to set the terms of reference for the subsequent ecological impact assessment.
- 3.5.12 The method of evaluation that was utilised has been developed with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines (Ref 27). This gives guidance on scoping and carrying out environmental assessments and places appraisal in the context of relevant policies and at a geographical scale at which feature matters (i.e. international, national, regional, county, district, local or site). Data received through desk study and field-based surveys were used and evaluated on species rarity, abundance and diversity within the Survey Area to assess the biodiversity importance of the breeding bird populations recorded during the field surveys. Professional judgement was also applied where necessary. Relevant published national and local guidance and criteria can be used, where available, to inform the assessment of biodiversity importance and to assist consistency in evaluation.

## **3.6 Assumptions and limitations**

- 3.6.1 There were a number of modifications to the Order limits, which in turn resulted in minor modifications to the Survey Area used during the course of the survey for breeding birds. The buffer around the Order limits, forming the Survey Area was such that it allowed for minor modifications to the Scheme without reducing the efficacy of the survey. Whilst it is acknowledged that individual territories of some species may have been missed, due to small areas of the Order limits not being surveyed (<1%), any modifications to the Scheme are not considered to have significantly altered the conclusions drawn within this report. Sufficient representatives of all habitat types have

been covered within the entirety of the optimal survey period, allowing for a comprehensive assessment of bird species and assemblages present.

- 3.6.2 Therefore, 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 Order limits.

## 4. Results

### 4.1 Desk study

- 4.1.1 The data search, undertaken through GLNP and NBGRC, returned records of 99 bird species, including specially protected or notable bird species (see section 2) from within the Study Area and from the preceding ten years from the request date. A list of the 99 species recorded during the desk study is included in **Annex A**.
- 4.1.2 Of these 99 bird species:
- 24 specially protected species that are listed on either Annex 1 of the Birds Directive (Ref 2) or on Schedule 1 of the WCA, 1981 (as amended) (Ref 3);
  - 14 species are listed as a Priority Species in the UK (Ref 8);
  - 20 species are included on the BoCC Red List (Ref 13);
  - 40 species are included on the BoCC Amber List (Ref 13);
  - eight species are listed as Lincolnshire BAP species (Ref 10); and
  - one species is listed as a Nottinghamshire BAP species (Ref 12).

### 4.2 Collaborative Dataset

- 4.2.1 The Gate Burton Solar Farm (Ref 16) dataset returned records of 28 protected or notable bird species with either confirmed or probable / possible territories within the Cable Route Corridor, between the A1500 (just east of Marton) and Cottam Power Station. Of these 28 bird species:
- three specially protected species, listed on either Annex 1 of the Birds Directive (Ref 2) or on Schedule 1 of the WCA, 1981 (as amended) (Ref 3);
  - nine species are listed as a Priority Species in the UK (Ref 8);
  - five species are included on the BoCC Red List (Ref 13);
  - eleven species are included on the BoCC Amber List (Ref 13);
  - one species is listed as a Lincolnshire BAP species (Ref 10); and
  - one species is listed as a Nottinghamshire BAP species (Ref 12).
- 4.2.2 The datasets for the West Burton and Cottam Solar Projects returned records of 51 bird species that were recorded within the Cable Route Corridor during the breeding season, between the Principal Site and the A1500 at Marton. Whilst no information was provided on whether these species were holding breeding territories, using professional judgement, species that are within their known geographical breeding range or considered likely to be breeding (as suitable habitat exists within the Cable Route Corridor) have been included within this assessment. Therefore, of the 51 species for which data were received, 41 species have been included within this assessment as potentially holding breeding territories within the Cable Route Corridor.

## 4.3 Field survey

- 4.3.1 A total of 77 species (including species listed on Schedule 1 of the WCA (Ref 3) and Annex 1 of the Birds Directive (Ref 2)) were recorded during surveys of breeding birds within the Principal Site between April and July 2022. A summary of the breeding and conservation status of the 77 species recorded during the survey, with the numbers of territories identified (or thought likely in the case of probable and possible records) is provided in Table 3.
- 4.3.2 Of the 77 species recorded within the Survey Area, territories of 48 species were confirmed and territories of a further seven species were considered to be probable or possible within the survey area, resulting in a breeding bird assemblage of 55 species. Records relating to the remaining 22 species were of non-breeding species.
- 4.3.3 From the breeding assemblage of 55 species, recorded during field surveys:
- no species are listed on Annex 1 of the Birds Directive (Ref 2);
  - three species are listed on Schedule 1 of the Wildlife and Countryside Act, 1981 (as amended) (Ref 3);
  - fourteen species are listed as a Priority Species in the UK (Ref 8);
  - twelve species are included on the BoCC Red List (Ref 13);
  - fifteen species are included on the BoCC Amber List (Ref 13); and
  - ten species are listed as Lincolnshire BAP species (Table 1).
- 4.3.4 For species that are widespread throughout the survey area (e.g., Blue Tit *Cyanistes caeruleus*), common within Lincolnshire 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 3 as being present (P).
- 4.3.5 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 3**.

**Table 3. Breeding status, number of territories and conservation status of birds recorded within the Principal Site**

<b>Species (English name) and scientific name</b>	<b>Conservation status (where applicable)</b>	<b>Breeding Territory Status</b>	<b>Number of territories of breeding species (where applicable)</b>	<b>Supporting Notes</b>
Canada Goose <i>Branta canadensis</i>	-	Non-breeding	0	-
Greylag Goose <i>Anser anser</i>	BoCC Amber	Non-breeding	0	-
Gadwall <i>Mareca strepera</i>	BoCC Amber	Non-breeding	0	-
Mallard <i>Anas platyrhynchos</i>	BoCC Amber	Confirmed	2	Two pairs recorded in a field drain in the centre of the Principal Site.
Tufted Duck <i>Aythya fuligula</i>	-	Non-breeding	0	-
Red-legged Partridge <i>Alectoris rufa</i>	-	Confirmed	P	-
Grey Partridge <i>Perdix perdix</i>	Priority Species, BoCC Red, Lincs BAP	Confirmed	13	Recorded within arable and grassland margin habitats throughout the Principal Site.
Quail <i>Coturnix coturnix</i>	WCA Sch. 1, BoCC Amber	Confirmed	1	-
Pheasant <i>Phasianus colchicus</i>	-	Confirmed	P	-
Grey Heron <i>Ardea cinerea</i>	-	Non-breeding	0	-
Sparrowhawk <i>Accipiter nisus</i>	BoCC Amber	Non-breeding	0	-
Red Kite <i>Milvus milvus</i>	Annex 1, WCA Sch. 1	Non-breeding	0	-
Buzzard <i>Buteo buteo</i>	-	Confirmed	4	-
Moorhen <i>Gallinula chloropus</i>	BoCC Amber	Confirmed	1	-

<b>Species (English name) and scientific name</b>	<b>Conservation status (where applicable)</b>	<b>Breeding Territory Status</b>	<b>Number of territories of breeding species (where applicable)</b>	<b>Supporting Notes</b>
Coot <i>Fulica atra</i>	-	Non-breeding	0	-
Lapwing <i>Vanellus vanellus</i>	Priority Species, BoCC Red, Lincs BAP	Confirmed	4	Three territories recorded in the east of the Principal Site, with another in the west (see Figure 9-7-1), all within arable habitats.
Dotterel <i>Charadrius morinellus</i>	WCA Sch. 1, BoCC Red	Non-breeding	0	-
Curlew <i>Numenius arquata</i>	Priority Species, BoCC Red, Lincs BAP	Possible	(1)	Although recorded throughout the survey period, most observations were of individuals in flight over the Survey Area. Of note, a pair were recorded, including the male 'singing' (bubbling / displaying). All registrations were concentrated to the west of Billyard's Farm (see Figure 9-7-1). However, throughout the survey period it was evident from registrations of Curlew, that this species was using the Principal Site as part of their 'home range' (with birds recorded foraging within the Principal Site), but no evidence of nesting was recorded within the Principal Site.
Snipe <i>Gallinago gallinago</i>	BoCC Amber, Lincs BAP	Non-breeding	0	-
Black-headed Gull <i>Chroicocephalus ridibundus</i>	BoCC Amber	Non-breeding	0	-
Common Gull <i>Larus canus</i>	BoCC Amber	Non-breeding	0	-

<b>Species (English name) and scientific name</b>	<b>Conservation status (where applicable)</b>	<b>Breeding Territory Status</b>	<b>Number of territories of breeding species (where applicable)</b>	<b>Supporting Notes</b>
Yellow-legged Gull <i>Larus michahellis</i>	BoCC Amber	Non-breeding	0	-
Lesser Black-backed Gull <i>Larus fuscus</i>	BoCC Amber	Non-breeding	0	-
Stock Dove <i>Columba oenas</i>	BoCC Amber	Confirmed	9	Recorded close to woodland blocks and mature trees.
Wood Pigeon <i>Columba palumbus</i>	BoCC Amber	Confirmed	P	Recorded close to woodland blocks, scrub and mature trees.
Collared Dove <i>Streptopelia decaocto</i>	-	Confirmed	2	-
Cuckoo <i>Cuculus canorus</i>	Priority Species, BoCC Red	Possible	(1)	Single male around Harpswell Wood, in the centre of the Principal Site.
Barn Owl <i>Tyto alba</i>	WCA Sch. 1	Probable	(1)	-
Little Owl <i>Athene noctua</i>	-	Confirmed	1	-
Swift <i>Apus apus</i>	BoCC Red	Non-breeding	0	-
Great Spotted Woodpecker <i>Dendrocopos major</i>	-	Confirmed	1	-
Green Woodpecker <i>Picus viridus</i>	-	Possible	(1)	-
Hobby <i>Falco subbuteo</i>	WCA Sch. 1	Probable	(1)	-
Kestrel <i>Falco tinnunculus</i>	BoCC Amber	Confirmed	2	Two territories towards the centre of the Principal Site.



<b>Species (English name) and scientific name</b>	<b>Conservation status (where applicable)</b>	<b>Breeding Territory Status</b>	<b>Number of territories of breeding species (where applicable)</b>	<b>Supporting Notes</b>
Peregrine <i>Falco peregrinus</i>	Annex 1, WCA Sch. 1	Non-breeding	0	-
Jay <i>Garrulus glandarius</i>	-	Probable	(1)	-
Magpie <i>Pica pica</i>	-	Confirmed	P	-
Jackdaw <i>Coloeus monedula</i>	-	Confirmed	P	-
Rook <i>Corvus frugilegus</i>	BoCC Amber	Confirmed	12	Single 'Rookery' in mature trees in the west of the Principal Site.
Carrion Crow <i>Corvus corone</i>	-	Confirmed	P	-
Coal Tit <i>Periparus ater</i>	-	Confirmed	1	-
Blue Tit <i>Cyanistes caeruleus</i>	-	Confirmed	P	-
Great Tit <i>Parus major</i>	-	Confirmed	P	-
Skylark <i>Alauda arvensis</i>	Priority Species, BoCC Red, Lincs BAP	Confirmed	152	Recorded within arable and grassland habitats throughout the Principal Site.
Sand Martin <i>Riparia riparia</i>	-	Non-breeding	0	-
Swallow <i>Hirundo rustica</i>	-	Confirmed	3	-
House Martin <i>Delichon urbicum</i>	BoCC Red	Non-breeding	0	-
Long-tailed Tit <i>Aegithalos caudatus</i>	-	Confirmed	6	-
Willow Warbler <i>Phylloscopus trochilus</i>	BoCC Amber	Confirmed	6	Recorded throughout the Principal Site, associated with scrub and hedgerows.
Chiffchaff <i>Phylloscopus collybita</i>	-	Confirmed	15	-

<b>Species (English name) and scientific name</b>	<b>Conservation status (where applicable)</b>	<b>Breeding Territory Status</b>	<b>Number of territories of breeding species (where applicable)</b>	<b>Supporting Notes</b>
Reed Warbler <i>Acrocephalus scirpaceus</i>	-	Non-breeding	0	-
Blackcap <i>Sylvia atricapilla</i>	-	Confirmed	P	-
Lesser Whitethroat <i>Sylvia curruca</i>	-	Confirmed	2	-
Whitethroat <i>Sylvia communis</i>	BoCC Amber	Confirmed	48	Recorded throughout the Principal Site, associated with scrub and hedgerows.
Goldcrest <i>Regulus regulus</i>	-	Confirmed	2	-
Wren <i>Troglodytes troglodytes</i>	BoCC Amber	Confirmed	44	Recorded throughout the Principal Site, associated with scrub and hedgerows.
Treecreeper <i>Certhia familiaris</i>	-	Probable	(1)	-
Starling <i>Sturnus vulgaris</i>	Priority Species, BoCC Red, Lincs BAP	Non-breeding	0	-
Blackbird <i>Turdus merula</i>	-	Confirmed	P	-
Song Thrush <i>Turdus philomelos</i>	Priority Species, BoCC Amber	Confirmed	7	Recorded within scrub and woodland habitats across the Principal Site
Mistle Thrush <i>Turdus viscivorus</i>	BoCC Red	Confirmed	2	Found near woodland blocks.
Robin <i>Erithacus rubecula</i>	-	Confirmed	P	-
Wheatear <i>Oenanthe oenanthe</i>	BoCC Amber	Non-breeding	0	-
House Sparrow <i>Passer domesticus</i>	Priority Species, BoCC Red	Confirmed	10	Recorded close to residential properties adjacent to the Principal Site

<b>Species (English name) and scientific name</b>	<b>Conservation status (where applicable)</b>	<b>Breeding Territory Status</b>	<b>Number of territories of breeding species (where applicable)</b>	<b>Supporting Notes</b>
Tree Sparrow <i>Passer montanus</i>	Priority Species, BoCC Red, Lincs BAP	Confirmed	8	Recorded in the centre of the Principal Site, within hedges, trees and scrub, also close to buildings
Dunnock <i>Prunella modularis</i>	Priority Species, BoCC Amber	Confirmed	29	Found throughout the Principal Site in scrub, hedgerows and near woodland
Yellow Wagtail <i>Motacilla flava</i>	Priority Species, BoCC Red, Lincs BAP	Confirmed	19	An even distribution of this species, throughout the Principal Site, associated with arable habitats
Pied Wagtail <i>Motacilla alba</i>	-	Confirmed	P	-
Meadow Pipit <i>Anthus pratensis</i>	BoCC Amber	Confirmed	12	Territories associated with grassland margins, along tracks and ditches.
Chaffinch <i>Fringilla coelebs</i>	-	Confirmed	P	-
Bullfinch <i>Pyrrhula pyrrhula</i>	Priority Species, BoCC Amber, Lincs BAP	Confirmed	1	A single territory associated with scrub and woodland within the centre of the Principal Site
Greenfinch <i>Chloris chloris</i>	BoCC Red	Confirmed	3	Territories associated with woodland and hedgerows.
Linnet <i>Linaria cannabina</i>	Priority Species, BoCC Red, Lincs BAP	Confirmed	25	A mobile species, found throughout the Principal Site, mostly associated with hedgerows and scrub
Goldfinch <i>Carduelis carduelis</i>	-	Confirmed	P	-
Corn Bunting <i>Emberiza calandra</i>	Priority Species, BoCC Red, Lincs BAP	Non-breeding	0	-

<b>Species (English name) and scientific name</b>	<b>Conservation status (where applicable)</b>	<b>Breeding Territory Status</b>	<b>Number of territories of breeding species (where applicable)</b>	<b>Supporting Notes</b>
Yellowhammer <i>Emberiza citrinella</i>	Priority Species, BoCC Red, Lincs BAP	Confirmed	54	Found throughout the Principal Site, associated with hedgerows and scrub
Reed Bunting <i>Emberiza schoeniclus</i>	Priority Species, BoCC Amber, Lincs BAP	Confirmed	36	Found throughout the Principal Site, mostly associated with hedgerows and scrub near watercourses
<b>Total number of species</b>			<b>77</b>	-
<b>Breeding assemblage</b>			<b>55</b>	-

## 5. Evaluation

- 5.1.1 The data search, collaborative datasets and field surveys were used to determine the importance of the Order limits for breeding birds and this is presented in the following sections.

### 5.2 Specially Protected Species

- 5.2.1 This section has been redacted from the main report and is included as a confidential annex (**Annex C**) to be provided to key stakeholders only, as it contains sensitive information on the presence, or otherwise of specially protected bird species.

### 5.3 Species of conservation importance

#### Priority Species

- 5.3.1 The desk study identified 14 bird species (see **Annex A**) that are listed as Species of Principal Importance prepared under Section 41 of the NERC Act 2006 (Ref 7). Of these 14 species, Bittern, Black-tailed Godwit, Common Scoter and Scaup are unlikely to breed in the Order limits, as the Order limits is either outside of their geographical breeding range of breeding, or the habitat within the Order limits is not suitable to support these species. The absence of such species was further confirmed by field surveys.
- 5.3.2 Suitable habitat does exist within the Order limits to support Grasshopper Warbler and Turtle Dove, two species identified within the Study Area through the desk study, but neither species was recorded during surveys of breeding birds.
- 5.3.3 Breeding territories were confirmed, or thought probable, or possible for fourteen species (Grey Partridge, Lapwing, Curlew, Cuckoo, Skylark, Song Thrush, House Sparrow, Tree Sparrow, Dunnock, Yellow Wagtail, Bullfinch, Linnet, Yellowhammer and Reed Bunting) within the Principal Site (see Table 3) during field surveys of the Principal Site or identified as occurring within the Cable Route Corridor.

#### Birds of Conservation Concern

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

#### Red List species

- 5.3.5 The desk study identified 20 bird species (see **Annex A**) that are listed on the Red List of BoCC 5 (Ref 13). Of these, 11 species, Black-tailed Godwit, Corncrake, Common Scoter, Fieldfare, Grasshopper Warbler, House Martin, Montagu's Harrier, Ring Ouzel, Ruff, Scaup and Turtle Dove are unlikely to breed in the Order limits, as the Order limits is either outside of their geographical breeding range, suitable breeding habitat for these species is

not present within the Order limits or they were not recorded as holding breeding territories during field surveys.

- 5.3.6 Breeding territories were confirmed, or thought probable, or possible for 12 species (Grey Partridge, Lapwing, Curlew, Cuckoo, Skylark, Mistle Thrush, House Sparrow, Tree Sparrow, Yellow Wagtail, Greenfinch, Linnet and Yellowhammer) during field surveys of the Principal Site or identified as occurring within the Cable Route Corridor.

### **Amber list species**

- 5.3.7 The desk study identified 40 bird species (see **Annex A**) that are listed on the Amber list of BoCC 5 (Ref 13). The majority of the 40 species are unlikely to breed in the Order limits, as the Order limits is outside of their geographical breeding range, the habitat within the Order limits is not suitable or they were not recorded as holding breeding territories during field surveys.
- 5.3.8 Breeding territories were confirmed, or thought probable, or possible for 15 species (Mallard, Quail, Moorhen, Stock Dove, Wood Pigeon, Kestrel, Rook, Willow Warbler, Whitethroat, Wren, Song Thrush, Dunnock, Meadow Pipit, Bullfinch and Reed Bunting) during field surveys of the Principal Site or identified as occurring within the Cable Route Corridor.

### **Lincolnshire BAP**

- 5.3.9 The desk study identified eight bird species (see **Annex A**) that are listed on the Lincolnshire BAP (Ref 10) and for which action plans have been prepared within the Lincolnshire BAP (see **Table 1**). With the exception of Snipe and Turtle Dove, that were not recorded during field surveys, breeding territories were confirmed, or thought probable, or possible for ten species (Grey Partridge, Lapwing, Curlew, Skylark, Tree Sparrow, Yellow Wagtail, Bullfinch, Linnet, Yellowhammer and Reed Bunting) during field surveys of the Principal Site. Skylark was also identified as occurring within the Cable Route Corridor.

### **Nottinghamshire BAP**

- 5.3.10 The desk study identified one bird species (Barn Owl, see **Annex A**) that is listed on the Nottinghamshire BAP (Ref 12) and for which a species action plan has been prepared. However, the collaborative datasets did not record this species as holding confirmed or probable / possible breeding territories within the section of the Cable Route Corridor that is within Nottinghamshire, although Barn Owl was recorded as being formerly present in a nest box (pellets recorded) within this Scheme location.

## **5.4 Species abundance**

- 5.4.1 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 a site for the population of individual species that it supports. This can be done by comparing the population present within the Order limits with the national and county breeding populations for that species.

- 5.4.2 No species are present within the Order limits in numbers of national significance, i.e., 1% or more of the UK population, when compared to national population estimates as presented in Woodward et al. (Ref 21).
- 5.4.3 Current county population estimates for some of the species afforded special statutory protection and, or, of conservation importance are not available. However, whilst the majority of species of conservation importance that were recorded within the Order limits are declining in the UK, most remain widespread.
- 5.4.4 Field surveys of the Principal Site recorded Curlew throughout the survey period in the south-west of the Principal Site, with single birds noted on most surveys. A male was 'bubbling' (territorial display song) on the western boundary of the Principal Site at the beginning of May 2022, but no evidence to suggest nesting on the Principal Site was recorded at any point during the surveys. It is possible that the Principal Site forms part of a wider breeding territory (home range), with nesting occurring outside of the Order limits. A single breeding pair of Curlew is likely to represent a significant proportion of the Lincolnshire breeding population, however, the Order limits on their own is not considered to represent a significant resource for the species in isolation, but in recognition of forming part of a breeding territory or home range the Order limits are of importance to breeding Curlew at District scale.
- 5.4.5 The population of Skylark (152 territories) recorded during field surveys of the Principal Site is likely to be of importance at a District scale in West Lindsey. Two Black Redstart territories, identified through the datasets provided by Gate Burton Solar Farm, is likely to represent a significant proportion (i.e. greater than 1%) of this species' population in Nottinghamshire.
- 5.4.6 All other species recorded during field surveys of the Principal Site or identified (through the collaborative datasets) as being present within the Cable Route Corridor, are not present in numbers important at a county or district scale in Lincolnshire or Nottinghamshire and are of Local importance only.

## 5.5 Species Diversity

- 5.5.1 To measure species diversity, the breeding assemblage (55) recorded in the Order limits, which includes species recorded during field surveys and received through the collaborative datasets, was evaluated against the criteria developed by Fuller (see **Table 2**) and taking into consideration that species diversity has declined significantly since the criteria were developed. The breeding assemblage would regard the value of the Order limits, as being of County importance for breeding birds.
- 5.5.2 There are no specific criteria for 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 Lincolnshire. Therefore, using professional judgement, the Principal Site and the species (and assemblages) that this area supports is unlikely to qualify as a LWS. Furthermore, evaluation of the Nottinghamshire LWS selection criteria (see section 3.5.10) against the data received through the collaborative datasets, the Cable Route Corridor is also unlikely to qualify as a LWS.

## 5.6 Species Distribution

- 5.6.1 The locations of territories for Priority Species and BoCC Red-listed species (see **Table 3**) that were recorded during field surveys are presented in **Figure 9-7-1** and locations of specially protected species are presented in confidential **Figure 9-7-2** which will be presented to key stakeholders only. Supporting notes on the distribution of species of the highest conservation concern is presented in **Table 3**. However, in general, concentrations of species across the Order limits were found within the most suitable habitats to support each individual species' needs (i.e. species reliant on woodland habitat were found within or close to woodland habitat, etc).



## 6. Conclusions

- 6.1.1 A breeding bird assemblage of 55 species was recorded within the Order limits and from this, 29 species meet at least one of a range of criteria relating to conservation importance (see **Table 3**), as detailed in **Section 2** of this report.
- 6.1.2 No species are present within the Order limits in numbers of national significance, i.e. 1% or more of the UK population.
- 6.1.3 Species diversity for the Order limits is of County importance.
- 6.1.4 The population arable habitats within the Order limits are likely to represent a resource of value at a District scale to Curlew and Skylark. The population of Black Redstart, identified in Nottinghamshire, is likely to be of County importance.
- 6.1.5 The Scheme has been designed to retain habitats of importance to breeding birds reliant on habitats such as woodland and hedgerows that are important to species that depend on them.

## 7. References

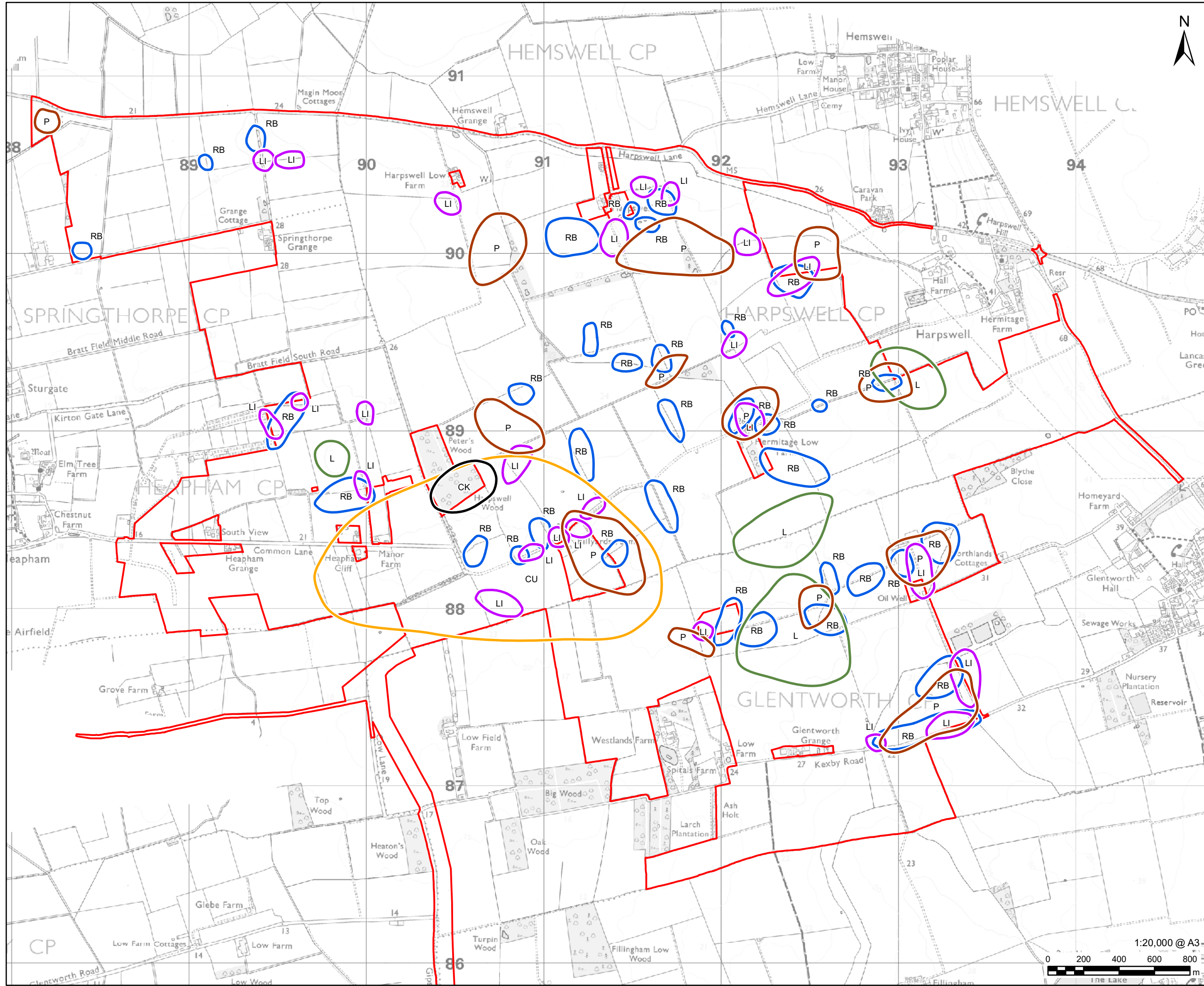
- Ref 2 EC (2009). Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (codified version). EC, Brussels.
- Ref 3 His Majesty's Stationary Office (1981). Wildlife & Countryside Act 1981 (as amended). HMSO, London
- Ref 4 HMSO (2000). Countryside and Rights of Way Act 2000. HMSO, London.
- Ref 5 HMSO (2018). Conservation of Habitats and Species Regulations 2017 (as amended). HMSO, London.
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## **Annex A Figures**

**Figure 9-7-1. Distribution of territories of species of conservation concern**

**Figure 9-7-2. Distribution of territories of specially protected species  
(CONFIDENTIAL)**



- LEGEND**
- Order Limits
  - Breeding Bird Territory
  - Grey Partridge, P
  - Lapwing, L
  - Curlew, CU
  - Cuckoo, CK
  - Linnet, LI
  - Reed Bunting, RB

**NOTES**

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**ISSUE PURPOSE**

DCO Submission

**PROJECT NUMBER**

60677969

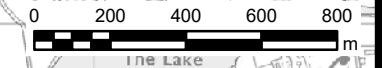
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Distribution of Territories of Species of Conservation Concern Priority Species (1/3)

**FIGURE NUMBER**

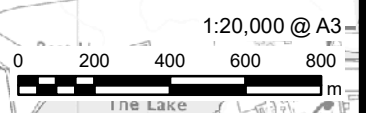
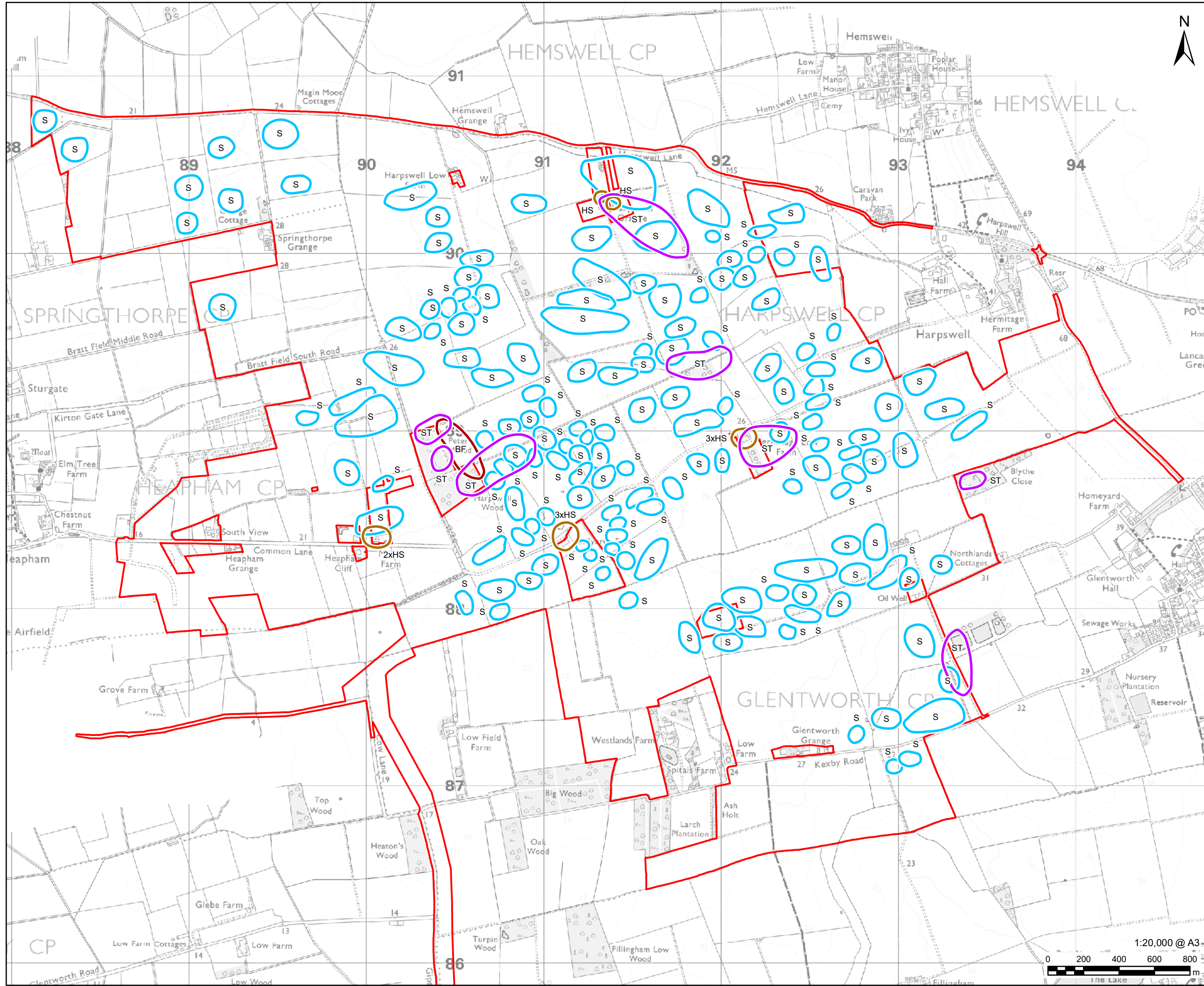
Figure 9-7-1 Page 1 of 6

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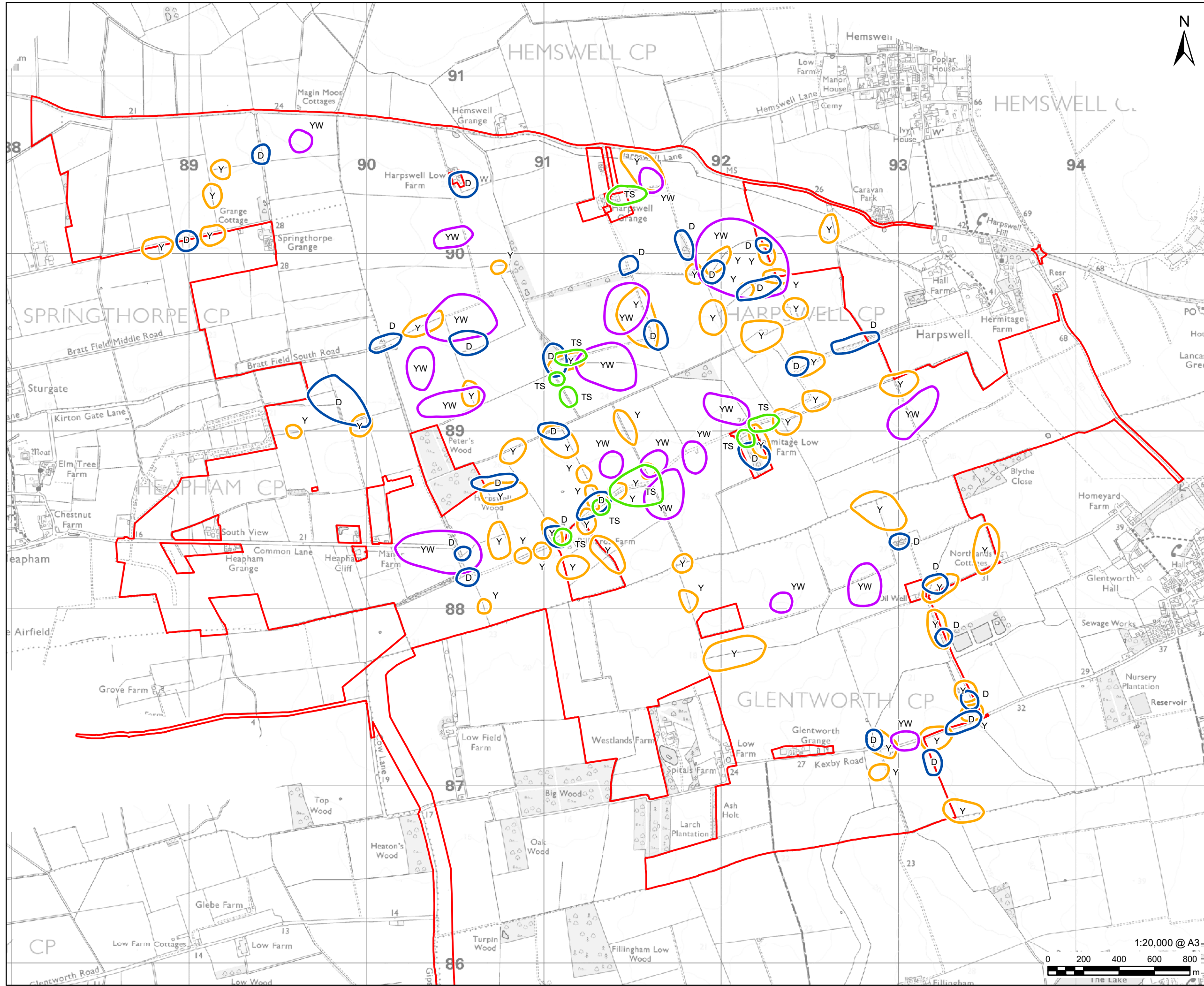
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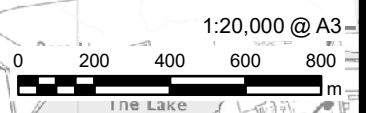
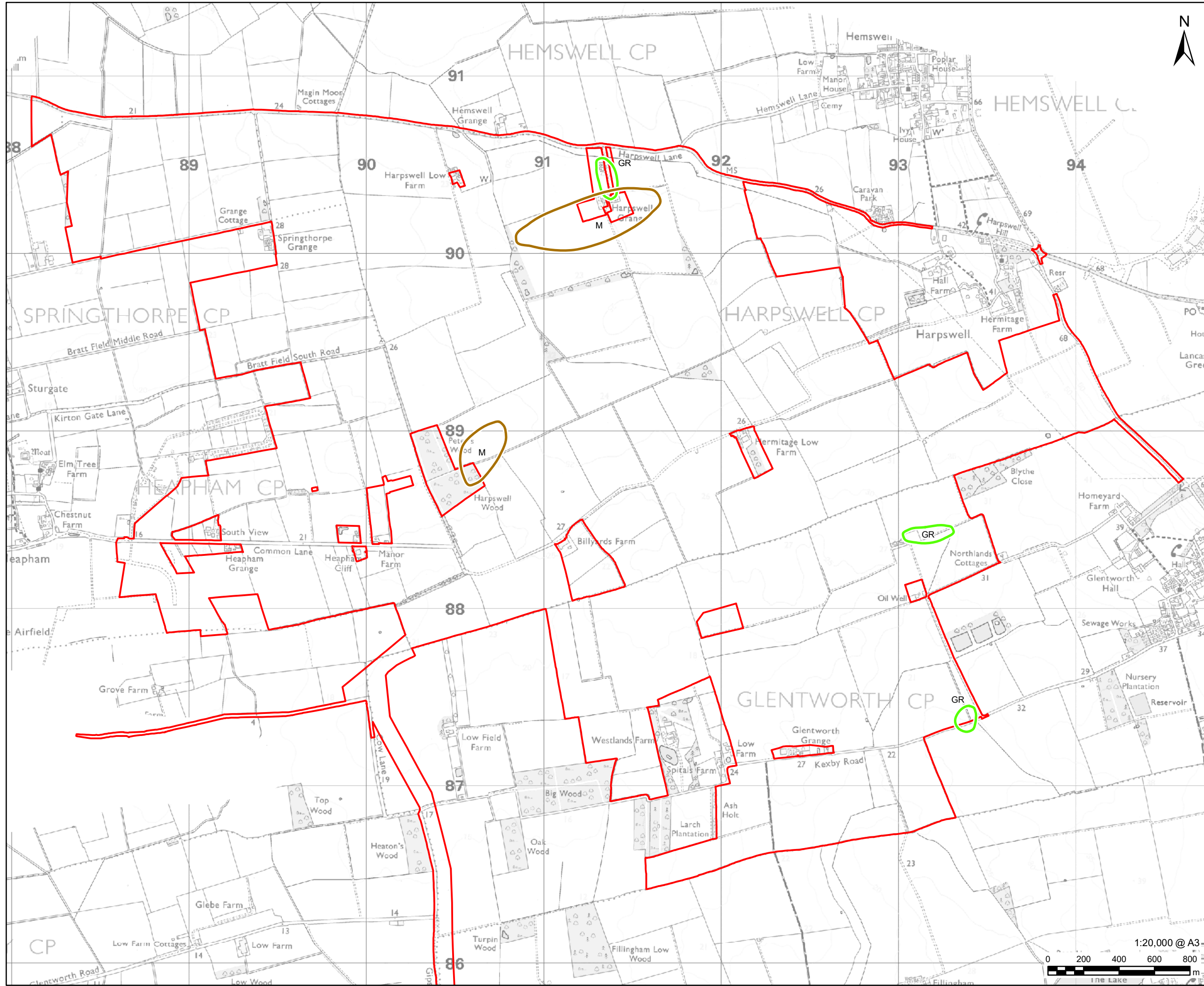
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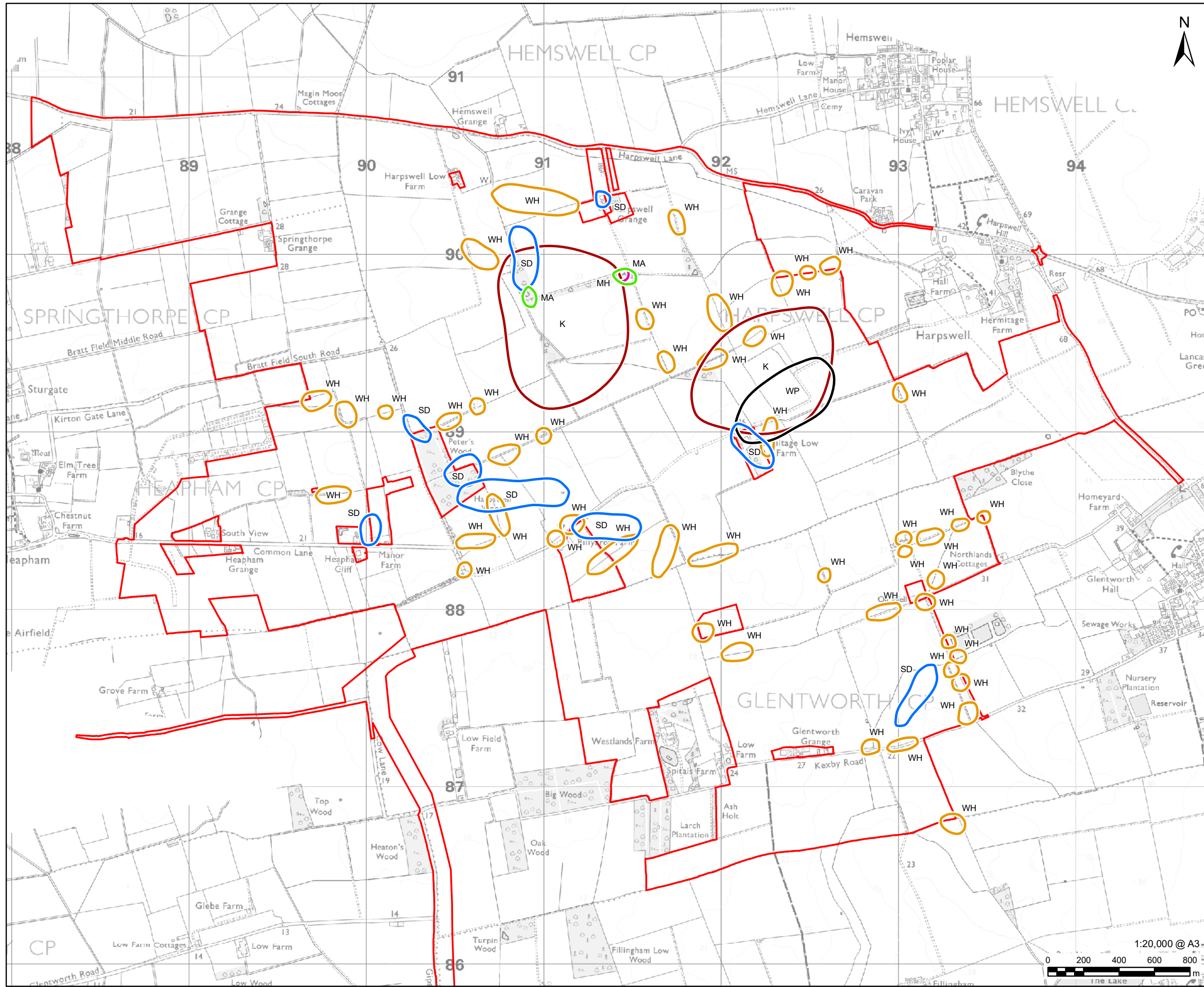
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- LEGEND**
- Order Limits
  - Breeding Bird Territory
  - Mallard, MA
  - Moorhen, MH
  - Stock Dove, SD
  - Woodpigeon, WP
  - Kestrel, K
  - Whitethroat, WH

**NOTES**

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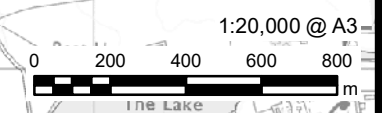
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**FIGURE TITLE**

Distribution of Territories of Species of Conservation Concern  
Amber List Species (1/2)

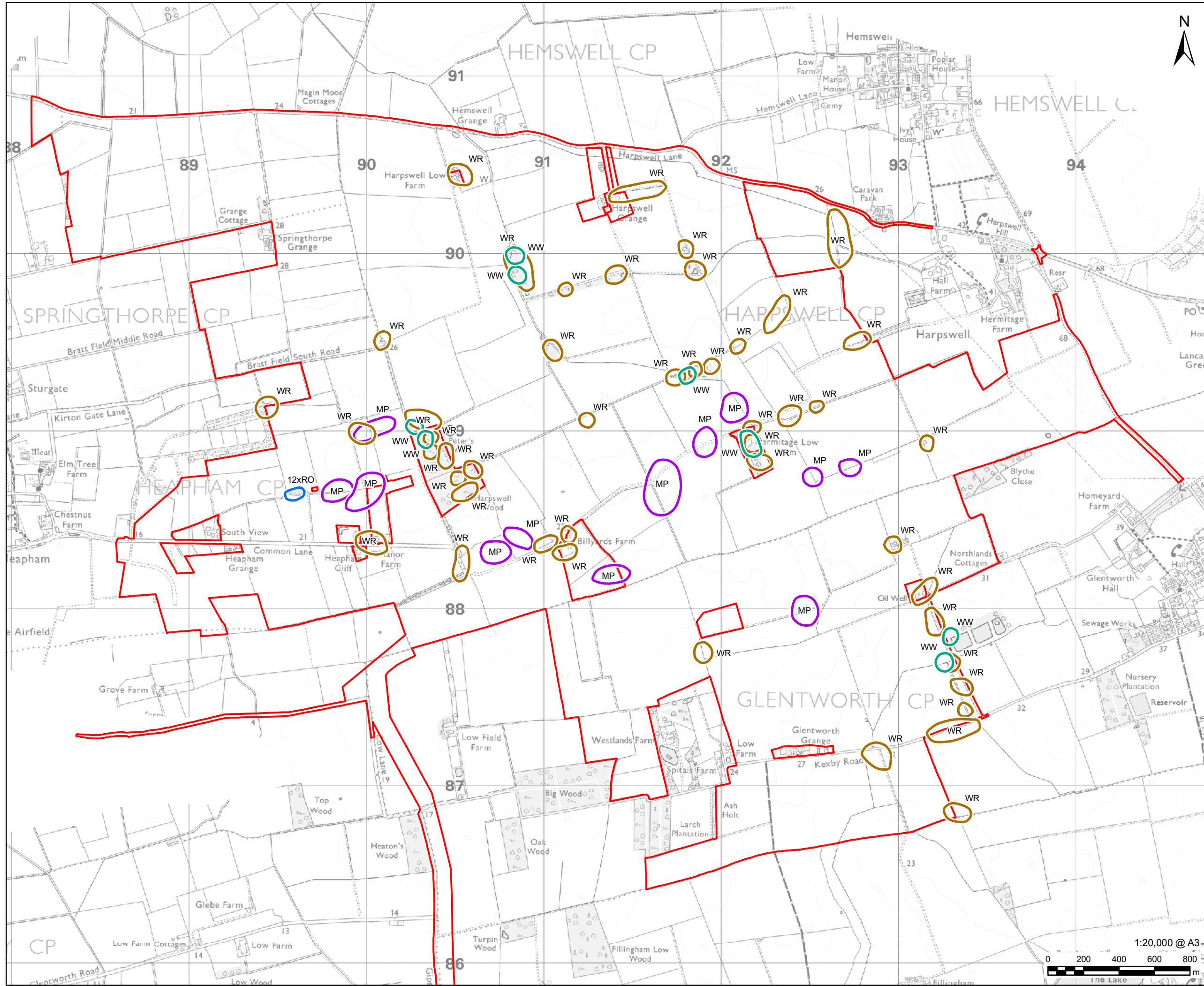
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Figure 9-7-1 Page 5 of 6



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## Annex B Records of Bird Species Returned through GLNP and NBGRC

Common Name	Scientific Name	Year most recent record	of Conservation Designation
Arctic Tern	<i>Sterna paradisaea</i>	2018	BoCC Amber, Annex 1
Barn Owl	<i>Tyto alba</i>	2020	WCA Sch 1, Notts BAP
Bittern	<i>Botaurus stellaris</i>	2014	BoCC Amber, Annex 1, Priority Species, Sch 1 WCA
Black Redstart	<i>Phoenicurus ochruros</i>	2016	BoCC Amber, WCA Sch 1
Black-tailed Godwit	<i>Limosa limosa</i>	2018	BoCC Red, Priority Species, WCA Sch 1
Black Tern	<i>Chlidonias niger</i>	2018	Annex 1
Blue Tit	<i>Cyanistes caeruleus</i>	2013	-
Brambling	<i>Fringilla montifringilla</i>	2019	Sch 1 WCA
Buzzard	<i>Buteo buteo</i>	2016	-
Canada Goose	<i>Branta canadensis</i>	2014	-
Caspian Gull	<i>Larus cachinnans</i>	2018	BoCC Amber
Cattle Egret	<i>Bubulcus ibis</i>	2018	BoCC Amber
Cetti's Warbler	<i>Cettia cetti</i>	2017	WCA Sch 1
Chiffchaff	<i>Phylloscopus collybita</i>	2019	-
Common Gull	<i>Larus canus</i>	2019	BoCC Amber
Common Sandpiper	<i>Actitis hypoleucos</i>	2019	BoCC Amber
Common Scoter	<i>Melanitta nigra</i>	2018	BoCC Red, Priority Species, WCA Sch 1
Coot	<i>Fulica atra</i>	2019	-
Cormorant	<i>Phalacrocorax carbo</i>	2019	-
Corncrake	<i>Crex crex</i>	2015	BoCC Red, Annex 1, WCA Sch 1
Crossbill	<i>Loxia curvirostra</i>	2018	WCA Sch 1
Cuckoo	<i>Cuculus canorus</i>	2013	BoCC Red, Priority Species

Curlew	<i>Numenius arquata</i>	2018	BoCC Red, Priority Species, Lincs BAP
Fieldfare	<i>Turdus pilaris</i>	2020	WCA Sch 1, BoCC Red
Gadwall	<i>Mareca strepera</i>	2019	BoCC Amber
Goldfinch	<i>Carduelis carduelis</i>	2019	-
Goshawk	<i>Accipiter gentilis</i>	2014	Annex 1, WCA Sch 1
Grasshopper Warbler	<i>Locustella naevia</i>	2017	BoCC Red, Priority Species
Great Black-backed Gull	<i>Larus marinus</i>	2015	BoCC Amber
Great Crested Grebe	<i>Podiceps cristatus</i>	2019	-
Great Spotted Woodpecker	<i>Dendrocopos major</i>	2019	-
Great Tit	<i>Parus major</i>	2013	-
Great White Egret	<i>Ardea alba</i>	2019	Annex 1, BoCC Amber
Green Sandpiper	<i>Tringa ochropus</i>	2020	BoCC Amber
Green Woodpecker	<i>Picus viridis</i>	2015	-
Grey Heron	<i>Ardea cinerea</i>	2019	-
Grey Partridge	<i>Perdix perdix</i>	2017	BoCC Red, Priority Species, Lincs BAP
Grey Plover	<i>Pluvialis squatarola</i>	2018	BoCC Amber
Greylag Goose	<i>Anser anser</i>	2020	BoCC Amber
Hen Harrier	<i>Circus cyaneus</i>	2019	BoCC Red, Annex 1
Hobby	<i>Falco subbuteo</i>	2020	WCA Sch 1
Honey-buzzard	<i>Pernis apivorus</i>	2015	BoCC Amber, Annex 1
House Martin	<i>Delichon urbicum</i>	2019	BoCC Red
Jay	<i>Garrulus glandarius</i>	2019	-
Kestrel	<i>Falco tinnunculus</i>	2019	BoCC Amber
Kingfisher	<i>Alcedo atthis</i>	2018	Annex 1, WCA Sch 1
Lapwing	<i>Vanellus vanellus</i>	2016	BoCC Red, Priority Species, Lincs BAP
Lesser Black-backed Gull	<i>Larus fuscus</i>	2019	BoCC Amber
Lesser Whitethroat	<i>Sylvia curruca</i>	2019	-
Little Egret	<i>Egretta garzetta</i>	2020	Annex 1

Little Grebe	<i>Tachybaptus ruficollis</i>	2015	-
Little Owl	<i>Athene noctua</i>	2016	-
Long-tailed Tit	<i>Aegithalos caudatus</i>	2019	-
Mallard	<i>Anas platyrhynchos</i>	2015	BoCC Amber
Marsh Harrier	<i>Circus aeruginosus</i>	2019	BoCC Amber, Annex 1
Meadow Pipit	<i>Anthus pratensis</i>	2019	BoCC Amber
Mediterranean Gull	<i>Ichthyaetus melanocephalus</i>	2012	BoCC Amber, Annex 1, Sch 1 WCA
Merlin	<i>Falco columbarius</i>	2020	Annex 1, WCA Sch 1
Montagu's Harrier	<i>Circus pygargus</i>	2013	BoCC Red, Annex 1
Mute Swan	<i>Cygnus olor</i>	2019	-
Osprey	<i>Pandion haliaetus</i>	2018	BoCC Amber, Annex 1, WCA Sch 1
Oystercatcher	<i>Haematopus ostralegus</i>	2017	BoCC Amber
Peregrine	<i>Falco peregrinus</i>	2020	Annex 1, WCA Sch 1
Pied Wagtail	<i>Motacilla alba</i>	2015	-
Pink-footed Goose	<i>Anser brachyrhynchus</i>	2015	BoCC Amber
Pintail	<i>Anas acuta</i>	2018	BoCC Amber
Quail	<i>Coturnix coturnix</i>	2018	BoCC Amber, WCA Sch 1
Raven	<i>Corvus corax</i>	2017	-
Red-legged Partridge	<i>Alectoris rufa</i>	2018	-
Red Kite	<i>Milvus milvus</i>	2020	Annex 1, WCA Sch 1
Redwing	<i>Turdus iliacus</i>	2020	Sch 1 WCA, BoCC Amber
Reed Bunting	<i>Emberiza schoeniclus</i>	2019	BoCC Amber, Priority Species, Lincs BAP
Ring-necked Parakeet	<i>Psittacula krameri</i>	2019	-
Ring Ouzel	<i>Turdus torquatus</i>	2019	BoCC Red
Rock Dove	<i>Columba livia</i>	2019	-
Rook	<i>Corvus frugilegus</i>	2019	BoCC Amber
Ruff	<i>Calidris pugnax</i>	2019	BoCC Red, Annex 1, WCA Sch 1

Sand Martin	<i>Riparia riparia</i>	2019	-
Scaup	<i>Aythya marila</i>	2016	BoCC Red, Priority Species, WCA Sch 1
Shelduck	<i>Tadorna tadorna</i>	2016	BoCC Amber
Short-eared Owl	<i>Asio flammeus</i>	2018	BoCC Amber, Annex 1
Shoveler	<i>Spatula clypeata</i>	2016	BoCC Amber
Skylark	<i>Alauda arvensis</i>	2019	BoCC Red, Priority species, Lincs BAP
Snipe	<i>Gallinago gallinago</i>	2014	BoCC Amber, Lincs BAP
Sparrowhawk	<i>Accipiter nisus</i>	2013	BoCC Amber
Stock Dove	<i>Columba oenas</i>	2014	BoCC Amber
Swallow	<i>Hirundo rustica</i>	2019	-
Tawny Owl	<i>Strix aluco</i>	2015	BoCC Amber
Teal	<i>Anas crecca</i>	2015	BoCC Amber
Tree Sparrow	<i>Passer montanus</i>	2015	BoCC Red, Priority Species, Lincs BAP
Tufted Duck	<i>Aythya fuligula</i>	2019	-
Turtle Dove	<i>Streptopelia turtur</i>	2016	BoCC Red, Priority Species, Lincs BAP
Water Rail	<i>Rallus aquaticus</i>	2016	-
Whimbrel	<i>Numenius phaeopus</i>	2014	BoCC Red, WCA Sch 1
Whinchat	<i>Saxicola rubetra</i>	2018	BoCC Red
Whooper Swan	<i>Cygnus cygnus</i>	2019	BoCC Amber, Annex 1, WCA Sch 1
Wigeon	<i>Mareca penelope</i>	2019	BoCC Amber
Willow Warbler	<i>Phylloscopus trochilus</i>	2019	BoCC Amber
Yellow Wagtail	<i>Motacilla flava</i>	2019	BoCC Amber, Priority Species, Lincs BAP

## **Annex C Confidential information regarding specially protected bird species**

This section has been redacted from the main report as it contains sensitive information on the presence, or otherwise, of specially protected bird species.