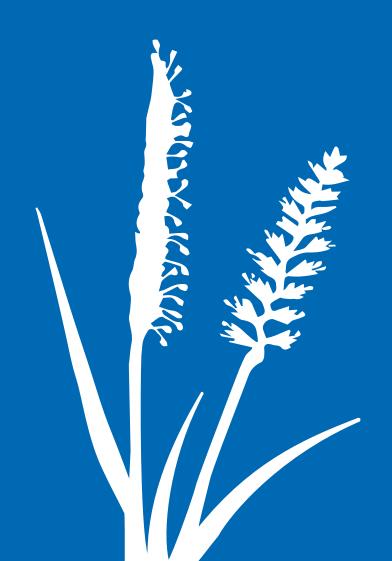
# Appendix 6.4 Breeding Bird Survey Report



# **Springwell Solar Farm**

**Breeding Bird Survey Report** 



# **Quality information:**

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#### 1. Introduction

#### 1.1. Purpose of this report

1.1.1. This report presents the results of the survey for breeding birds undertaken by RSK Biocensus for the proposed Springwell solar farm, located on land near Ashby de la Launde, Lincolnshire (central National Grid Reference TF056569). The survey area comprised the land within the red-line boundary on which the solar farm will be located (split into three areas – Springwell East, Springwell Central and Springwell West, see Figure 1) as well as parcels of land connecting these three areas where associated infrastructure such as cabling and access roads will be located. This appraisal was carried out on behalf of EDF.

#### 1.2. Ecological context

- 1.2.1 The c.1,772 ha survey area is located on land surrounding the villages of Blankney, Scopwick, and Ashby de la Launde in the district of North Kesteven, Lincolnshire. The survey area is dominated by agricultural land and improved grassland with accompanying hedgerows, interspersed with multiple small to medium sized areas of broadleaved woodland. There are fourteen ponds within the survey area. Streams and ditches intersect many of the agricultural fields, although most were dry at the time of survey.
- 1.2.2 The surrounding landscape is largely arable with a mixture of villages, farm complexes, woodland, hedgerows and some scattered residential properties, as well as the RAF Digby military base to the north-west.

#### 1.3. Development proposals

1.3.1 The assessment is based on the red-line boundary of the site and connecting areas as shown in Figure 1. The proposals are for the installation of solar panels and other associated infrastructure within the site boundary.

#### 1.4. Structure of this report

- 1.4.1 This report is structured as follows:
  - Section 2 presents legislation and guidance relevant to breeding birds;
  - Section 3 describes the methods adopted for the collection and interpretation of breeding bird data;
  - Section 4 presents the results of the desk study and field surveys;
  - Section 5 evaluates the results of the desk study and field surveys and assesses the importance of the breeding bird populations recorded; and
  - Section 6 summarises the findings of the breeding bird survey report.



# 2. Legislation and Guidance

#### 2.1. Overview

2.1.1 Relevant legislation and guidance relating to breeding birds is summarised below. This legislation and guidance have been used to inform the evaluation of the conservation status of the species recorded during the desk study and field surveys, and when assessing the importance of the breeding bird populations present.

#### 2.2. Legislation

#### European Commission Birds Directive (2009/147/EC)

- 2.2.1 Certain UK bird species (including some wintering species) are protected at an international level under the European Commission (EC) Directive on the Conservation of Wild Birds 2009 (2009/147/EC). These species are afforded enhanced legal protection and European Union member states have a responsibility to maintain populations of these species. This Directive is transposed into English law through the Conservation of Habitats and Species Regulations 2017 (as amended).
- 2.2.2 Species listed on Annex 1 of the Directive are those for which the UK Government is required to take special conservation measures (including the designation of land as Special Protection Areas (SPAs)) to conserve populations of these species throughout their distributions. These sites form part of the UK's national site network of core sites that are protected for rare and threatened species.
- 2.2.3 Bird species listed on Annex 1 of the Directive are those which are deemed to be:
  - in danger of extinction;
  - vulnerable to specific changes to their habitats;
  - considered rare due to their small population sizes and/or restricted local distributions; and
  - in need of particular attention due to the specific nature of their habitat requirements.

#### Wildlife and Countryside Act 1981 (as amended)

- 2.2.4 Wild birds are protected in the UK under Section 1 of the Wildlife and Countryside Act (WCA) 1981 (as amended). This protection was extended by the Countryside Rights of Way (CRoW) Act 2000. Under this legislation it is an offence to:
  - kill, injure or take any wild bird;
  - take, damage or destroy the nest of any wild bird while that nest is in use or being built; and
  - take or destroy an egg of any wild bird.



- 2.2.5 In addition, certain species are listed on Schedule 1 of the WCA and receive special protection under Sections 1(4) and 1(5), which confer penalties where the above-mentioned offences are committed, in addition to making it an offence to:
  - disturb any such bird whilst building its nest or whilst it is in or near a nest containing eggs or dependent young; and
  - disturb the dependent young of such a bird.

#### Natural Environment and Rural Communities Act 2006

- 2.2.6 The Natural Environment and Rural Communities (NERC) Act 2006 requires local and governmental authorities and departments to have regard to the conservation of biodiversity and a range of measures associated with public rights of way and other rural affairs.
- 2.2.7 Forty-nine bird species are listed as being Species of Principal Importance for conservation in England under Section 41 (S41) of the NERC Act 2006, and as such they are a material consideration during the planning process. These Species of Principal Importance (SPI) are those identified as requiring action under the UK Biodiversity Action Plan (UKBAP), which continue to be regarded as species of conservation priority under the UK Post-2010 Biodiversity Framework (which succeeded the UKBAP in July 2012).

#### 2.3. Guidance

#### National Planning Policy Framework

2.3.1 The National Planning Policy Framework (NPPF, 2021) sets out the government's planning policies for England and how these are expected to be applied. This includes requirements for the contribution to and enhancement of the natural environment, including habitats and biodiversity. The NPPF specifies the obligations that local authorities and the UK government have regarding statutory designated sites and protected species under UK and international legislation and how these are to be delivered in the planning system.

#### **Birds of Conservation Concern**

2.3.2 The Birds of Conservation Concern (BoCC) Red, Amber and Green lists categorise the UK's regularly occurring bird species according to their level of conservation concern (Stanbury et al., 2021). Although these listings confer no legal protection, they are useful in guiding conservation action for individual species when birds may be affected by plans or projects.

#### **Red list species**

- 2.3.3 These are species of high conservation concern, including:
  - species that are globally threatened according to the International Union for the Conservation of Nature (IUCN) criteria;
  - species with a historical breeding decline that have not shown a substantial recent recovery;



- species that have shown a severe breeding decline over the last 25 years or longer term;
- species that have shown a severe breeding range decline over the last 25 years or longer term; and
- species whose non-breeding populations have declined over the last 25 years or longer term.

#### **Amber list species**

- 2.3.4 These are species of medium conservation concern, including:
  - · species of European Conservation Concern;
  - species whose populations have declined historically but which have made a substantial recent recovery;
  - species whose breeding populations have declined moderately over the last 25 years or longer term;
  - species that have shown a moderate breeding range decline over the last 25 years or longer term;
  - species whose non-breeding populations have declined moderately over the last 25 years or longer term; and
  - rare breeders or non-breeding rarity species with internationally important or localised populations.

#### **Green list species**

- 2.3.5 Green list species fulfil none of the criteria detailed above. As such, they have stable or increasing populations and are not currently of conservation concern.
- 2.3.6 Non-native species such as Canada goose (*Branta canadensis*) are not afforded Red, Amber, or Green list status.

#### Lincolnshire Biodiversity Action Plan

- 2.3.7 The Lincolnshire Biodiversity Action Plan (2011-2020 3<sup>rd</sup> ed.) includes a species action plan (SAP) for farmland birds, which includes the following species:
  - grey partridge (Perdix perdix);
  - lapwing (Vanellus vanellus);
  - curlew (Numenius arquata);
  - snipe (Gallinago gallinago);
  - redshank (*Tringa totanus*);
  - turtle dove (Streptopelia turtur);
  - barn owl (Tyto alba).
  - skylark (Alauda arvensis);
  - starling (Sturnus vulgaris);



- tree sparrow (Passer montanus);
- yellow wagtail (Motacilla flava);
- bullfinch (Pyrrhula pyrrhula);
- linnet (Linaria cannabina);
- yellowhammer (Emberiza citrinella);
- corn bunting (Miliaria calandra);
- reed bunting (Emberiza schoeniclus);



#### 3. Methods

#### 3.1. Desk study

- 3.1.1 To provide supplementary data on breeding bird species known to be present in the vicinity of the study area, the following baseline data was obtained:
- 3.1.2 A data report was also obtained from the British Trust for Ornithology (BTO, 2022). This provided records from relevant 1km and 10km grid squares from 2007-2011 and 2019-2023; specifically, two 10km grid squares (TF05 and TF06) and 36 1km grid squares.
- 3.1.3 For reasons of confidentiality, records for certain rare breeding species (e.g. Montagu's harrier (*Circus pygargus*)) were provided for the nearest 50km grid square.
- 3.1.4 MAGIC (the Multi-Agency Geographic Information website) was consulted to view statutory designated nature conservation sites designated for features of ornithological interest within 10km of the site boundary for internationally designated sites and 2km of the site boundary for nationally designated sites.
- 3.1.5 The relevant local environmental records centre, Greater Lincolnshire Nature Partnership, was consulted in January 2023 for records of protected and notable species within 2km of the site boundary. The results of this data search are included in the Preliminary Ecological Appraisal Report (RSK, 2023).

#### 3.2. Field surveys

- 3.2.1 The field surveys for breeding birds were undertaken during March to July 2023 inclusive, in accordance with the Bird Survey Guidelines for Assessing Ecological Impacts (BSG) (Bird Survey and Assessment Steering Group, 2023). These comprised a series of five survey visits, with a minimum period of 14 days between each visit.
- 3.2.2 Due to its large size, the survey area was divided into eight sub-areas or transects for the purpose of the field surveys, which each sub-area being surveyed once per visit, see Figure 2. Birds observed up to a distance of 50m beyond the survey boundary were also recorded, due to the possibility that secondary impacts from the proposed development could impact on these populations.
- 3.2.3 During survey visits, suitably experienced RSK Biocensus ornithologists walked pre-determined transect routes throughout the survey area, recording all bird species encountered (either visually or through their vocalisations) onto GIS Field Maps software using standard BTO species codes and behaviour notation (Marchant, 1983). In open habitats, such as the large agricultural fields that dominate the survey area, transect routes were selected so that each field could be viewed entirely from the transect route, and all boundary hedgerows were walked where practical to do so. In closed habitats, such as the parcels of woodland on site, transect routes were selected so that they passed within 50m of all sections of the habitat.

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The direction with which the transects were walked was alternated for each survey visit, in order to reduce the risk of observational bias occurring in the results caused by visiting the same areas at the same time of the morning on each visit. In addition, surveyors avoided undertaking adjacent transects on the same visit to minimise double counting of birds. The transect routes are displayed on Figure 2.

- 3.2.4 Surveys were undertaken between the hours of dawn and 11am to coincide with the highest levels of bird activity.
- 3.2.5 Surveys were undertaken in suitable weather conditions, avoiding extreme temperatures, high winds, heavy rain, snow or fog, during which bird activity may be atypical and/or surveying may be impractical. The dates, timings and weather conditions for the survey visits are listed in Appendix 1.

#### 3.3. Interpretation of survey results

#### Assessment of breeding status

- 3.3.1 The results of the five survey visits were used to assess the breeding statuses of the bird species recorded within the site, in accordance with the criteria presented in Gilbert et al., (1998) and taking into consideration understanding of the breeding ecology of the species in question. These criteria are based on the principle that many species are territorial during the breeding season and, as such, observation of certain behaviours (e.g. singing, displaying, aggressive interactions) can be used to infer breeding or likely breeding by a given species.
- 3.3.2 Breeding by a particular species within the site can be assessed as being 'Confirmed' if:
  - · a nest or used nest was found;
  - a nest with young was seen or heard;
  - recently fledged young were seen or heard;
  - adults were seen entering or leaving a nest site, or an adult was seen incubating; or
  - a territory was positively identified due to the number and type of observations recorded (i.e. a combination of observations of a male singing from the same area of suitable nesting habitat on multiple occasions, adults seen visiting a probable nest site at that location and/or observation of a pair at that location).
- 3.3.3 Breeding by a particular species within the site can be assessed as being 'Probable' if:
  - nest-building was observed;
  - a bird was seen visiting a probable nest site on a single occasion;
  - agitated behaviour or alarm calls were observed in or near suitable nesting habitat;
  - a pair was seen in suitable nesting habitat during the breeding season; courtship and/or display were seen; or



- a male was heard singing in the same location on two or more occasions.
- 3.3.4 Breeding by a particular species within the site can be assessed as being 'Possible' if:
  - birds were seen in or near suitable nesting habitat during the breeding season; or
  - a male was heard singing on one occasion during the breeding season.
- 3.3.5 Species not observed exhibiting the behaviours above are assessed as 'Non-breeding'.
- 3.3.6 A peak count was derived for each species as being the highest number of individuals observed across the entire survey area on any one visit.

#### Conservation status

- 3.3.7 The assessment of the importance of the breeding bird populations recorded took into consideration the conservation statuses of the species recorded. Species afforded special statutory protection or included on lists of species of conservation interest were evaluated. These included:
  - Wildlife and Countryside Act 1981 (as amended) Schedule 1 species;
  - EC Birds Directive (2009/147/EC) Annex 1 species;
  - NERC Act 2006 S41 Species of Principal Importance;
  - · BoCC Red and Amber list species; and
  - Relevant SAP species for Lincolnshire.

#### Species abundance

3.3.8 The importance of the breeding bird populations recorded was assessed in the context of the sizes of those populations relative to international, national, and regional population estimates for the species in question. National population estimates used for this analysis are as presented by Woodward et al., (2020). Assessment of county, district, or local importance was based on professional judgement and using county population estimates where available (as presented in the appropriate county bird report).

#### Species diversity

3.3.9 The importance of the breeding bird assemblage recorded within the site was assessed according to its level of species diversity (i.e., the number of species breeding or potentially breeding), in reference to the criteria described by Fuller (1980) indicated in Table 1.

Table 1 Breeding bird assemblage importance criteria (Fuller 1980) and adapted criteria

Breeding bird assemblage Fuller (1980)
importance category criteria Adapted criteria



National	More than 85	More than 85
Regional	70-84	70-84
County	50-69	50-69
District	-	25-49
Local	25-49	Fewer than 25

- 3.3.10 It should be recognised that breeding birds have undergone widespread decline since these criteria were devised. As such, the qualifying number of species for a given importance category proposed by Fuller (1980) is now considered to be relatively high. This disparity is taken into account when assessing the importance of the breeding bird assemblage recorded within the study area. Assessment of county or district importance was based on professional judgement and in reference to county population data detailed within the Birds of Lincolnshire (Casey, C., et al, 2021) publication and the latest Rare Birds Breeding Panel (RBBP) report for 2020 (Eaton, M. A., et al. 2022).
- 3.3.11 The breeding bird assemblage was also evaluated in the context of the relevant Local Wildlife Site (LWS) selection criteria, which provide a mechanism for the designation and protection of areas of land that are especially important for their wildlife at a county level.
- 3.3.12 Local Wildlife Site Guidelines for Greater Lincolnshire (GLNP, 2013) sets out the criteria for the selection of LWSs within the county. This does not specify LWS selection criteria relating to breeding birds for the dominant habitat types present within the site (i.e. arable fields). However, many species potentially breeding on site are also species typical of grazing marsh; LWS selection criteria for which are specified in the LWS Guidelines. Whilst the site does not comprise grazing marsh habitat and therefore would not qualify as a grazing marsh LWS even if the breeding bird thresholds for this designation are met, comparison of the breeding bird populations recorded on site with these LWS thresholds provides an indication of the value of the assemblage at a county level.

#### 3.4 Limitations

3.4.1 Whilst desk study data are useful in providing supplementary ecological information for a study area, it should be acknowledged that these data are dependent on the submission of records to the relevant organisations (e.g., the BTO). As such, a lack of records for a particular species does not necessarily mean that the species is absent from the study area. Similarly, records of a particular species do not necessarily mean that the species is still present within the study area.



- 3.4.2 Due to adverse weather condition, one portion of the central area could not be surveyed during the third visit in late May. To ensure this section was subject to the same level of survey effort as the rest of the survey area, an additional survey visit was undertaken in early July to ensure that the whole survey area was surveyed on five occasions. Details of this additional survey visit are provided in Appendix 1. As the additional visit was conducted within the peak breeding season, and survey effort was achieved across the entire peak breeding season (i.e., March to early July inclusive), the results of the survey are valid and representative of the breeding bird assemblage of the survey area. This is not therefore considered to be a significant limitation to the survey results.
- 3.4.3 When calculating the peak count for each survey visit, the possibility of double-counting individuals or groups of birds exists where surveys were undertaken on different portions of the survey across multiple days. For the majority of species such as passerines, their relatively small territories and feeding ranges whilst nesting is deemed sufficient to minimise the risk of double-counting, as there is little movement to be expected between the different transect areas of the site. For more mobile species (e.g. waders and birds of prey), the potential for double-counting has been considered when interpreting the survey results.
- 3.4.4 It should be noted that ecological features (e.g., bird populations) are transient, and that the distributions of habitats and species may be subject to change. As such, in line with Chartered Institute of Ecology and Environmental Management (CIEEM) guidance, the ecological survey data presented in this report are considered valid for at least two years (CIEEM, 2019), after which if any significant changes have occurred to the habitats present then it may be necessary for further field surveys to be undertaken.



#### 4 Results

#### 4.1 Desk Study

4.1.1 The BTO Data Report identified confirmed or potential breeding by 71 species within 2km of the site boundary in 2007-2011, and by 34 species in 2019-2023. 91 species were recorded within 2km of the site boundary during 2007-2011, including one species recorded within 50km (Montagu's harrier). 66 species were recorded breeding within 10km of the site boundary during 2019-2023. Table 2 summaries the results of the BTO Data Report. Full BTO data are provided in Appendix 2.

Table 2 Species recorded within 2km and 10km of the site boundary in 2007-2011 and 2019-2023

	200	7-11	2019-2023		
No. Species	Within 2km	Within 10km	Within 2km	Within 10km	
Breeding	71	91	34	66	
Present (non- breeding)	N/A	N/A	46	52	

- 4.1.2 The background data report from the Greater Lincolnshire Nature Partnership returned records of 38 bird species within 2 km of the survey area, of which 86% were recorded from RAF Digby. Of these species, eight are listed on Annex 1 of the Birds Directive, including red kite (Milvus milvus), marsh harrier (Circus aeruginosus), and peregrine (Falco peregrinus), and 15, including the 8 above, are included in Schedule 1 of the Wildlife and Countryside Act 1981, including quail (Coturnix coturnix), barn owl (Tyto alba), hobby (Falco subbuteo) and firecrest (Regulus ignicapilla).
- 4.1.3 Desk based scoping identified no designated sites (e.g. SPAs, Ramsar sites, Sites of Special Scientific Interest) relevant to the proposed development with regard to features of ornithological interest. The nearest SPA/Ramsar site is The Wash located approximately 37km to the southeast of the development site.

#### 4.2 Field Surveys

4.1.1 A total of 86 bird species were recorded during the field surveys of the site between March and July 2023 inclusive. The peak counts and breeding statuses of these species are summarised in Table 3, in reference to the assessment criteria described in Section 3.3, with descriptions provided where necessary. Full breeding bird survey data from March to July 2023 inclusive are provided in Appendix 3.



Table 3 Summary of species recorded during the 2023 field surveys

Comm on name	Scientific name	Peak count	Breeding status	Description
Greylag Goose	Anser anser	12	Non-breeding	Individuals and small groups were occasionally observed feeding in arable fields or as fly-overs, but no evidence of breeding was noted
Whooper Swan	Cygnus cygnus	120	Non-breeding	Two flocks were observed migrating north during visit 1
Shelduck	Tadorna tadorna	3	Non-breeding	Occasional fly-over, presumed to be moving between off-site waterbodies
Gadwall	Mareca strepera	2	Non-breeding	Two males were feeding in the disused quarry next to RAF Digby during visit 3
Mallard	Anas platyrhynchos	16	Possible	Females were observed in suitable wet ditches on two visits, otherwise occasional fly-over
Red- legged Partridge	Alectoris rufa	30	Probable	Pairs and small coveys were frequently encountered across all three areas. Likely released for shooting
Grey Partridge	Perdix perdix	30	Confirmed	Recently fledged young observed in the western area.  Multiple pairs observed across all three areas. 14  possible territories
Quail	Coturnix coturnix	2	Probable	Two singing males present – one in the western area during visits 4 & 5, and one in the central area during visit 4
Pheasant	Phasianus colchicus	28	Confirmed	Recently fledged juveniles observed. Frequently encountered across all three areas. Likely released for shooting
Little Grebe	Tachybaptus ruficollis	1	Confirmed	An adult was observed taking food into undergrowth in the disused quarry next to RAF Digby during visit 3
Grey Heron	Ardea cinerea	2	Non-breeding	Two fly-overs observed during the survey



Cormora nt	Phalacrocorax carbo	1	Non-breeding	One fly-over observed during the survey
Sparrowh awk	Accipiter nisus	3	Possible	Adults were observed in suitable breeding habitat in all three areas.
Marsh Harrier	Circus aeruginosus	1	Non-breeding	An adult female was observed twice in flight in the central section during visit 3, both times coming from the direction of RAF Digby where suitable nesting habitat is present
Red Kite	Milvus milvus	7	Non-breeding	Singles and pairs of birds were observed in all three areas, particularly in the eastern area where it was thought that a pair were likely nesting in woodland approximately 400m north of the site. Four birds were observed together in the eastern area during visit 5, feeding over a recently harvested field
Buzzard	Buteo buteo	12	Confirmed	An active nest was observed in a stand of woodland in the western area
Moorhen	Gallinula chloropus	2	Probable	A pair were in the disused quarry next to RAF Digby during visits 2 & 3
Coot	Fulica atra	3	Confirmed	A pair with one chick were in the disused quarry next to RAF Digby during visit 3
Oystercat cher	Haematopus ostralegus	4	Possible	A pair were in the disused quarry next to RAF Digby during visits 2 & 3, otherwise occasional fly-over
Lapwing	Vanellus vanellus	25	Probable	Displaying birds were observed in five bare or recently ploughed fields across the eastern and central areas, with a minimum of 3 and 8 pairs present respectively (i.e. 11 pairs in total)
Curlew	Numenius arquata	3	Non-breeding	A pair were observed in flight and heard calling on multiple visits from the large grassland field at RAF Digby where breeding is suspected, a minimum of 250m from the site boundary. A pair flew high east over the eastern area during visit 4. There were no observations of birds on the ground within the survey area



Snipe	Gallinago gallinago	11	Non-breeding	Wintering birds were present on patches of wet grassland in the eastern area during visits 1 & 2
Black- headed Gull	Chroicocephal us ridibundus	11	Non-breeding	Small flocks were occasionally observed feeding on recently ploughed fields
Common Gull	Larus canus	17	Non-breeding	One flock was observed feeding on a recently ploughed field during visit 2
Herring Gull	Larus argentatus	39	Non-breeding	Small flocks were occasionally observed feeding on recently ploughed fields, and occasional fly-over
Lesser Black- backed Gull	Larus fuscus	40	Non-breeding	Small flocks were occasionally observed feeding on recently ploughed fields, and occasional fly-over
Feral Pigeon	Columba livia	24	Probable	Pairs were observed around suitable nesting buildings in the eastern and central sections
Stock Dove	Columba oenas	38	Confirmed	Singing males and pairs were frequently observed in suitable nesting habitat in all three areas. Small flocks were frequently observed feeding in arable fields. 23 possible territories
Woodpig eon	Columba palumbus	534	Confirmed	Singing males and pairs were frequently observed in suitable nesting habitat in all three areas. Medium to large sized flocks were frequently observed feeding in arable fields
Collared Dove	Streptopelia decaocto	1	Non-breeding	Single birds were observed on two visits, likely from nest sites in the adjacent villages
Cuckoo	Cuculus canorus	3	Possible	Three singing males were across the eastern and central areas during visit 3
Barn Owl	Tyto alba	2	Confirmed	Separate pairs were observed entering, roosting and hunting in the vicinity of two nest sites – a barn in the north-east corner of the eastern area, and a former military building in the north-west corner of the central area



Little Owl	Athene noctua	2	Probable	Up to two birds were observed in a barn in the central section on three visits
Swift	Apus apus	11	Non-breeding	Occasional fly-over, presumably from nest sites in the adjacent villages
Great Spotted Woodpec ker	Dendrocopos major	8	Probable	Frequently recorded in the woodlands and mature hedgerows
Green Woodpec ker	Picus viridis	4	Probable	Frequently recorded in the eastern and western areas
Kestrel	Falco tinnunculus	12	Confirmed	A female with two recently fledged young were observed in the eastern area. Pairs were observed in all three areas. 6 possible territories
Peregrin e	Falco peregrinus	2	Non-breeding	A pair were observed in the western area on multiple occasions during visits 1 & 2, including commuting to and from the large active quarry 100m to the southwest which is considered a likely nest site. Possibly the same male flew over the eastern area during visit 2
Jay	Garrulus glandarius	3	Probable	Alarm calling adults observed in suitable breeding habitat
Magpie	Pica pica	13	Probable	Alarm calling adults observed in suitable breeding habitat
Jackdaw	Corvus monedula	97	Probable	Pairs were observed in suitable breeding habitat. Small to medium sized flocks were frequently observed feeding in arable fields
Rook	Corvus frugilegus	301	Confirmed	One active rookery was recorded within the survey area – in trees in the south-west corner of the eastern area.  Medium to large sized flocks were frequently observed feeding in arable fields
Carrion Crow	Corvus corone	28	Possible	Adults were observed in suitable breeding habitat in all three areas



Raven	Corvus corax	4	Confirmed	An active nest was observed on a pylon immediately adjacent to the north-west corner of the western area, otherwise occasional fly-over
Coal Tit	Periparus ater	10	Confirmed	Recently fledged young observed in the eastern area
Blue Tit	Cyanistes caeruleus	254	Confirmed	Recently fledged young observed in all three areas
Great Tit	Parus major	137	Confirmed	Recently fledged young observed in all three areas
Skylark	Alauda arvensis	271	Confirmed	Very high numbers recorded, particularly across the central and western areas. Recently fledged young were observed in the western area. A minimum of 184 territories present
Sand Martin	Riparia riparia	1	Non-breeding	A single passage migrant was recorded during visit 1
Swallow	Hirundo rustica	35	Confirmed	Adults seen taking food to an active nest
House Martin	Delichon urbicum	14	Non-breeding	Feeding birds were observed on three visits, presumably from nest sites in the adjacent villages
Long- tailed Tit	Aegithalos caudatus	56	Confirmed	Recently fledged young observed in all three areas
Willow Warbler	Phylloscopus trochilus	8	Confirmed	Recently fledged young observed in the central area.  12 possible territories
Chiffchaff	Phylloscopus collybita	59	Confirmed	Very common. Multiple territories confirmed and pairs observed in suitable nesting habitat
Sedge Warbler	Acrocephalus schoenobaenu s	3	Possible	Three singing males recorded in the eastern and central areas during visit 3 only
Blackcap	Sylvia atricapilla	41	Confirmed	Recently fledged young observed in the western area.  Common across all three areas



Lesser Whitethro at	Sylvia curruca	6	Probable	Singing males observed on multiple visits in the eastern area. 8 possible territories across all three areas
Whitethro at	Sylvia communis	78	Confirmed	Very common. Recently fledged young observed in all three areas
Goldcrest	Regulus regulus	6	Probable	Singing birds and pairs were observed in suitable nesting habitat in the eastern and western areas
Wren	Troglodytes troglodytes	123	Confirmed	Very common. Recently fledged young observed in all three areas
Nuthatch	Sitta europaea	1	Possible	An adult was observed in suitable breeding habitat in the central area during visit 1
Treecree per	Certhia familiaris	2	Possible	Single or pairs of birds were observed in five woodlands across all three areas
Starling	Sturnus vulgaris	24	Non-breeding	Occasionally observed, presumably from nest sites in the adjacent villages
Blackbird	Turdus merula	91	Confirmed	Very common across all three areas. Recently fledged young observed
Fieldfare	Turdus pilaris	99	Non-breeding	Wintering flocks were recorded during visits 1 & 2
Redwing	Turdus iliacus	58	Non-breeding	Wintering flocks were recorded during visit 1
Song Thrush	Turdus philomelos	20	Confirmed	Adults were observed carrying food in the eastern area.  Singing males present in all three areas. 23 possible territories
Mistle Thrush	Turdus viscivorus	7	Confirmed	Adults were observed carrying food in the eastern area.  Adults were observed in all three areas. 3 possible territories
Robin	Erithacus rubecula	65	Confirmed	Very common across all three areas. Recently fledged young observed



Redstart	Phoenicurus phoenicurus	1	Non-breeding	A single passage migrant was recorded during visit 2
Wheatea r	Oenanthe oenanthe	3	Non-breeding	Four passage migrants were recorded during visits 1 & 2
House Sparrow	Passer domesticus	20	Probable	Small colonies were present around four farms and residential buildings in the central and western areas
Tree Sparrow	Passer montanus	2	Probable	A pair were observed in suitable breeding habitat around a farm in the eastern area during visits 3 & 4
Dunnock	Prunella modularis	42	Confirmed	Recently fledged young observed in the western area.  Common across all three areas
Yellow Wagtail	Motacilla flava	21	Confirmed	Recently fledged young observed in the central area, and adults carrying food in the eastern area. Pairs present in all three areas. 12 possible territories
Pied Wagtail	Motacilla alba ssp. yarrellii	8	Probable	A pair were present in suitable breeding habitat in the eastern area
Meadow Pipit	Anthus pratensis	54	Confirmed	Adults were observed carrying food in the central area.  Singing males were observed in the central and eastern areas. Higher numbers were recorded during visit 1 due to the presence of wintering birds
Chaffinch	Fringilla coelebs	89	Confirmed	Recently fledged young observed in the central area.  Common across all three areas
Bullfinch	Pyrrhula pyrrhula	3	Possible	A pair were observed in suitable nesting habitat in the eastern section
Greenfin ch	Chloris chloris	11	Confirmed	Recently fledged young observed in the eastern and central areas
Linnet	Linaria cannabina	291	Probable	Pairs of birds were frequently recorded in all three areas. Higher numbers were recorded during visit 1 due to the presence of wintering birds. 14 possible territories



Goldfinch	Carduelis carduelis	86	Confirmed	Recently fledged young observed in the eastern and western areas. Common across all three areas
Siskin	Spinus spinus	1	Non-breeding	A single wintering bird was observed in the eastern area during visit 2
Corn Bunting	Miliaria calandra	24	Confirmed	Recently fledged young observed in the western area.  Common in the western and central areas. 19 possible territories
Yellowha mmer	Emberiza citrinella	84	Confirmed	Recently fledged young observed in the western area.  Common across all three areas. 38 possible territories
Reed Bunting	Emberiza schoeniclus	14	Confirmed	Evidence of nest building observed in the central area.  Pairs were observed in all three areas. 10 possible territories

- 4.2.4 In summary, in reference to the criteria described in Section 3.3, the breeding status of 35 species was identified as Confirmed:
- 4.2.5 The breeding status of 17 species was identified as Probable:
- 4.2.6 The breeding status of 9 species was identified as Possible:
- 4.2.7 The remaining 25 species recorded were assessed as Non-breeding.



# 5 Evaluation

#### 5.1 Overview

- 5.1.1 The assessment of the importance of the breeding bird populations recorded within the site during the field surveys undertaken between March and July 2023 inclusive is provided below, taking into consideration:
  - the conservation statuses of the species recorded (i.e. their inclusion on the legislation and guidance described in Section 2 of this report);
  - the sizes of the populations of the species recorded (i.e. species abundance);
  - the overall diversity of the breeding bird assemblage (i.e. species diversity); and
  - the spatial patterns of breeding bird usage of the site, including any areas of particular importance to breeding bird populations.

#### 5.2 Conservation status

5.2.1 Of the 61 species recorded breeding or potentially breeding during the 2023 field surveys, 31 are included on the legislation and guidance described in Section 2 of this report (as indicated in Table 4).

Table 4 Specially protected and notable species recorded during the 2023 field surveys

Species	Breeding	Conservation status category							
	status	Schedule 1	S41	Red	Amber	SAP			
Mallard	Possible				✓				
Grey Partridge	Confirmed		✓	✓		✓			
Quail	Probable	✓			✓				
Sparrowhawk	Possible				✓				
Moorhen	Probable				✓				
Oystercatcher	Possible				✓				
Lapwing	Probable		✓	✓		✓			
Stock Dove	Confirmed				✓				
Woodpigeon	Confirmed				✓				
Cuckoo	Possible		✓	✓					
Barn Owl	Confirmed	✓				✓			



Species	Breeding	Conservation status category						
	status	Schedule 1	S41	Red	Amber	SAP		
Kestrel	Confirmed				✓			
Rook	Confirmed				✓			
Skylark	Confirmed		✓	✓		✓		
Willow Warbler	Confirmed				✓			
Sedge Warbler	Possible				✓			
Whitethroat	Confirmed				✓			
Song Thrush	Confirmed		✓		✓			
Mistle Thrush	Confirmed			✓				
Wren	Confirmed				✓			
House Sparrow	Probable		✓	✓				
Tree Sparrow	Probable		✓	✓		✓		
Dunnock	Confirmed		✓		✓			
Yellow Wagtail	Confirmed		✓	✓		✓		
Meadow Pipit	Confirmed				✓			
Greenfinch	Probable			✓				
Linnet	Probable		✓	✓		✓		
Bullfinch	Possible		✓		✓	✓		
Corn Bunting	Confirmed		✓	✓		✓		
Yellowhammer	Confirmed		✓	✓		✓		
Reed Bunting	Confirmed		✓		✓	✓		
Schedule 1: Wildlife and Countryside Act 1981 (as amended) Schedule 1 species.  S41: NERC Act 2006 S41 Species of Principal Importance  Red: BoCC Red list species  Amber: BoCC Amber list species  SAP: species subject to Species Action Plans for Lincolnshire								



- 5.2.1 In summary, the 61 species recorded breeding or potentially breeding included the following:
  - 2 WCA Schedule 1 species;
  - 14 NERC S41 Species of Principal Importance;
  - 12 BoCC Red list species;
  - 18 BoCC Amber list species; and
  - 11 SAP bird species for Lincolnshire.

Figures 3a-3q display the observation points of the 18 WCA Schedule 1, NERC S41 and BoCC Red list species recorded during the survey.

#### 5.3 Species Abundance

- 5.3.1 Based on the peak counts and the number of territories recorded for the species encountered during the 2023 field surveys, no species are assessed as being present in numbers of international or national importance within the site boundary.
- 5.3.2 The following species were present in numbers that are considered to be of county importance:
  - quail, with 2 possible territories, and a peak count of 2, representing 6.9% of the Lincolnshire breeding population;
  - corn bunting, with 19 possible territories, and a peak count of 24, representing 2.7% of the Lincolnshire breeding population.
- 5.3.3 The suspected breeding pair of curlew on RAF Digby, approximately 500m from the site, is likely to be of county importance, representing 4% of the Lincolnshire breeding population. However curlew was not found to be breeding on the site itself.
- 5.3.4 Breeding populations of other farmland bird species present on site, including skylark, grey partridge and yellow wagtail, are likely to be of district importance, due to the national declines these species have undergone. However, with no direct comparative district population data available, we are unable to confirm this.

#### 5.4 Species Diversity

- 5.4.1 31 specially protected and/or notable species were identified as breeding or potentially breeding within the survey area. Using the adapted breeding bird assemblage importance criteria described in Section 3.2.21, this equates to a breeding bird assemblage of local level importance. Considering this, and the presence of a further 30 green listed species, either confirmed or possibly breeding within the survey area, the breeding bird assemblage recorded is considered to be of up to county level importance.
- 5.4.2 In reference to the LWS criteria described in Section 3.1.3, based on the species recorded as breeding or potentially breeding during the 2023 field surveys, the site attains a score of 14, which would exceed the threshold of



13 for LWS selection. Whilst the site does not contain grazing marsh habitat and therefore does not qualify for LWS selection, this further suggests that the breeding bird assemblage may potentially be of value at a county level.

#### 5.5 Comparison with BTO Data Report

- 5.5.1 As outlined in Table 2, the data received from the BTO shows that a total of 71 species were recorded breeding within 2km of the site between 2007-2011, followed by 34 species between 2019-2023. Of these species, seventeen were not recorded as breeding on site during the breeding bird survey, with these falling into one of the four following categories:
  - Three aquatic species which were recorded as being present during the survey, but for which no suitable nesting habitat is present on site
     greylag goose, shelduck and black-headed gull.
  - Three aquatic species which were absent during the survey, and for which no suitable nesting habitat is present on site – little ringed plover, ringed plover and grey wagtail.
  - Six terrestrial species which were recorded as being present during the survey, but for which no suitable nesting habitat is present on site – curlew, collared dove, swift, sand martin, house martin and starling.
  - Five terrestrial species which were absent during the survey, for which suitable nesting habitat is present on site – turtle dove, tawny owl, willow tit, marsh tit and spotted flycatcher.
- 5.5.2 Of the five species in the latter category, the broadleaved woodland habitats on site are considered suitable for supporting tawny owl. However, due to the species' nocturnal habits, it would be unlikely to be recorded during the breeding bird surveys. Of the other species in this category, all four are undergoing significant range and population reductions within the UK, and all were absent during the 2019-2023 period in the BTO data, suggesting that they no longer occur on or within the vicinity of the site, as supported by their absence from our survey.

#### 5.6 Site usage by breeding birds

- 5.6.1 The highest value habitats on site for breeding birds were the large grassland and arable fields present across western area and the western portion of the central area. These fields, a mixture of fallow vegetation and sileage crops, held the majority of the corn bunting territories within the survey area, as well as the highest concentrations of skylark, meadow pipit, and grey partridge territories. Arable fields adjacent to these grassland areas showed significantly higher abundances of these ground-nesting species compared to those arable fields in the eastern area where the grassland areas were absent, highlighting the value of this habitat in a wider context.
- 5.6.2 The majority of non-ground-nesting birds recorded were in the hedgerows surrounding the arable fields on site. Mature, species-rich hedgerows, such as those present in the eastern area, were of particularly high value for species such as chiffchaff, blackcap and song thrush.
- 5.6.3 The stands of broadleaved woodland on site were generally of poor condition, with little to no understory present due to the presence of



- pheasant rearing pens. As such, diversity of woodland species was low beyond the common generalist species such as blue tit, great tit and chaffinch.
- 5.6.4 Breeding bird activity within the arable fields themselves was generally low, particularly where single-crop monocultures such as barley and wheat were present, though yellow wagtails were primarily recorded in this habitat type, with skylark also being recorded frequently.
- 5.6.5 The farm buildings and other man-made structures present on site provided suitable nesting opportunities for several species including barn owl, kestrel and tree sparrow. Although it is unlikely that the proposed development will impact on these buildings directly, the foraging areas surrounding the buildings may be subject to change.



### 6 Conclusion

- 6.2.1 The field surveys undertaken in March to July 2023 inclusive, to inform the proposed development for Springwell Solar Farm, recorded a total of 86 bird species, 61 of which were breeding or potentially breeding within or in close proximity to the site. These included protected species including those listed under schedule 1 of the WCA and S41 of the NERC Act.
- 6.2.2 Based on the diversity of the breeding bird assemblage recorded, and sizes of the breeding populations of corn bunting and quail recorded, the breeding bird populations and overall assemblage within and in close proximity to the site are considered to be of up to county importance. Grassland fields and hedgerows were of greatest value to breeding birds, particularly skylark and grey partridge, whilst arable fields were used by yellow wagtails.
- 6.2.3 The proposed development has the potential to adversely affect breeding birds within and adjacent to the site through the loss or alteration of suitable habitat, both during its construction and operation. The potential impacts on breeding birds will be assessed in detail within the Environmental statement and appropriate mitigation identified.
- 6.2.4 No further surveys for breeding birds are required at this stage. The Site is not considered of importance for overwintering waders and wildfowl due to distance from coast and any significant wetland areas (i.e. it is more than 35km from the Wash SPA). However due to the extent and suitability of habitats within and adjacent to the site for wintering farmland birds, further consultation is planned with North Kesteven District Council and Lincolnshire County Council to determine if further surveys would be required to inform an assessment of the wintering bird assemblage and identify any potential impacts and required mitigation measures. Wintering bird surveys comprise four to six survey visits spread evenly between late October and early March inclusive.



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# **Appendix 1 – Field Survey Weather Conditions**

Visit Number	Date	Weather
1	28/03/2023	Start: 3°C, cloud 8/8, wind BF1, light drizzle End: 9°C, cloud 8/8, wind BF4, light rain
	29/03/2023	Start: 7°C, cloud 8/8, wind BF1, light drizzle End: 8°C, cloud 6/8, wind BF3, light rain
	30/03/2023	Start: 8°C, cloud 6/8, wind BF3, dry End: 9°C, cloud 6/8, wind BF4, light drizzle
	31/03/2023	Start: 8°C, cloud 8/8, wind BF1, light drizzle End: 9°C, cloud 6/8, BF2, moderate rain
2	13/04/2023	Start: 7°C, cloud 6/8, wind BF3, dry End: 13° C, cloud 8/8, wind BF4, dry
	14/04/2023	Start: 5°C, cloud 0/8, wind BF1, dry End: 10° C, cloud 2/8, wind BF1, dry
	18/04/2023	Start: 7°C, cloud 8/8, wind BF2, dry End: 12° C, cloud 8/8, wind BF3, dry
	19/04/2023	Start: 6°C, cloud 2/8, wind BF1, dry End: 11° C, cloud 6/8, wind BF2, dry
	20/04/2023	Start: 4°C, cloud 0/8, wind BF1, dry End: 12° C, cloud 4/8, wind BF4, dry
	21/04/2023	Start: 7°C, cloud 2/8, wind BF1, dry End: 14° C, cloud 4/8, wind BF2, light drizzle
	24/04/2023	Start: 6°C, cloud 4/8, wind BF2, dry End: 13° C, cloud 4/8, wind BF1, dry
3	16/05/2023	Start: 9°C, cloud 2/8, wind BF2, dry End: 15° C, cloud 2/8, wind BF2, dry
	17/05/2023	Start: 12°C, cloud 0/8, wind BF3, dry End: 16° C, cloud 4/8, wind BF3, dry
	18/05/2023	Start: 9°C, cloud 0/8, wind BF1, dry End: 15° C, cloud 8/8, wind BF1, dry
	19/05/2023	Start: 12°C, cloud 4/8, wind BF0, dry End: 19° C, cloud 8/8, wind BF1, dry
	23/05/2023	Start: 8°C, cloud 4/8, wind BF1, dry End: 14° C, cloud 8/8, wind BF2, dry
	24/05/2023	Start: 10°C, cloud 6/8, wind BF2, dry End: 15° C, cloud 8/8, wind BF3, dry
	25/05/2023	Start: 11°C, cloud 0/8, wind BF2, dry End: 17° C, cloud 2/8, wind BF2, dry



Visit Number	Date	Weather
4	06/06/2023	Start: 13°C, cloud 4/8, wind BF3, dry End: 19° C, cloud 8/8, wind BF3, dry
	07/06/2023	Start: 11°C, cloud 6/8, wind BF2, dry End: 18° C, cloud 2/8, wind BF2, dry
	09/06/2023	Start: 12°C, cloud 4/8, wind BF3, dry End: 18° C, cloud 8/8, wind BF3, dry
	13/06/2023	Start: 10°C, cloud 0/8, wind BF1, dry End: 17° C, cloud 0/8, wind BF1, dry
	14/06/2023	Start: 10°C, cloud 2/8, wind BF1, dry End: 18° C, cloud 2/8, wind BF3, dry
	15/06/2023	Start: 12°C, cloud 4/8, wind BF3, dry End: 18° C, cloud 8/8, wind BF3, dry
5	27/06/2023	Start: 14°C, cloud 7/8, wind BF0, dry End: 18° C, cloud 8/8, wind BF2, dry
	28/06/2023	Start: 17°C, cloud 7/8, wind BF0, dry End: 22° C, cloud 8/8, wind BF1, dry
	29/06/2023	Start: 14°C, cloud 2/8, wind BF3, dry End: 19° C, cloud 8/8, wind BF3, dry
	30/06/2023	Start: 13°C, cloud 2/8, wind BF3, dry End: 19° C, cloud 8/8, wind BF3, dry
6	12/072023	Start: 11°C, cloud 3/8, wind BF3, dry End: 16° C, cloud 6/8, wind BF4, dry

# Appendix 2 – BTO Data Report

Common name	Scientific name	Conservation status	2007-2011 2km	2007-2011 10km	2019-2023 2km	2019-2023 10km	Present during 2023 surveys
Pink-footed Goose	Anser brachyrhynchus	Amber	-	-	-	Present	-
Greylag Goose	Anser anser	Amber	Probable	Confirmed	Present	Confirmed	Present
Canada Goose	Branta canadensis	Green	-	Confirmed	-	Present	-
Mute Swan	Cygnus olor	Amber	-	-	-	Present	-
Whooper Swan	Cygnus cygnus	A1, Sch1, Amber	-	-	-	Present	Present
Shelduck	Tadorna tadorna	Amber	Confirmed	Confirmed	Probable	Probable	Present
Wigeon	Anas penelope	Amber	-	-	-	Present	-
Gadwall	Mareca strepera	Amber	-	Probable	-	Present	Present
Teal	Anas crecca	Amber	-	Probable	Present	Present	-
Mallard	Anas platyrhynchos	Amber	Confirmed	Confirmed	Present	Confirmed	Possible
Shoveler	Anas clypeata	Amber	-	Probable	-	Present	-
Pochard	Aythya ferina	Red	-	-	-	Present	-
Tufted Duck	Aythya fuligula	Green	-	Probable	-	Confirmed	-
Red-legged Partridge	Alectoris rufa	Green	Confirmed	Confirmed	Present	Present	Probable
Grey Partridge	Perdix perdix	S41, Red	Probable	Confirmed	Confirmed	Confirmed	Confirmed
Quail	Coturnix coturnix	Sch1, Amber	-	-	Possible	Possible	Probable
Pheasant	Phasianus colchicus	Green	Probable	Confirmed	Possible	Probable	Confirmed
Little Grebe	Tachybaptus ruficollis	Green	-	-	-	Possible	Confirmed
Great Crested Grebe	Podiceps cristatus	Green	-	Confirmed	-	Confirmed	-



Common name	Scientific name	Conservation status	2007-2011 2km	2007-2011 10km	2019-2023 2km	2019-2023 10km	Present during 2023 surveys
Little Egret	Egretta garzetta	A1, Green	-	-	-	Present	-
Cattle Egret	Bubulcus ibis	Amber	-	-	-	Present	-
Grey Heron	Ardea cinerea	Green	-	Confirmed	Present	Confirmed	Present
Cormorant	Phalacrocorax carbo	Green	-	-	-	Present	Present
Sparrowhawk	Accipiter nisus	Amber	Probable	Confirmed	Present	Present	Possible
Marsh Harrier	Circus aeruginosus	A1, Sch1, Amber	-	Confirmed	Present	Present	Present
Montagu's Harrier	Circus pygargus	A1, Sch1, Red	-	Confirmed (50-km)	-	-	-
Red Kite	Milvus milvus	A1, Sch1, Green	-	-	Present	Confirmed	Present
Buzzard	Buteo buteo	Green	Confirmed	Confirmed	Probable	Probable	Confirmed
Osprey	Pandion haliaetus	A1, Sch1, Amber	-	-	-	Present	-
Water Rail	Rallus aquaticus	Green	-	Probable	-	Present	-
Moorhen	Gallinula chloropus	Amber	Confirmed	Confirmed	-	Confirmed	Probable
Coot	Fulica atra	Green	Confirmed	Confirmed	Present	Confirmed	Confirmed
Oystercatcher	Haematopus ostralegus	Amber	Confirmed	Confirmed	Probable	Probable	Possible
Golden Plover	Pluvialis apricaria	A1, Green	-	-	-	Present	-
Lapwing	Vanellus vanellus	S41, Red	Confirmed	Confirmed	Present	Confirmed	Probable
Little Ringed Plover	Charadrius dubius	Sch1, Green	Confirmed	Confirmed	-	-	-
Ringed Plover	Charadrius hiaticula	Red	Confirmed	Confirmed	-	-	-
Curlew	Numenius arquata	S41, Red	-	-	Confirmed	Confirmed	Present
Redshank	Tringa totanus	Amber	-	Probable	-	-	-



Common name	Scientific name	Conservation status	2007-2011 2km	2007-2011 10km	2019-2023 2km	2019-2023 10km	Present during 2023 surveys
Woodcock	Scolopax rusticola	Red	-	Probable	-	-	-
Snipe	Gallinago gallinago	Amber	-	Possible	-	Present	Present
Common Tern	Sterna hirundo	A1, Amber	-	-	-	Present	-
Black-headed Gull	Chroicocephalus ridibundus	Amber	Confirmed	Confirmed	Present	Present	Present
Mediterranean Gull	Larus melanocephalus	A1, Sch1, Amber	-	-	-	Present	-
Common Gull	Larus canus	Amber	-	-	Present	Present	Present
Lesser Black-backed Gull	Larus fuscus	Amber	-	-	Present	Present	Present
Herring Gull	Larus argentatus	S41, Red	-	-	-	Present	Present
Great Black-backed Gull	Larus marinus	Amber	-	-	-	Present	-
Rock Dove	Columba livia	Green	Possible	Confirmed	-	Present	Probable
Stock Dove	Columba oenas	Amber	Confirmed	Confirmed	Present	Probable	Confirmed
Woodpigeon	Columba palumbus	Amber	Confirmed	Confirmed	Probable	Confirmed	Confirmed
Collared Dove	Streptopelia decaocto	Green	Confirmed	Confirmed	Probable	Probable	Present
Turtle Dove	Streptopelia tutur	S41, Red	Possible	Probable	-	Possible	-
Cuckoo	Cuculus canorus	S41, Red	Possible	Possible	Present	Present	Possible
Barn Owl	Tyto alba	Sch1, Green	Confirmed	Confirmed	Confirmed	Confirmed	Confirmed
Little Owl	Athene noctua	Green	Confirmed	Confirmed	-	Present	Probable
Tawny Owl	Strix aluco	Amber	Probable	Confirmed	Confirmed	Confirmed	-
Long-eared Owl	Asio otus	Green	-	-	Present	Present	-
Short-eared Owl	Asio flammeus	A1, Amber	-	-	Present	Present	-



Common name	Scientific name	Conservation status	2007-2011 2km	2007-2011 10km	2019-2023 2km	2019-2023 10km	Present during 2023 surveys
Swift	Apus apus	Red	Confirmed	Confirmed	Present	Present	Present
Kingfisher	Alcedo atthis	A1, Sch1, Amber	-	Confirmed	-	Present	-
Green Woodpecker	Picus viridis	Green	Confirmed	Confirmed	Possible	Confirmed	Probable
Great Spotted Woodpecker	Dendrocopos major	Green	Probable	Confirmed	Present	Confirmed	Probable
Kestrel	Falco tinnunculus	Amber	Confirmed	Confirmed	Confirmed	Confirmed	Confirmed
Merlin	Falco columbarius	A1, Sch1, Red	-	-	Present	Present	-
Hobby	Falco subbuteo	Sch1, Green	-	Confirmed	-	Present	-
Peregrine	Falco peregrinus	A1, Sch1, Green	-	Confirmed	Present	Present	Present
Jay	Garrulus glandarius	Green	Possible	Possible	Present	Present	Probable
Magpie	Pica pica	Green	Confirmed	Confirmed	Present	Probable	Probable
Jackdaw	Corvus monedula	Green	Confirmed	Confirmed	Probable	Probable	Probable
Rook	Corvus frugilegus	Amber	-	Confirmed	Present	Confirmed	Confirmed
Carrion Crow	Corvus corone	Green	Confirmed	Confirmed	Probable	Probable	Possible
Raven	Corvus corax	Green	-	-	-	Present	Confirmed
Blue Tit	Cyanistes caeruleus	Green	Confirmed	Confirmed	Possible	Confirmed	Confirmed
Great Tit	Parus major	Green	Confirmed	Confirmed	Present	Confirmed	Confirmed
Coal Tit	Periparus ater	Green	Confirmed	Confirmed	Present	Confirmed	Confirmed
Willow Tit	Poecile montana	S41, Red	Probable	Probable	-	-	-
Marsh Tit	Poecile palustris	S41, Red	Probable	Probable	-	Probable	-
Skylark	Alauda arvensis	Red	Confirmed	Confirmed	Probable	Confirmed	Confirmed
Sand Martin	Riparia riparia	Green	Confirmed	Confirmed	Present	Present	Present



Common name	Scientific name	Conservation status	2007-2011 2km	2007-2011 10km	2019-2023 2km	2019-2023 10km	Present during 2023 surveys
Swallow	Hirundo rustica	Green	Confirmed	Confirmed	Confirmed	Confirmed	Confirmed
House Martin	Delichon urbicum	Red	Confirmed	Confirmed	Confirmed	Confirmed	Present
Long-tailed Tit	Aegithalos caudatus	Green	Confirmed	Confirmed	Present	Confirmed	Confirmed
Willow Warbler	Phylloscopus trochilus	Amber	Possible	Confirmed	Confirmed	Confirmed	Confirmed
Chiffchaff	Phylloscopus collybita	Green	Possible	Confirmed	Possible	Confirmed	Confirmed
Sedge Warbler	Acrocephalus schoenobaenus	Amber	-	Confirmed	Present	Possible	Possible
Reed Warbler	Acrocephalus scirpaceus	Green	-	Probable	Present	Possible	-
Blackcap	Sylvia atricapilla	Green	Probable	Confirmed	Possible	Probable	Confirmed
Garden Warbler	Sylvia borin	Green	-	Possible	-	Possible	-
Lesser Whitethroat	Sylvia curruca	Green	Possible	Possible	Present	Possible	Probable
Whitethroat	Sylvia communis	Amber	Confirmed	Confirmed	Probable	Probable	Confirmed
Wren	Troglodytes troglodytes	Amber	Confirmed	Confirmed	Possible	Probable	Confirmed
Goldcrest	Regulus regulus	Green	Confirmed	Confirmed	Present	Possible	Probable
Nuthatch	Sitta europaea	Green	Probable	Confirmed	-	Possible	Possible
Treecreeper	Certhia familiaris	Green	Probable	Confirmed	-	Confirmed	Possible
Starling	Sturnus vulgaris	S41, Red	Confirmed	Confirmed	Present	Confirmed	Present
Blackbird	Turdus merula	Green	Confirmed	Confirmed	Possible	Confirmed	Confirmed
Fieldfare	Turdus pilaris	Sch, Red	-	-	Present	Present	Present
Redwing	Turdus iliacus	Sch1, Amber	-	-	-	Present	Present
Song Thrush	Turdus philomelos	S41, Amber	Confirmed	Confirmed	Confirmed	Confirmed	Confirmed



Common name	Scientific name	Conservation status	2007-2011 2km	2007-2011 10km	2019-2023 2km	2019-2023 10km	Present during 2023 surveys
Mistle Thrush	Turdus viscivorus	Red	Confirmed	Confirmed	Probable	Confirmed	Confirmed
Spotted Flycatcher	Muscicapa striata	S41, Red	Confirmed	Confirmed	-	Present	-
Robin	Erithacus rubecula	Green	Confirmed	Confirmed	Possible	Confirmed	Confirmed
Black Redstart	Phoenicurus ochruros	Sch1, Amber	-	-	Present	Present	-
Redstart	Phoenicurus phoenicurus	Amber	-	-	-	-	Present
Whinchat	Saxicola rubetra	Red	-	-	Present	Present	-
Stonechat	Saxicola rubicola	Green	-	-	Present	Present	-
Wheatear	Oenanthe oenanthe	Amber	-	-	Present	Present	Present
House Sparrow	Passer domesticus	S41, Red	Confirmed	Confirmed	Confirmed	Confirmed	Probable
Tree Sparrow	Passer montanus	S41, Red	Probable	Confirmed	-	Present	Probable
Dunnock	Prunella modularis	S41, Amber	Confirmed	Confirmed	Possible	Probable	Confirmed
Yellow Wagtail	Motacilla flava	S41, Red	Confirmed	Confirmed	Present	Present	Confirmed
Grey Wagtail	Motacilla cinerea	Amber	Probable	Confirmed	-	Present	-
Pied Wagtail	Motacilla alba ssp. yarellii	Amber	Confirmed	Confirmed	Present	Confirmed	Probable
Meadow Pipit	Anthus pratensis	Amber	Probable	Confirmed	Present	Present	Confirmed
Chaffinch	Fringilla coelebs	Green	Confirmed	Confirmed	Probable	Probable	Confirmed
Bullfinch	Pyrrhula pyrrhula	S41, Amber	Confirmed	Confirmed	Present	Present	Possible
Greenfinch	Chloris chloris	Red	Confirmed	Confirmed	Present	Confirmed	Confirmed
Linnet	Linaria cannabina	Red	Confirmed	Confirmed	Probable	Probable	Probable
Lesser Redpoll	Acanthis flammea	S41, Red	-	-	-	Present	-
Goldfinch	Carduelis carduelis	Green	Confirmed	Confirmed	Present	Confirmed	Confirmed



Common name	Scientific name	Conservation status	2007-2011 2km	2007-2011 10km	2019-2023 2km	2019-2023 10km	Present during 2023 surveys
Siskin	Spinus spinus	Green	-	-	Present	Confirmed	Present
Corn Bunting	Emberiza calandra	S41, Red	Possible	Possible	Probable	Probable	Confirmed
Yellowhammer	Emberiza citrinella	S41, Red	Confirmed	Confirmed	Probable	Confirmed	Confirmed
Reed Bunting	Emberiza schoeniclus	S41, Amber	-	-	Present	Confirmed	Confirmed



## **Appendix 3 – Field Survey Results**

	Species		Number of individuals recorded							
Common name	Scientific Name	BTO species code	Conservation status	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6	
Greylag Goose	Anser anser	GJ	Amber	12	11	2	3	-	-	
Whooper Swan	Cygnus cygnus	WS	A1, Sch1, Amber	120	-	-	-	-	-	
Shelduck	Tadorna tadorna	SU	Amber	2	2	3	-	-	-	
Gadwall	Mareca strepera	GA	Amber	-	-	2	-	-	-	
Mallard	Anas platyrhynchos	MA	Amber	16	5	2	4	-	-	
Red-legged Partridge	Alectoris rufa	PL	Green	25	30	25	23	19	5	
Grey Partridge	Perdix perdix	P.	S41, Red	30	14	29	11	14	-	
Quail	Coturnix coturnix	Q.	Sch1, Amber	-	-	-	2	1	-	
Pheasant	Phasianus colchicus	PH	Green	17	28	1	5	-	-	
Little Grebe	Tachybaptus ruficollis	LG	Green	-	1	1	-	-	-	
Grey Heron	Ardea cinerea	H.	Green	-	2	-	-	-	-	
Cormorant	Phalacrocorax carbo	CA	Green	-	-	-	1	-	-	
Sparrowhawk	Accipiter nisus	SH	Amber	1	3	3	-	1	-	
Marsh Harrier	Circus aeruginosus	MR	A1, Sch1, Amber	-	-	1	-	-	-	
Red Kite	Milvus milvus	KT	A1, Sch1, Green	7	5	2	6	7	-	
Buzzard	Buteo buteo	BZ	Green	11	9	5	7	12	1	
Moorhen	Gallinula chloropus	MH	Amber	-	1	2	-	-	-	
Coot	Fulica atra	CO	Green	-	2	3	-	-	-	
Oystercatcher	Haematopus ostralegus	ос	Amber	3	2	2	4	-	-	



Species					Number of individuals recorded						
Common name	Scientific Name	BTO species code	Conservation status	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6		
Lapwing	Vanellus vanellus	L.	S41, Red	19	19	25	6	-	-		
Curlew	Numenius arquata	CU	S41, Red	1	2	2	3	-	-		
Snipe	Gallinago gallinago	SN	Amber	11	3	-	-	-	-		
Black-headed Gull	Chroicocephalus ridibundus	ВН	Amber	-	11	2	-	-	-		
Common Gull	Larus canus	CM	Amber	-	17	-	-	-	-		
Herring Gull	Larus argentatus	HG	S41, Red	3	39	-	-	-	1		
Lesser Black-backed Gull	Larus fuscus	LB	Amber	14	40	-	-	5	1		
Feral Pigeon	Columba livia	FP	Green	18	11	7	24	18	-		
Stock Dove	Columba oenas	SD	Amber	38	16	29	17	14	-		
Woodpigeon	Columba palumbus	WP	Amber	534	216	42	227	336	89		
Collared Dove	Streptopelia decaocto	CD	Green	-	-	1	1	-	-		
Cuckoo	Cuculus canorus	CK	S41, Red	-	-	3	-	-	-		
Barn Owl	Tyto alba	ВО	Sch1, Green	2	1	1	2	1	-		
Little Owl	Athene noctua	LO	Green	2	-	-	1	1	-		
Swift	Apus apus	SI	Red	-	-	-	11	2	-		
Great Spotted Woodpecker	Dendrocopos major	GS	Green	3	5	8	3	7	1		
Green Woodpecker	Picus viridis	G.	Green	4	2	1	2	2	-		
Kestrel	Falco tinnunculus	K.	Amber	6	7	3	3	12	-		
Peregrine	Falco peregrinus	PE	A1, Sch1, Green	2	2	-	-	-	-		
Jay	Garrulus glandarius	J.	Green	2	2	-	3	1	-		



	Species	Number of individuals recorded							
Common name	Scientific Name	BTO species code	Conservation status	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Magpie	Pica pica	MG	Green	13	10	8	9	11	-
Jackdaw	Corvus monedula	JD	Green	97	31	54	5	62	-
Rook	Corvus frugilegus	RO	Amber	97	105	110	301	176	-
Carrion Crow	Corvus corone	C.	Green	28	23	26	15	22	2
Raven	Corvus corax	RN	Green	4	2	3	-	2	-
Coal Tit	Periparus ater	СТ	Green	3	2	10	5	-	-
Blue Tit	Cyanistes caeruleus	ВТ	Green	54	70	42	120	254	19
Great Tit	Parus major	GT	Green	48	77	35	69	137	6
Skylark	Alauda arvensis	S.	Red	254	271	203	254	244	61
Sand Martin	Riparia riparia	SM	Green	1	-	-	-	-	-
Swallow	Hirundo rustica	SL	Green	-	9	21	35	19	34
House Martin	Delichon urbicum	НМ	Red	-	-	-	2	2	14
Long-tailed Tit	Aegithalos caudatus	LT	Green	20	15	43	7	56	13
Willow Warbler	Phylloscopus trochilus	WW	Amber	-	7	5	4	8	-
Chiffchaff	Phylloscopus collybita	CC	Green	39	59	38	49	43	4
Sedge Warbler	Acrocephalus schoenobaenus	SW	Amber	-	-	3	-	-	-
Blackcap	Sylvia atricapilla	ВС	Green	1	24	41	30	35	2
Lesser Whitethroat	Sylvia curruca	LW	Green	-	1	4	6	2	-
Whitethroat	Sylvia communis	WH	Amber	-	5	54	65	78	2
Goldcrest	Regulus regulus	GC	Green	6	1	3	1	6	-



Species					Number of individuals recorded						
Common name	Scientific Name	BTO species code	Conservation status	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6		
Wren	Troglodytes troglodytes	WR	Amber	75	81	60	106	123	13		
Nuthatch	Sitta europaea	NH	Green	1	-	-	-	-	-		
Treecreeper	Certhia familiaris	TC	Green	2	1	-	-	2	2		
Starling	Sturnus vulgaris	SG	S41, Red	21	-	-	24	-	-		
Blackbird	Turdus merula	B.	Green	68	62	60	68	91	7		
Fieldfare	Turdus pilaris	FF	Sch, Red	99	72	-	-	-	-		
Redwing	Turdus iliacus	RE	Sch1, Amber	58	-	-	-	-	-		
Song Thrush	Turdus philomelos	ST	S41, Amber	21	20	15	16	16	-		
Mistle Thrush	Turdus viscivorus	M.	Red	7	3	1	-	1	-		
Robin	Erithacus rubecula	R.	Green	62	61	71	43	65	10		
Redstart	Phoenicurus phoenicurus	RT	Amber	-	1	-	-	-	-		
Wheatear	Oenanthe oenanthe	W.	Amber	1	3	-	-	-	-		
House Sparrow	Passer domesticus	HS	S41, Red	20	6	7	16	9	-		
Tree Sparrow	Passer montanus	TS	S41, Red	-	-	2	1	-	-		
Dunnock	Prunella modularis	D.	S41, Amber	42	38	18	24	39	2		
Yellow Wagtail	Motacilla flava	YW	S41, Red	-	5	15	21	9	2		
Pied Wagtail	Motacilla alba ssp. yarrellii	PW	Amber	4	6	8	3	2	-		
Meadow Pipit	Anthus pratensis	MP	Amber	54	4	11	10	3	-		
Chaffinch	Fringilla coelebs	CH	Green	89	64	79	54	53	-		



	Species					Number of individuals recorded							
Common name	Scientific Name	BTO species code	Conservation status	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6				
Bullfinch	Pyrrhula pyrrhula	BF	S41, Amber	1	3	1	1	2	-				
Greenfinch	Chloris chloris	GR	Red	8	8	5	5	11	-				
Linnet	Linaria cannabina	LI	S41, Red	291	78	33	34	20	33				
Goldfinch	Carduelis carduelis	GO	Green	50	43	41	34	86	-				
Siskin	Spinus spinus	SK	Green	-	1	-	-	-	-				
Corn Bunting	Miliaria calandra	СВ	S41, Red	15	14	20	17	24	5				
Yellowhammer	Emberiza citrinella	Y.	S41, Red	84	67	39	48	74	6				
Reed Bunting	Emberiza schoeniclus	RB	S41, Amber	14	13	9	10	5	-				

