

Example Site Linear

Compiled on 20 January 2022



SUMMARY

Background	The BTO Data Report collates and analyses comprehensive (2007–2011) and contemporary (2018–2022) bird data relating to the grid squares spanned by the site: 44 1-km squares, 17 tetrads and three 10-km squares. For contextual analyses, data from these relevant squares are related to equivalent data from two vice-counties, one county, one region, one country and the UK to assess species' importance in the vicinity of the site to help inform delivery of habitat mitigation, enhancement and biodiversity net gain.
Data used	Coverage of relevant squares spanned by the site from 2007–2011 is complete at the 10-km resolution and there is very good coverage of the site by timed visits and very good coverage from casual recording in the breeding season (very good and very good respectively in winter). Contemporary information for the period 2018–2022 is available from BirdTrack for 47% of tetrads (100% of 10-km squares) in the breeding season and from one BBS square.
Results	<p>During 2007–2011, 101 species with breeding evidence and 122 species in winter were recorded in the vicinity of the site at various spatial scales. Breeding season figures include 12 Schedule 1 species, eight Annex 1 species and 25 BoCC Red list species. The following rare breeding birds were recorded in the same 20-km or 50-km squares as the site during 2007–2011: Crane, Honey-buzzard, Montagu's Harrier, Red-backed Shrike. For confidentiality reasons we cannot reveal fine-scale association with the site: further details may be available from the Rare Breeding Birds Panel.</p> <p>During the breeding seasons of 2018–2022, 144 species were recorded in the vicinity of the site at various spatial scales. These included 31 Schedule 1 species, 22 Annex 1 species and 33 BoCC Red list species.</p> <p>In a UK context, the 10-km squares spanned by the site held one notable breeding species (where the site and vicinity accounted for at least 2% of the species' geographic range in the UK). In a regional context, the site's 10-km squares accounted for up to 5.4% of regional population size. Thirteen species were notable in at least one region or season. In a county context, the site's 10-km squares accounted for up to 19% of county population size. Ten species were notable in at least one county or season. In a vice-county context, the site's 10-km squares accounted for up to 100% of vice-county population size. Eighteen species were notable in at least one vice-county or season. Full details of notable species and those showing more positive population trends in the vicinity of the site compared to the wider context are given in the Report.</p>

1. INTRODUCTION

The purpose of the BTO Data Report is to provide information on bird species associated with potential development sites at a range of spatial scales to inform desk studies for ecological impact assessments. The Report uses BTO's long-term ornithological datasets, providing [high quality](#) comprehensive and contemporary information. BTO is grateful to the volunteers who collected all the data, and to the funders and scheme partners, who are listed in Section 3 under the relevant data sources.

The species list in this report can guide the need for detailed field surveys in conjunction with [Bird Survey Guidelines](#) advice. This Report highlights the legal and conservation status assigned to each species in the relevant country. Beyond simple species lists, BTO data are uniquely able to provide context to help quantify the importance of a site and its surroundings in conservation terms. This includes assessments of the percentage of county, regional and national geographic range and population size associated with the site, plus recent population changes, offering the potential to highlight priorities for delivering habitat mitigation, enhancement and biodiversity net gain.

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2. SITE, SQUARES, REGIONS AND FEATURES

2.1 Relevant grid squares

Systematic bird recording in Britain and Ireland typically involves the collection of records for 1-km, 2-km ('tetrad') or 10-km squares, or using the boundaries of user-defined sites, nature reserves and other 'popular places'. Rarely can records be definitively attributed within the boundary of proposed development sites, especially small ones.

Unless otherwise stated, all species detailed in the BTO Data Report concern species present in grid squares *intersected* by the site boundary, rather than species that are definitively *within* the site boundary. Grid squares with at least 1ha overlapping the site are referred to as 'relevant' squares.

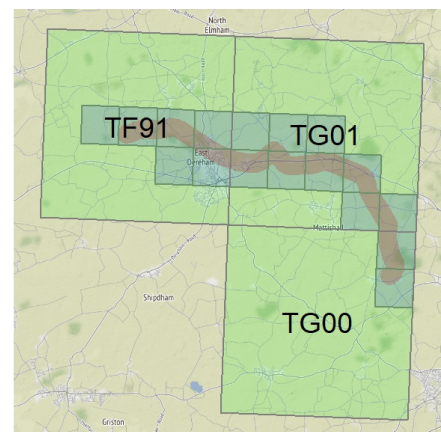
For example 'relevant tetrads' are all 2-km squares with at least 1ha overlapping the site. Data are summarised at the finest spatial scale possible, subject to the size of the site and the availability and spatial precision of BTO datasets in the vicinity of the site.

The number of relevant 1-km squares, tetrads and 10-km squares for the site are listed below. The map above shows the site in relation to relevant tetrads and relevant 10-km squares (for an equivalent map for 1-km squares, and for full lists of relevant 1-km squares, tetrads and 10-km squares, see Appendix 1).

- 44 relevant 1-km squares
- 17 relevant tetrads
- three relevant 10-km squares

For reasons of confidentiality the precise locations of certain rare breeding and wintering birds (typically those reported on by the [Rare Breeding Birds Panel](#)) cannot be revealed precisely in BTO Data Reports. For these species we follow the treatment introduced by *Bird Atlas 2007–11* where records were summarised for 20-km and 50-km squares. If any such rare breeding species have been recorded in the same 20-km or 50-km squares as the site, lists and maps of relevant 20-km and/or 50-km squares are included in Appendix 1.

All results in the BTO Data Report, especially those for larger grid resolutions, should be interpreted with respect to the habitats present on the site as some species listed may not occur within the site boundary.



2.2 Relevant county, regional and national contexts

The BTO Data Report contains contextual 'site importance' analyses that aim to highlight species for which the site and its relevant grid squares are important in local, regional, national and UK contexts. For example, does the site and its surroundings support a regionally significant population of a protected species?

National context concerns the site relative to the country it falls within. In addition to the UK (here combined with the Isle of Man and Channel Islands), the site also falls within one country: *England*.

Regional context concerns the site relative to the regions it falls within. For sites in England, regions are defined using the NUTS (Nomenclature of territorial units for statistics) level 1 regions. The following regions are relevant for this site: *East of England*.

County context concerns the site relative to counties. The following counties are relevant for this site: *Norfolk*.

Vice-county context concerns the site relative to vice-counties. For sites in Great Britain, the Report uses Watsonian Vice-counties. The following vice-counties are relevant for this site: *East Norfolk and West Norfolk*.

Maps of all these areas can be found in Appendix 1. The grid squares associated with each of these area are used to determine overall range size and abundance at county, regional and national scales with which range size and abundance for the site's relevant grid squares can be calculated. Note that some individual grid squares may be associated with more than one geographical area. For more information see Section 5.

2.3 Relevant features

The BTO Data Report summarises species occurrence and abundance for species of conservation and statutory importance. In addition to the lists of species important across the UK, certain lists are of relevance in the UK's devolved administrations. The table below lists all species lists relevant for UK, Isle of Man and Channel Islands and England. Section 4 summarises the number of species recorded at or around the site for each of these feature lists.

Feature	Description
Schedule 1 UK	Species listed on Schedule 1 of the Wildlife and Countryside Act 1981
BoCC Red	Species on the Red list according to Birds of Conservation Concern 5 (Stanbury et al. 2021)
BoCC Amber	Species on the Amber list, according to Birds of Conservation Concern 5 (Stanbury et al. 2021)
Annex 1	Species on Annex 1 of the EU Birds Directive
IUCN2 Critically Endangered	Species listed as Critically endangered in Great Britain (Stanbury et al. 2021)
IUCN2 Endangered	Species listed as Endangered in Great Britain (Stanbury et al. 2021)
IUCN2 Near Threatened	Species listed as Near Threatened in Great Britain (Stanbury et al. 2021)
IUCN2 Vulnerable	Species listed as Vulnerable in Great Britain (Stanbury et al. 2021)
RBBP	Rare and scarce species considered by the Rare Breeding Birds Panel
Section 41 England	Species listed in Section 41 of the Natural Environment and Rural Communities Act 2006 (England only)
Schedule ZA1 England & Wales	Species listed on Schedule ZA1 of the Wildlife and Countryside Act (England & Wales only)

3. DATA SOURCES AND COVERAGE

The BTO Data Report uses comprehensive atlas distribution data from 2007–11 to give a baseline of high-quality

information about species status at and around the site and in the wider context. This is supplemented by the latest records from current schemes, including BirdTrack and BBS. The report considers **269 species** that regularly occur in Britain and Ireland. These include **221 breeding species** and **226 wintering species**. The report includes BOU Category C established non-native species but excludes exotic non-native species (i.e. those without self-sustaining populations). Breeding species are defined as those that were recorded with confirmed breeding evidence in at least one 10-km square in Britain or Ireland in *Bird Atlas 2007–11*. Wintering species are defined as those recorded in at least fifty 10-km squares in *Bird Atlas 2007–11*, plus six rare residents that the 50-square rule excluded (e.g. Cirl Bunting). Species on statutory and conservation status lists, such as Schedule 1, Birds of Conservation Concern 5, or Section 7 (Wales) are highlighted. Some lists consider subspecies or populations (e.g. Greenland White-fronted Goose, Hebridean Song Thrush) for which BTO data are not ideally suited. We therefore include the parent species in these analyses to ensure appropriate warnings are raised and dedicated surveys may be required.

Systematic bird recording often involves the assignment of 'breeding evidence' to records. Breeding evidence is hierarchical, having three levels: possible breeding, probable breeding and confirmed breeding. These are directly inferred from field observations and indicate the certainty that can be ascribed to the record that breeding is taking place at a location. For example, a bird singing in suitable territory is assigned possible breeding evidence, a bird carrying nesting material is assigned probable breeding evidence, whereas recently fledged young amounts to confirmed breeding evidence. Lack of breeding evidence (i.e. simple presence) can reflect either that the observer did not witness appropriate behaviours indicative of breeding, or that submission of breeding evidence was not mandatory for that particular data source.

Lack of breeding evidence in the data should not be assumed to indicate lack of breeding.

See below for details about each dataset and an assessment of the quantity of data relating to the site and its relevant grid squares.

3.1 Comprehensive species assessment 2007–2011

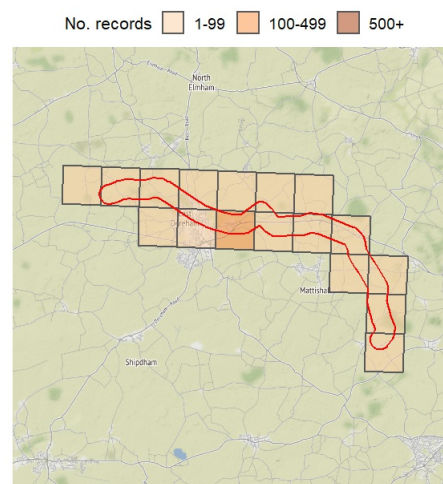


Bird Atlas 2007–11 (BTO, BirdWatch Ireland and the Scottish Ornithologists' Club) provides data at two resolutions: complete 10-km distribution datasets and sample 2-km distribution and relative abundance datasets. Although the Bird Atlas data are now 11 years old, they still provide the most recent and comprehensive assessment of bird distributions available. **All three relevant 10-km squares** that the site spans will have been surveyed in winter and the breeding season to provide 10-km resolution distribution information. Unstructured data (i.e. casual records) at tetrad resolution were provided for **15 relevant tetrads** in the breeding season and for **16 relevant tetrads** in winter. The total numbers of records submitted across this set of tetrads in the breeding season and winter were **353 records** and **427 records** respectively.

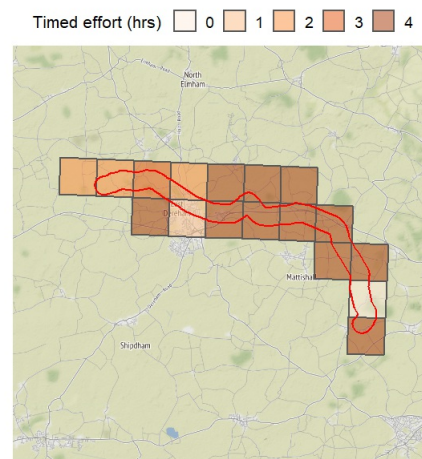
Additionally, at least 32% of tetrads in each 10-km square received timed visits, amounting to structured data for 50089 tetrads across Britain and Ireland. Of the 17 relevant tetrads that the site spans, **16 (94.1%)** received Timed Tetrad Visits in the breeding season (54 hours of recording effort). Similarly, **16 tetrads (94.1%)** were visited in winter (53 hours).

Data quality control: All records have been manually verified prior to use.

Distribution of casual records (breeding)



Distribution of timed effort (breeding)



3.2 Contemporary species assessment 2018–2022

The current species assessment is based on the following data sources.

3.2.1 Breeding Bird Survey



The UK *Breeding Bird Survey* (BBS hereafter; BTO, JNCC, RSPB) is an annual survey of over 4000 randomly selected 1-km squares across the UK. Each square is surveyed twice per breeding season, providing up to date records of bird occurrence in this c.3% sample of the UK. The BBS does not require observers to provide breeding evidence information. Consequently, all records relate to presence information; *it should not be assumed that lack of breeding evidence means species were not breeding at or near the site*. This Report queries data from the 4900 1-km squares surveyed for the BBS during 2017–2020. Only **one** of the relevant 1-km squares was also a BBS square (TG0013). That square was surveyed for four years, most recently in **2020**.

Data quality control: All records have been manually verified prior to use.

3.2.2 BirdTrack



BirdTrack (BTO, RSPB, BirdWatch Ireland, Scottish Ornithologists' Club and Welsh Ornithological Society) provides information on recent sightings of birds throughout Britain and Ireland. Unlike *Bird Atlas*, which has a structured component ensuring complete coverage of 10-km squares, *BirdTrack* is unstructured and coverage is strongly associated with the distribution and birdwatching preferences of observers. The consequent variation in recording effort means that for some areas there be less information to generate a report. A further difference from *Bird Atlas* is that observers are not required to provide breeding evidence information. Consequently, some searches may yield only presence information; it should not be assumed that lack of breeding evidence means species were not breeding at or near the site. Observers are free to birdwatch where they choose, and can provide records with varying levels of spatial precision, from pin-pointed records, to large polygons that may span multiple grid squares. The assessment includes data for the breeding season (March–July inclusive) and non-breeding season (August–February inclusive) for the last five years and is summarised with respect to the relevant grid squares, summarising records to the finest spatial precision that the records permit.

BirdTrack data were available for **47%** of the site's relevant tetrads in the breeding season (100% of 10-km squares), including data from **2021**. Data were available for **88%** of the site's relevant tetrads in winter (100% of 10-km squares), including data from **2022**.

Data quality control: Observers are warned of 'threshold breaking' records at the point of data entry (unusual place or date for a species; unusually high count) and given the opportunity to correct mistakes. Further manual verification occurs but as BirdTrack data are 'live', the verification status of individual records varies. Rejected records and any in an active state of query are excluded from the Report.

4. SPECIES LISTS

4.1 Species assessment 2007–2011

This section summarises comprehensive *Bird Atlas 2007–11* distribution data for the 17 relevant tetrads and three relevant 10-km squares the site spans. It also considers data from the two relevant 20-km squares and two relevant 50-km squares for any confidential RBBP species records.

4.1.1 Breeding season

Bird Atlas 2007–11 indicate **101 species** with breeding evidence in the vicinity of the site at a range of spatial resolutions (Table 1). At the highest level of spatial resolution achievable with Bird Atlas data, 72 species were recorded with breeding evidence in the site's relevant tetrads. The following confidential species were recorded with breeding evidence during 2007–11 in the same 50-km square(s) as the site: Crane, Honey-buzzard, Montagu's Harrier, Red-backed Shrike. See Appendix 3 for the full list of species with breeding evidence recorded in the vicinity of the site.

Table 1. Numbers of species in the breeding season recorded during 2007–11 at different spatial resolutions relative to the site. Rows give figures for all species, and according to various lists of important features. Columns indicate status in relevant grid squares of different sizes.

Species category	2-km	10-km	20-km	50-km
All species	72	25	0	4
Annex 1	1	3	0	4
BoCC Amber	20	7	0	2
BoCC Red	16	7	0	2
IUCN2 Critically Endangered	1	1	0	2
IUCN2 Endangered	3	3	0	1
IUCN2 Near Threatened	10	4	0	0
IUCN2 Vulnerable	13	5	0	1
RBBP	1	7	0	4
Schedule 1 UK	2	7	0	3
Schedule ZA1 England & Wales	0	0	0	0
Section 41 England	16	4	0	0

4.1.2 Winter

Bird Atlas 2007–11 indicates **122 species** were recorded in the vicinity of the site in winter at a range of spatial resolutions (Table 2). At the highest level of spatial resolution achievable with Bird Atlas data, 79 species were recorded in winter in the site's relevant tetrads. No confidential species were recorded in winter in any of the site's relevant 20-km or 50-km squares. See Appendix 3 for the full list of species recorded in the vicinity of the site.

Table 2. Numbers of species in winter during 2007–11 at different spatial resolutions relative to the site. Rows give figures for all species, and according to various lists of important features. Columns indicate status in relevant grid squares of different sizes.

Species category	2-km	10-km	20-km	50-km
All species	79	43	0	0
Annex 1	4	13	0	0
BoCC Amber	26	13	0	0
BoCC Red	13	14	0	0
IUCN2 Critically Endangered	3	4	0	0
IUCN2 Endangered	6	9	0	0
IUCN2 Near Threatened	8	2	0	0
IUCN2 Vulnerable	12	9	0	0
RBBP	9	24	0	0
Schedule 1 UK	8	13	0	0
Schedule ZA1 England & Wales	0	0	0	0
Section 41 England	14	10	0	0

4.2 Species assessment 2018–2022

4.2.1 Breeding season

The assessment of current species associated with the site in the breeding season is based on BBS and BirdTrack. This information summarises species with and without breeding evidence as (unlike Bird Atlas data) these data sources do not require evidence to be submitted. These sources indicate **144 species** recorded in the vicinity of the site in the breeding season at a range of spatial resolutions (Table 3). At the highest level of spatial resolution achievable with these data, 48 species were recorded in the same 1-km square(s) as the site. Some BirdTrack sites spanned 10-km square boundaries; any species associated with these BirdTrack sites and not present at a finer resolution are summarised in the '>10-km' column. Particular care should be taken with such records as the species could have been recorded some distance from the site. See Appendix 4 for the full list of species recorded in the vicinity of the site during 2018–2022.

Table 3. Numbers of species in the breeding season during 2018–2022 at different spatial resolutions relative to the site. Rows give figures for all species, and according to various lists of important features. Columns indicate status in relevant grid squares of different sizes.

Species category	1-km	2-km	10-km	>10-km
All species	48	40	43	13
Annex 1	0	4	13	5
BoCC Amber	17	11	18	9
BoCC Red	10	8	13	2
IUCN2 Critically Endangered	0	4	2	1
IUCN2 Endangered	5	1	9	5
IUCN2 Near Threatened	4	8	6	1
IUCN2 Vulnerable	7	7	8	1
RBBP	0	7	18	10
Schedule 1 UK	0	9	12	10
Schedule ZA1 England & Wales	0	0	1	1
Section 41 England	9	8	12	0

4.2.2 Non-breeding season

The assessment of current species associated with the site is based on BirdTrack and indicate **126 species** recorded in the vicinity of the site in the non-breeding season at a range of spatial resolutions (Table 4). Some BirdTrack sites spanned 10-km square boundaries; any species associated with these BirdTrack sites and not present at a finer resolution are summarised in the '>10-km' column. Particular care should be taken with such records as the species could have been recorded some distance from the site. See Appendix 4 for the full list of species recorded in the vicinity of the site during 2018–2022.

Table 4. Numbers of species in the non-breeding season during 2018–2022 at different spatial resolutions relative to the site. Rows give figures for all species, and according to various lists of important features. Columns indicate status in relevant grid squares of different sizes.

Species category	1-km	2-km	10-km	>10-km
All species	0	82	32	12
Annex 1	0	5	3	3
BoCC Amber	0	27	9	6
BoCC Red	0	15	7	3
IUCN2 Critically Endangered	0	3	0	0
IUCN2 Endangered	0	6	5	6
IUCN2 Near Threatened	0	9	3	1
IUCN2 Vulnerable	0	13	7	1
RBBP	0	9	12	6
Schedule 1 UK	0	8	4	5
Schedule ZA1 England & Wales	0	0	0	0
Section 41 England	0	14	7	3

5. SITE IMPORTANCE

A site may be important if it supports a high proportion of a species' local, regional or national population, or if its population trends are more positive at the site compared to elsewhere. Whilst data are not available at sufficiently fine scales to assess the site itself (see Section 2), here we used *Bird Atlas 2007–11* distribution and relative abundance data for relevant 10-km squares to assess the area in which the site falls.

For each species we express its range and population size in the vicinity of the site relative to the total range size and population size in different geographic contexts, ranging from vice-counties and counties, through regions, to countries. This requires determining how many of the relevant 10-km squares spanned by the site are occupied (e.g. one) and how many 10-km squares in the larger region are occupied (e.g. 20); in this case the site and its vicinity account for 5% ($= 1/20$) of the species' range in the region. As large sites will tend to account for a higher percentage of range than small sites, such figures need to be bench-marked to allow comparability across sites. This requires knowing how many of the site's relevant 10-km squares fall in the region (e.g. one) and the total number of 10-km squares in the region (e.g. 100); in this case the site's 'percentage size' is 1% ($= 1/100$). We define **Notable species** as those for which the percentage range is at least twice the site's percentage size. In the above examples the percentage range (5%) is more than double the site's percentage size (1%) so the species would be highlighted as Notable. The exception to this rule is at the scale of United Kingdom where we mark species as **Notable** if the site and vicinity account for 2% or more of the species' UK range.

Distribution data are available for all species for the above analysis. However, distribution data ignore the fact that some species vary widely in abundance within their range. Therefore, to supplement the results above, we undertake a similar exercise using relative abundance data which can help to highlight species for which the site and its vicinity is a particular hot-spot of locally, regionally or nationally high density. *Bird Atlas 2007–11* data give a relative density measure for each terrestrial species in each 10-km square (**colonial seabirds are excluded**). These can be summarised in the same way as distribution data to estimate the percentage of the region's population size found at the site and its vicinity. Calculations of percentages and derivation of Notable species are as above.

Lastly, breeding season relative abundance data are available for two periods, 1988–91 and 2008–11, allowing for an assessment of relative abundance change for terrestrial bird species over this interval for the site and its vicinity (**colonial seabirds are excluded**). By comparing such values with corresponding change measures for the wider region we can identify species for which the site and its vicinity has had more positive population trends (i.e. increasing more than elsewhere, or declining less). This may indicate that the 10-km squares in which the site falls are an important refuge for these species in a local, regional or national context. When interpreted alongside the species lists in Section 4 and the result of any commissioned field surveys, these results can help to identify species for which the site may be particularly important. For very small sites spanning only a single 10-km square these results should be interpreted with caution.

It is important to remember that all these calculations use 10-km resolution data so relate to the site and its vicinity, not strictly to the site alone.

5.1 Country: UK, Isle of Man and Channel Islands

Overall, three of the 10-km squares that include the site fall in UK, Isle of Man and Channel Islands, accounting for 0.099% of 10-km squares in UK, Isle of Man and Channel Islands. According to *Bird Atlas* data, these squares support between 0% and 2.1% of the geographic range in UK, Isle of Man and Channel Islands of all the species considered (breeding and winter combined). In terms of abundance, these squares represent between 0% and 3.5% of the total population size in UK, Isle of Man and Channel Islands. In the context of the United Kingdom, **notable species** are defined as those for which the site's relevant 10-km squares account for at least 2% of geographic range in the UK. If any species qualify they are listed below, with those on the **BoCC Red List** and **BoCC Amber List** highlighted in corresponding colour:

- Breeding range, one species: **Marsh Warbler**
- Winter range, zero species:
- Breeding abundance, one species: Egyptian Goose
- Winter abundance, one species: Egyptian Goose

Between 1988–91 and 2008–11, there were 41 species for which relative abundance increased more (or decreased less) at/near the site compared to the relative abundance changes apparent across the rest of UK, Isle of Man and Channel Islands. The ten species with the most positive difference in trend between site and region are listed below and all species can be seen in Figure 5.1 in Appendix 5.

- **Grey Partridge**, **Stock Dove**, Collared Dove, **Rook**, Carrion Crow, **Skylark**, Pied/White Wagtail, **Bullfinch**, **Greenfinch**, **Yellowhammer**

There were 44 species for which the opposite was the case, i.e. that they were declining more (or increasing less) at/near the site compared to the rest of UK, Isle of Man and Channel Islands. The ten species with the most negative difference in trend between site and region were:

- Canada Goose, Mute Swan, **Shelduck**, **Gadwall**, **Cuckoo**, Sand Martin, **Willow Warbler**, Reed Warbler, **Song Thrush**, **Lesser Redpoll**

5.2 Country: England

Overall, three of the 10-km squares that include the site fall in England, accounting for 0.2% of 10-km squares in England. According to *Bird Atlas* data, these squares support between 0.1% and 2.4% of the geographic range in England of all the species considered (breeding and winter combined). In terms of abundance, these squares represent between 0% and 3.5% of the total population size in England. **Notable species** for England are listed below, with those on the **BoCC Red List** and **BoCC Amber List** highlighted in corresponding colour:

- Breeding range, eight species: Egyptian Goose, **Gadwall**, **Turtle Dove**, **Common Tern**, Little Egret, **Marsh Harrier**, **Marsh Warbler**, Firecrest
- Winter range, 10 species: Egyptian Goose, **Slavonian Grebe**, **Black-throated Diver**, **Great White Egret**, **Marsh Harrier**, Rough-legged Buzzard, Long-eared Owl, **Lesser Spotted Woodpecker**, Woodlark, Cetti's Warbler
- Breeding abundance, nine species: Egyptian Goose, **Grey Partridge**, Red-legged Partridge, **Woodpigeon**, Water Rail, Barn Owl, **Rook**, **Greenfinch**, **Yellowhammer**
- Winter abundance, 10 species: Egyptian Goose, **Grey Partridge**, Red-legged Partridge, Collared Dove, Barn Owl, Jay, **Rook**, Woodlark, **Greenfinch**, **Yellowhammer**

Between 1988–91 and 2008–11, there were 41 species for which relative abundance increased more (or decreased less) at/near the site compared to the relative abundance changes apparent across the rest of England. The ten species with the most positive difference in trend between site and region are listed below and all species can be seen in Figure 5.2 in Appendix 5.

- **Grey Partridge**, **Stock Dove**, Collared Dove, Carrion Crow, **Skylark**, Treecreeper, Pied/White Wagtail, **Bullfinch**, **Greenfinch**, **Yellowhammer**

There were 44 species for which the opposite was the case, i.e. that they were declining more (or increasing less) at/near the site compared to the rest of England. The ten species with the most negative difference in trend between site and region were:

- Canada Goose, Mute Swan, **Shelduck**, **Gadwall**, Coot, Buzzard, **Kestrel**, Sand Martin, Reed Warbler, **Song**

5.3 Region: East of England

Overall, three of the 10-km squares that include the site fall in East of England, accounting for 1.3% of 10-km squares in East of England. According to *Bird Atlas* data, these squares support between 0.5% and 6.7% of the geographic range in East of England of all the species considered (breeding and winter combined). In terms of abundance, these squares represent between 0% and 5.4% of the total population size in East of England. **Notable species** for East of England are listed below, with those on the **BoCC Red List** and **BoCC Amber List** highlighted in corresponding colour:

- Breeding range, one species: **Marsh Warbler**
- Winter range, six species: **Black-throated Diver**, **Great White Egret**, Goshawk, Long-eared Owl, **Lesser Spotted Woodpecker**, **Willow Tit**
- Breeding abundance, two species: Egyptian Goose, Water Rail
- Winter abundance, five species: Egyptian Goose, Barn Owl, **Rook**, Woodlark, **Yellowhammer**

Between 1988–91 and 2008–11, there were 40 species for which relative abundance increased more (or decreased less) at/near the site compared to the relative abundance changes apparent across the rest of East of England. The ten species with the most positive difference in trend between site and region are listed below and all species can be seen in Figure 5.3 in Appendix 5.

- Red-legged Partridge, Collared Dove, **Skylark**, Treecreeper, **House Sparrow**, **Bullfinch**, **Greenfinch**, **Linnet**, **Goldfinch**, **Yellowhammer**

There were 45 species for which the opposite was the case, i.e. that they were declining more (or increasing less) at/near the site compared to the rest of East of England. The ten species with the most negative difference in trend between site and region were:

- Canada Goose, Mute Swan, Egyptian Goose, **Shelduck**, **Pochard**, Little Grebe, Green Woodpecker, **Marsh Tit**, Sand Martin, Reed Warbler

5.4 County: Norfolk

Overall, three of the 10-km squares that include the site fall in Norfolk, accounting for 3.9% of 10-km squares in Norfolk. According to *Bird Atlas* data, these squares support between 1.6% and 12.5% of the geographic range in Norfolk of all the species considered (breeding and winter combined). In terms of abundance, these squares represent between 0% and 19.5% of the total population size in Norfolk. **Notable species** for Norfolk are listed below, with those on the **BoCC Red List** and **BoCC Amber List** highlighted in corresponding colour:

- Breeding range, one species: **Marsh Warbler**
- Winter range, three species: Mandarin Duck, Long-eared Owl, **Lesser Spotted Woodpecker**
- Breeding abundance, three species: Water Rail, Sand Martin, **Spotted Flycatcher**
- Winter abundance, four species: Mandarin Duck, **Rook**, Woodlark, **Yellowhammer**

Between 1988–91 and 2008–11, there were 38 species for which relative abundance increased more (or decreased less) at/near the site compared to the relative abundance changes apparent across the rest of Norfolk. The ten species with the most positive difference in trend between site and region are listed below and all species can be seen in Figure 5.4 in Appendix 5.

- **Grey Partridge**, Red-legged Partridge, Collared Dove, **Skylark**, **Starling**, **House Sparrow**, **Bullfinch**, **Greenfinch**, **Linnet**, **Yellowhammer**

There were 47 species for which the opposite was the case, i.e. that they were declining more (or increasing less) at/near the site compared to the rest of Norfolk. The ten species with the most negative difference in trend between site and region were:

- Canada Goose, Mute Swan, Egyptian Goose, **Shelduck**, **Gadwall**, Little Grebe, Jackdaw, **Marsh Tit**, Sand Martin, Reed Warbler

5.5 Vice-county: East Norfolk

Overall, two of the 10-km squares that include the site fall in East Norfolk, accounting for 5.4% of 10-km squares in East Norfolk. According to *Bird Atlas* data, these squares support between 3.1% and 20% of the geographic range in East Norfolk of all the species considered (breeding and winter combined). In terms of abundance, these squares represent between 0.1% and 100% of the total population size in East Norfolk. **Notable species** for East Norfolk are listed below, with those on the **BoCC Red List** and **BoCC Amber List** highlighted in corresponding colour:

- Breeding range, four species: Little Egret, **Marsh Warbler**, Firecrest, **Corn Bunting**
- Winter range, five species: **Black-throated Diver**, **Great White Egret**, Goshawk, **Lesser Spotted Woodpecker**, **Corn Bunting**
- Breeding abundance, five species: **Grey Partridge**, Water Rail, Little Ringed Plover, **Spotted Flycatcher**, **Tree Sparrow**
- Winter abundance, three species: **Grey Partridge**, Woodlark, **Yellowhammer**

Between 1988–91 and 2008–11, there were 54 species for which relative abundance increased more (or decreased less) at/near the site compared to the relative abundance changes apparent across the rest of East Norfolk. The ten species with the most positive difference in trend between site and region are listed below and all species can be seen in Figure 5.5 in Appendix 5.

- Red-legged Partridge, **Moorhen**, Carrion Crow, **Skylark**, **House Martin**, Blackcap, **Starling**, **Tree Sparrow**, **Bullfinch**, **Linnet**

There were 30 species for which the opposite was the case, i.e. that they were declining more (or increasing less) at/near the site compared to the rest of East Norfolk. The ten species with the most negative difference in trend between site and region were:

- Canada Goose, Mute Swan, Egyptian Goose, **Shelduck**, **Pochard**, Little Grebe, **Oystercatcher**, Sand Martin, Reed Warbler, **Grey Wagtail**

5.6 Vice-county: West Norfolk

Overall, three of the 10-km squares that include the site fall in West Norfolk, accounting for 6.5% of 10-km squares in West Norfolk. According to *Bird Atlas* data, these squares support between 2.5% and 33.3% of the geographic range in West Norfolk of all the species considered (breeding and winter combined). In terms of abundance, these squares represent between 0% and 32.9% of the total population size in West Norfolk. **Notable species** for West Norfolk are listed below, with those on the **BoCC Red List** and **BoCC Amber List** highlighted in corresponding colour:

- Breeding range, one species: **Marsh Warbler**
- Winter range, two species: **Black-throated Diver**, **Lesser Spotted Woodpecker**
- Breeding abundance, three species: Water Rail, Sand Martin, **Spotted Flycatcher**
- Winter abundance, four species: Mandarin Duck, **Rook**, Woodlark, **Yellowhammer**

Between 1988–91 and 2008–11, there were 36 species for which relative abundance increased more (or decreased less) at/near the site compared to the relative abundance changes apparent across the rest of West Norfolk. The ten species with the most positive difference in trend between site and region are listed below and all species can be seen in Figure 5.6 in Appendix 5.

- **Grey Partridge**, Red-legged Partridge, Collared Dove, **Skylark**, **Tree Sparrow**, **House Sparrow**, **Bullfinch**, **Greenfinch**, Goldfinch, **Yellowhammer**

There were 49 species for which the opposite was the case, i.e. that they were declining more (or increasing less) at/near the site compared to the rest of West Norfolk. The ten species with the most negative difference in trend between site and region were:

- Canada Goose, Mute Swan, Egyptian Goose, **Shelduck**, **Gadwall**, Little Grebe, **Lapwing**, **Marsh Tit**, Sand Martin, Reed Warbler

APPENDICES

Appendix 1. Contextual maps

Maps of the site with reference to geographical context areas at different scales, and for different sized grids used for data extraction. Note that for some of the larger context areas the site may be too small to see on the map.

Country

Country = UK, Isle of Man and Channel Islands, England



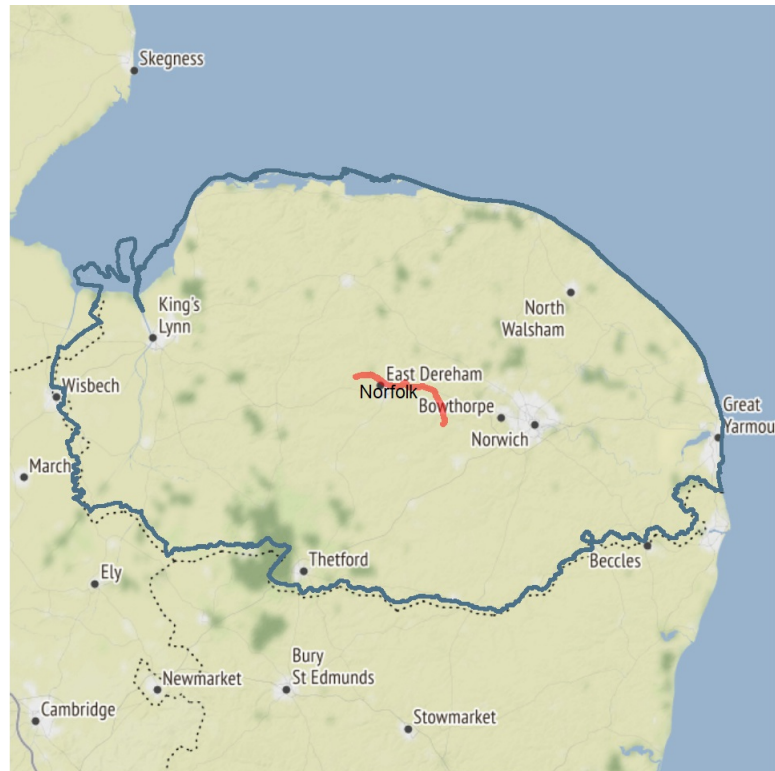
Region

Region = East of England



County

County = Norfolk



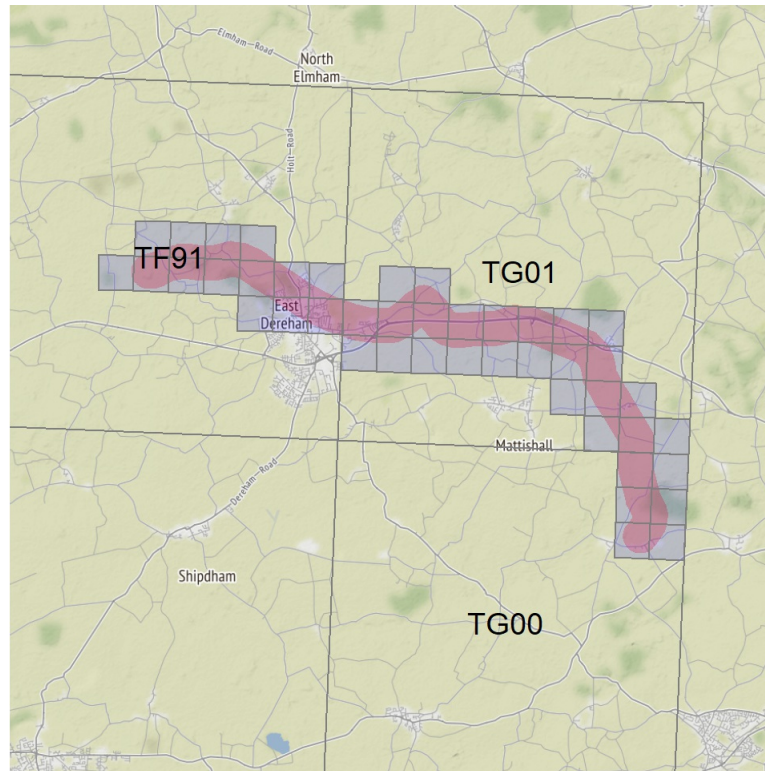
Vice-county

Vice-county = East Norfolk, West Norfolk



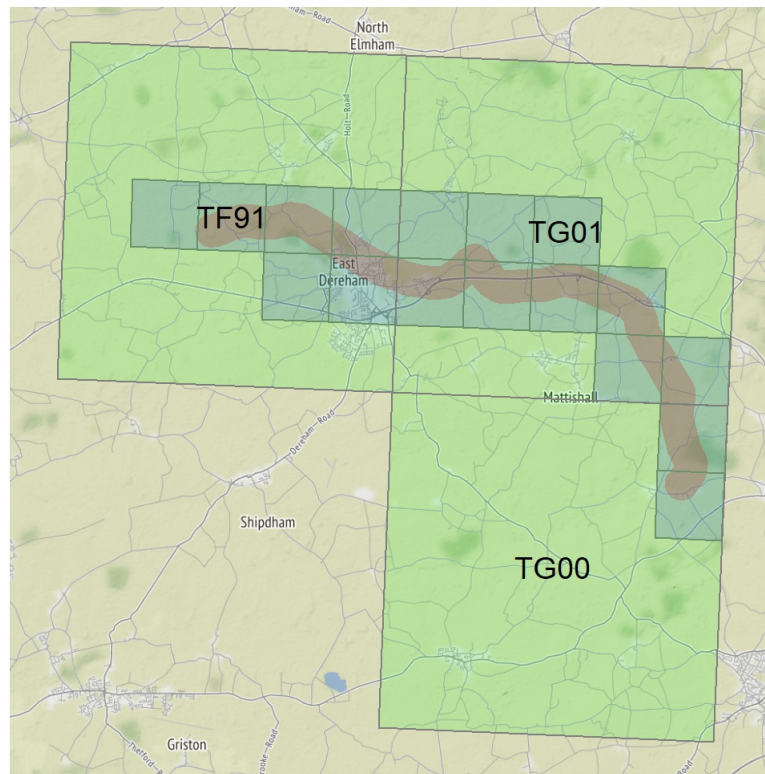
Site with 1-km squares

Forty-four relevant 1-km squares (too many to list).



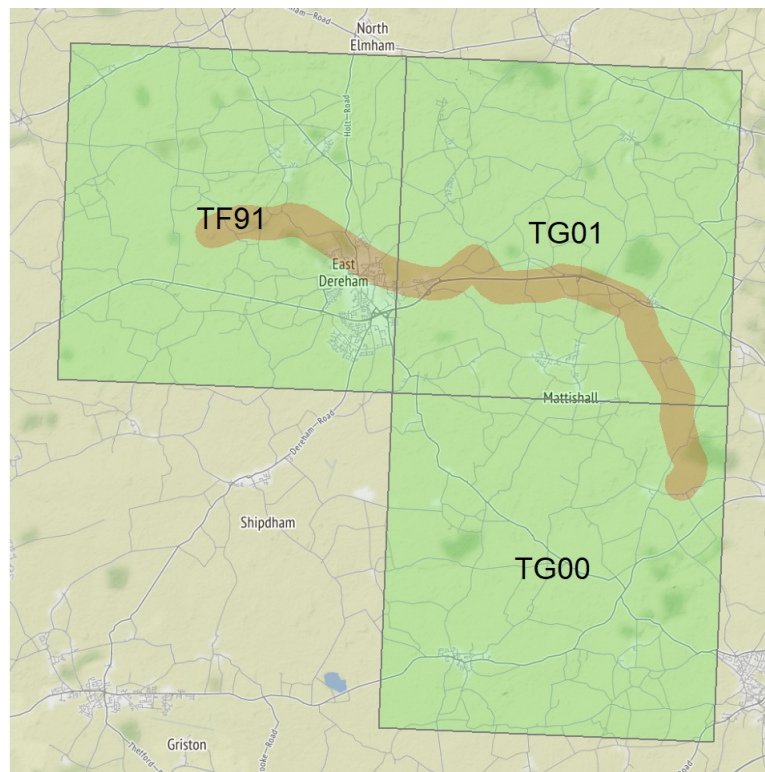
Site with tetrads

Seventeen relevant tetrads : TF91H, TF91M, TF91R, TF91S, TF91W, TF91X, TG00Y, TG00Z, TG01B, TG01C, TG01G, TG01H, TG01L, TG01M, TG01Q, TG01R, TG01V



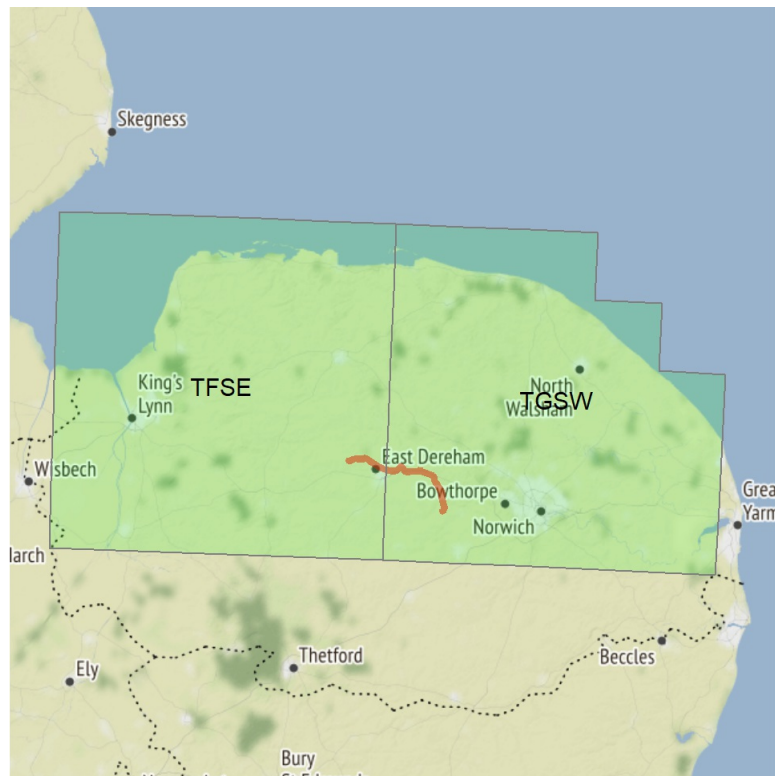
Site with 10-km squares

Three relevant 10-km squares : TF91, TG00, TG01



Site with 50-km squares

Two relevant 50-km squares : TFSE, TGSW

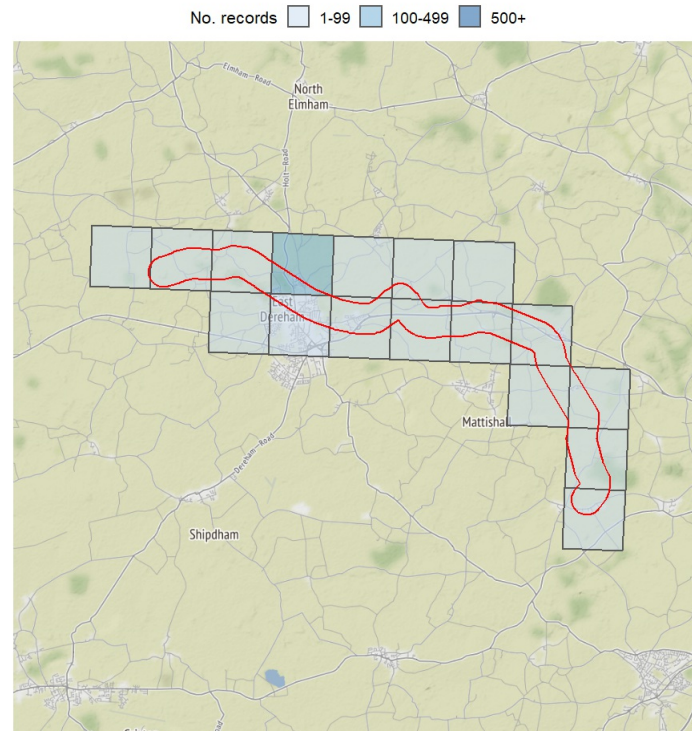


Appendix 2. Additional coverage maps

Atlas winter coverage

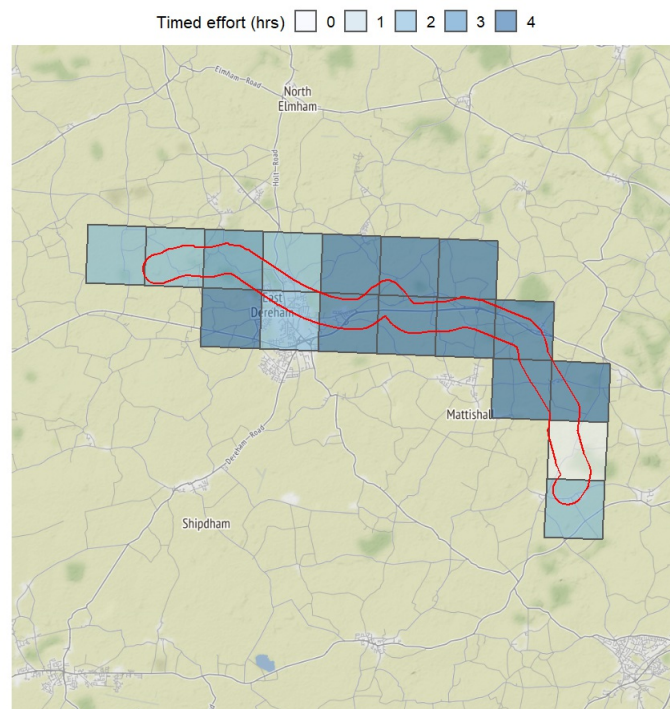
Map of unstructured Bird Atlas coverage in winter

Distribution of casual records (winter)



Map of structured Bird Atlas coverage in winter

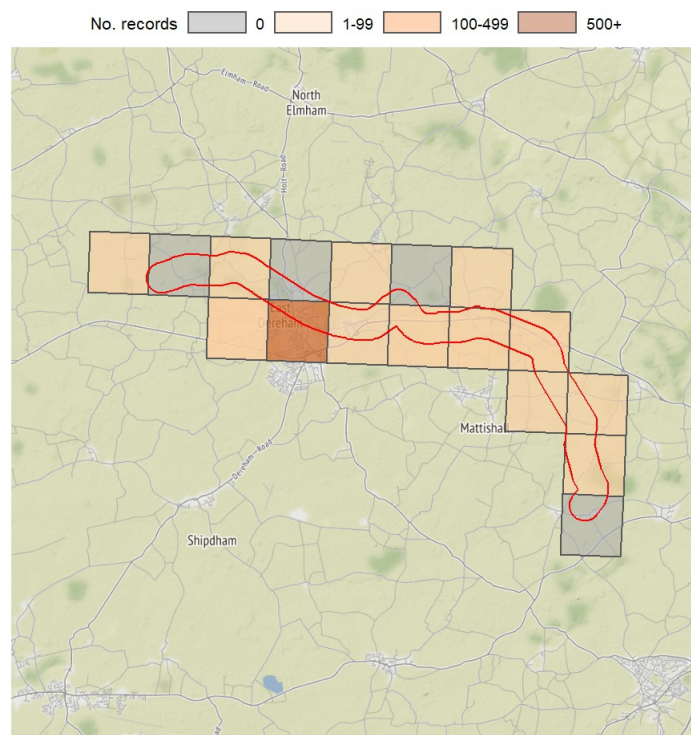
Distribution of timed effort (winter)



BirdTrack coverage

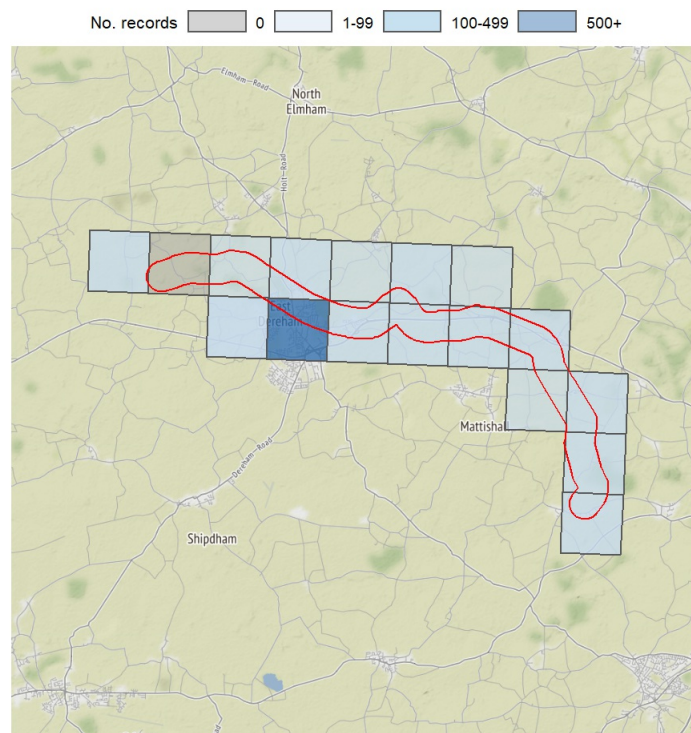
Map of BirdTrack recording effort in the breeding season. Grey shading indicates no sites centred in the tetrad, although sites from bordering tetrads may have extended into the tetrad.

Distribution of BirdTrack records (breeding)



Map of BirdTrack recording effort in the non-breeding season. Grey shading indicates no sites centred in the tetrad, although sites from bordering tetrads may have extended into the tetrad.

Distribution of BirdTrack records (non-breeding)



Appendix 3. Species list 2007–11

Feature column heading abbreviations: S1 = Schedule 1 UK; A1 = Annex 1; Amber, Red = BoCC5 Amber and Red list; CR, EN, NT, VU = GB IUCN2 Critically Endangered, Endangered, Near Threatened and Vulnerable; S41E = Section 41 England; SZA1EW = Schedule ZA1 England & Wales; S1AS = Schedule 1A Scotland; SA1S = Schedule A1 Scotland; SBL = Scottish Biodiversity List; S7W = Section 7 Wales.

Breeding season

Code	Species	S1	Red	Amber	CR	EN	NT	VU	A1	RBBP	S41E	SZA1EW	Tetrad	10-km/20-km/50-km
CG	Canada Goose												Confirmed	Confirmed
GJ	Greylag Goose			Y									Confirmed	Confirmed
MS	Mute Swan													Confirmed
EG	Egyptian Goose												Confirmed	Confirmed
SU	Shelduck			Y		Y								Confirmed
GA	Gadwall			Y										Confirmed
MA	Mallard			Y				Y					Confirmed	Confirmed
PO	Pochard		Y			Y				Y				Probable
TU	Tufted Duck							Y					Probable	Confirmed
P.	Grey Partridge		Y					Y			Y		Probable	Confirmed
PH	Pheasant												Confirmed	Confirmed
Q.	Quail		Y		Y		Y			Y				Possible
RL	Red-legged Partridge												Confirmed	Confirmed
SI	Swift		Y			Y							Confirmed	Confirmed
CK	Cuckoo		Y								Y		Possible	Probable
DV	Rock Dove												Probable	Probable
SD	Stock Dove			Y									Confirmed	Confirmed
WP	Woodpigeon			Y									Confirmed	Confirmed
TD	Turtle Dove		Y		Y					Y	Y		Possible	Probable
CD	Collared Dove						Y						Confirmed	Confirmed
WA	Water Rail													Possible
MH	Moorhen			Y				Y					Confirmed	Confirmed
CO	Coot							Y						Confirmed
AN	Crane			Y				Y	Y	Y				Confirmed (50-km)
LG	Little Grebe													Confirmed
GG	Great Crested Grebe													Confirmed
OC	Oystercatcher			Y				Y					Confirmed	Confirmed
L.	Lapwing		Y					Y			Y		Confirmed	Confirmed
LP	Little Ringed Plover	Y								Y				Confirmed
WK	Woodcock		Y					Y						Possible
SN	Snipe			Y				Y					Possible	Probable
BH	Black-headed Gull			Y				Y						Confirmed
CN	Common Tern			Y			Y		Y					Confirmed
H.	Grey Heron							Y					Possible	Confirmed
ET	Little Egret								Y	Y				Possible
HZ	Honey-buzzard	Y		Y		Y			Y	Y				Confirmed (50-km)
SH	Sparrowhawk			Y				Y					Confirmed	Confirmed
MR	Marsh Harrier	Y		Y					Y	Y				Confirmed

Code	Species	S1	Red	Amber	CR	EN	NT	VU	A1	RBBP	S41E	SZA1EW	Tetrad	10-km/20-km/50-km
MO	Montagu's Harrier	Y	Y		Y				Y	Y				Confirmed (50-km)
BZ	Buzzard												Probable	Confirmed
BO	Barn Owl	Y											Confirmed	Confirmed
LO	Little Owl												Confirmed	Confirmed
TO	Tawny Owl			Y			Y						Probable	Confirmed
KF	Kingfisher	Y						Y	Y				Probable	Confirmed
GS	Great Spotted Woodpecker												Probable	Confirmed
G.	Green Woodpecker						Y						Confirmed	Confirmed
K.	Kestrel			Y				Y					Confirmed	Confirmed
HY	Hobby	Y					Y			Y				Confirmed
ED	Red-backed Shrike	Y	Y		Y				Y	Y				Probable (50-km)
J.	Jay												Confirmed	Confirmed
MG	Magpie												Confirmed	Confirmed
JD	Jackdaw												Confirmed	Confirmed
RO	Rook			Y			Y						Confirmed	Confirmed
C.	Carrion Crow												Confirmed	Confirmed
CT	Coal Tit												Confirmed	Confirmed
MT	Marsh Tit		Y				Y				Y		Confirmed	Confirmed
BT	Blue Tit												Confirmed	Confirmed
GT	Great Tit												Confirmed	Confirmed
S.	Skylark		Y								Y		Confirmed	Confirmed
SM	Sand Martin													Confirmed
SL	Swallow							Y					Confirmed	Confirmed
HM	House Martin		Y				Y						Confirmed	Confirmed
CW	Cetti's Warbler	Y												Probable
LT	Long-tailed Tit												Confirmed	Confirmed
WW	Willow Warbler			Y									Confirmed	Confirmed
CC	Chiffchaff												Confirmed	Confirmed
SW	Sedge Warbler			Y			Y						Possible	Confirmed
RW	Reed Warbler												Possible	Confirmed
MW	Marsh Warbler	Y	Y		Y					Y	Y			Possible
GH	Grasshopper Warbler		Y								Y		Possible	Possible
BC	Blackcap												Confirmed	Confirmed
GW	Garden Warbler												Confirmed	Confirmed
LW	Lesser Whitethroat												Probable	Confirmed
WH	Whitethroat			Y									Confirmed	Confirmed
FC	Firecrest	Y												Possible
GC	Goldcrest												Confirmed	Confirmed
WR	Wren			Y									Confirmed	Confirmed
NH	Nuthatch												Probable	Confirmed
TC	Treecreeper												Probable	Confirmed
SG	Starling		Y					Y			Y		Confirmed	Confirmed
ST	Song Thrush			Y							Y		Confirmed	Confirmed
M.	Mistle Thrush		Y				Y						Confirmed	Confirmed
B.	Blackbird												Confirmed	Confirmed
SF	Spotted Flycatcher		Y				Y				Y		Probable	Confirmed
R.	Robin												Confirmed	Confirmed

Code	Species	S1	Red	Amber	CR	EN	NT	VU	A1	RBBP	S41E	SZA1EW	Tetrad	10-km/20-km/50-km
N.	Nightingale		Y					Y						Confirmed
TS	Tree Sparrow		Y					Y			Y			Confirmed
HS	House Sparrow		Y								Y		Confirmed	Confirmed
D.	Dunnock			Y							Y		Confirmed	Confirmed
YW	Yellow Wagtail		Y				Y				Y			Probable
GL	Grey Wagtail			Y			Y						Confirmed	Confirmed
PW	Pied Wagtail												Confirmed	Confirmed
MP	Meadow Pipit			Y										Probable
CH	Chaffinch					Y							Confirmed	Confirmed
BF	Bullfinch			Y							Y		Confirmed	Confirmed
GR	Greenfinch		Y			Y							Confirmed	Confirmed
LI	Linnet		Y								Y		Confirmed	Confirmed
GO	Goldfinch												Confirmed	Confirmed
CB	Corn Bunting		Y				Y				Y			Possible
Y.	Yellowhammer		Y								Y		Confirmed	Confirmed
RB	Reed Bunting			Y							Y		Probable	Confirmed

Winter

Code	Species	S1	Red	Amber	CR	EN	NT	VU	A1	RBBP	S41E	SZA1EW	Tetrad	10-km/20-km/50-km
CG	Canada Goose												Present	Present
BY	Barnacle Goose			Y				Y						Present
GJ	Greylag Goose			Y									Present	Present
PG	Pink-footed Goose			Y						Y				Present
WG	White-fronted Goose		Y			Y					Y			Present
MS	Mute Swan												Present	Present
BS	Bewick's Swan		Y	Y		Y			Y	Y	Y			Present
WS	Whooper Swan		Y		Y	Y			Y	Y			Present	Present
EG	Egyptian Goose												Present	Present
SU	Shelduck			Y		Y								Present
MN	Mandarin Duck													Present
SV	Shoveler			Y						Y				Present
GA	Gadwall			Y										Present
WN	Wigeon			Y				Y		Y			Present	Present
MA	Mallard			Y				Y					Present	Present
PT	Pintail			Y	Y					Y				Present
T.	Teal			Y									Present	Present
PO	Pochard		Y			Y				Y				Present
TU	Tufted Duck							Y						Present
SP	Scaup		Y	Y		Y				Y	Y			Present
GN	Goldeneye		Y					Y		Y				Present
SY	Smew		Y		Y				Y	Y				Present
GD	Goosander													Present
P.	Grey Partridge		Y					Y			Y			Present
PH	Pheasant												Present	Present
RL	Red-legged Partridge												Present	Present
DV	Rock Dove												Present	Present
SD	Stock Dove			Y									Present	Present
WP	Woodpigeon			Y									Present	Present
CD	Collared Dove						Y						Present	Present
WA	Water Rail												Present	Present
MH	Moorhen			Y				Y					Present	Present
CO	Coot							Y					Present	Present
LG	Little Grebe													Present
GG	Great Crested Grebe													Present
SZ	Slavonian Grebe		Y	Y		Y			Y	Y				Present
OC	Oystercatcher			Y				Y						Present
L.	Lapwing		Y					Y			Y		Present	Present
GP	Golden Plover								Y				Present	Present
WK	Woodcock		Y					Y						Present
JS	Jack Snipe									Y				Present
SN	Snipe			Y				Y					Present	Present
GE	Green Sandpiper		Y	Y	Y					Y			Present	Present
RK	Redshank			Y				Y						Present
BH	Black-headed Gull			Y				Y					Present	Present

Code	Species	S1	Red	Amber	CR	EN	NT	VU	A1	RBBP	S41E	SZA1EW	Tetrad	10-km/20-km/50-km
CM	Common Gull			Y									Present	Present
GB	Great Black-backed Gull			Y		Y							Present	Present
HG	Herring Gull		Y			Y					Y		Present	Present
LB	Lesser Black-backed Gull			Y									Present	Present
BV	Black-throated Diver	Y		Y				Y	Y	Y				Present
CA	Cormorant						Y						Present	Present
BI	Bittern	Y		Y				Y	Y	Y	Y			Present
H.	Grey Heron							Y					Present	Present
HW	Great White Egret			Y		Y			Y	Y				Present
ET	Little Egret								Y	Y			Present	Present
SH	Sparrowhawk			Y				Y					Present	Present
GI	Goshawk	Y					Y			Y				Present
MR	Marsh Harrier	Y		Y					Y	Y				Present
HH	Hen Harrier	Y	Y			Y			Y	Y	Y			Present
KT	Red Kite	Y							Y					Present
RF	Rough-legged Buzzard									Y				Present
BZ	Buzzard												Present	Present
BO	Barn Owl	Y											Present	Present
LO	Little Owl												Present	Present
LE	Long-eared Owl									Y				Present
TO	Tawny Owl			Y			Y						Present	Present
KF	Kingfisher	Y						Y	Y				Present	Present
LS	Lesser Spotted Woodpecker		Y			Y				Y	Y			Present
GS	Great Spotted Woodpecker												Present	Present
G.	Green Woodpecker						Y						Present	Present
K.	Kestrel			Y				Y					Present	Present
ML	Merlin	Y	Y			Y			Y	Y				Present
PE	Peregrine	Y							Y	Y				Present
J.	Jay												Present	Present
MG	Magpie												Present	Present
JD	Jackdaw												Present	Present
RO	Rook			Y			Y						Present	Present
C.	Carion Crow												Present	Present
WX	Waxwing									Y			Present	Present
CT	Coal Tit												Present	Present
MT	Marsh Tit		Y				Y				Y		Present	Present
WT	Willow Tit		Y			Y				Y	Y		Present	Present
BT	Blue Tit												Present	Present
GT	Great Tit												Present	Present
WL	Woodlark	Y							Y	Y	Y			Present
S.	Skylark		Y								Y		Present	Present
CW	Cetti's Warbler	Y											Present	Present
LT	Long-tailed Tit												Present	Present
CC	Chiffchaff													Present
BC	Blackcap													Present
GC	Goldcrest												Present	Present
WR	Wren			Y									Present	Present

Code	Species	S1	Red	Amber	CR	EN	NT	VU	A1	RBBP	S41E	SZA1EW	Tetrad	10-km/20-km/50-km
NH	Nuthatch												Present	Present
TC	Treecreeper												Present	Present
SG	Starling		Y					Y			Y		Present	Present
ST	Song Thrush			Y							Y		Present	Present
M.	Mistle Thrush		Y				Y						Present	Present
RE	Redwing		Y		Y	Y				Y			Present	Present
B.	Blackbird												Present	Present
FF	Fieldfare		Y	Y		Y				Y			Present	Present
R.	Robin												Present	Present
SC	Stonechat												Present	Present
TS	Tree Sparrow		Y					Y			Y			Present
HS	House Sparrow		Y								Y		Present	Present
D.	Duncock			Y							Y		Present	Present
GL	Grey Wagtail			Y			Y						Present	Present
PW	Pied Wagtail												Present	Present
MP	Meadow Pipit			Y									Present	Present
CH	Chaffinch					Y							Present	Present
BL	Brambling		Y							Y			Present	Present
BF	Bullfinch			Y							Y		Present	Present
GR	Greenfinch		Y			Y							Present	Present
LI	Linnet		Y								Y		Present	Present
FR	Common Redpoll									Y				Present
LR	Lesser Redpoll		Y								Y		Present	Present
FQ	Common/Lesser Redpoll													Present
GO	Goldfinch												Present	Present
SK	Siskin												Present	Present
SB	Snow Bunting		Y		Y	Y				Y				Present
CB	Corn Bunting		Y				Y				Y			Present
Y.	Yellowhammer		Y								Y		Present	Present
RB	Reed Bunting			Y							Y		Present	Present

Appendix 4. Species list 2018–2022

Feature column heading abbreviations: S1 = Schedule 1 UK; A1 = Annex 1; Amber, Red = BoCC5 Amber and Red list; CR, EN, NT, VU = GB IUCN2 Critically Endangered, Endangered, Near Threatened and Vulnerable; S41E = Section 41 England; SZA1EW = Schedule ZA1 England & Wales; S1AS = Schedule 1A Scotland; SA1S = Schedule A1 Scotland; SBL = Scottish Biodiversity List; S7W = Section 7 Wales.

Breeding season

Code	Species	S1	Red	Amber	CR	EN	NT	VU	A1	RBBP	S41E	SZA1EW	1-km	2-km	10-km	>10-km
CG	Canada Goose													Present	Confirmed	Present
GJ	Greylag Goose			Y										Present	Confirmed	Present
MS	Mute Swan													Present	Confirmed	Present
EG	Egyptian Goose														Confirmed	Confirmed
SU	Shelduck			Y		Y									Present	
MN	Mandarin Duck														Present	
GY	Garganey	Y		Y		Y				Y					Present	
SV	Shoveler			Y						Y					Present	
GA	Gadwall			Y											Probable	
WN	Wigeon			Y				Y		Y					Present	Present
MA	Mallard			Y				Y					Present	Present	Confirmed	Present
PT	Pintail			Y	Y					Y					Present	
T.	Teal			Y											Present	
PO	Pochard		Y			Y				Y					Present	Present
TU	Tufted Duck							Y							Confirmed	
CX	Common Scoter	Y	Y		Y					Y	Y				Present	Present
GD	Goosander														Present	
P.	Grey Partridge		Y					Y			Y			Present	Confirmed	Present
PH	Pheasant												Present	Present	Confirmed	Present
Q.	Quail	Y		Y		Y				Y						Present
RL	Red-legged Partridge												Present	Present	Probable	Present
NJ	Nightjar			Y					Y		Y				Present	
SI	Swift		Y			Y							Present	Present	Confirmed	
CK	Cuckoo		Y								Y			Present	Possible	
DV	Rock Dove													Present	Present	
SD	Stock Dove			Y									Present	Probable	Confirmed	Confirmed
WP	Woodpigeon			Y									Present	Probable	Confirmed	Present
TD	Turtle Dove		Y		Y					Y	Y			Present	Possible	Present
CD	Collared Dove						Y						Present	Probable	Confirmed	
WA	Water Rail														Present	
CE	Corncrake	Y	Y						Y	Y	Y				Present	
MH	Moorhen			Y				Y					Present	Present	Confirmed	
CO	Coot							Y						Present	Confirmed	
AN	Crane			Y				Y	Y	Y					Present	
LG	Little Grebe														Possible	
GG	Great Crested Grebe														Confirmed	
TN	Stone-curlew	Y		Y				Y	Y	Y	Y				Present	
OC	Oystercatcher			Y				Y					Present	Present	Confirmed	Present

Code	Species	S1	Red	Amber	CR	EN	NT	VU	A1	RBBP	S41E	SZA1EW	1-km	2-km	10-km	>10-km
AV	Avocet	Y		Y					Y	Y						Present
L.	Lapwing		Y					Y			Y			Present	Confirmed	
GP	Golden Plover								Y					Present	Present	
LP	Little Ringed Plover	Y								Y						Present
WM	Whimbrel	Y	Y			Y				Y						Present
CU	Curlew		Y			Y					Y					Present
BW	Black-tailed Godwit	Y	Y			Y				Y						Present
WK	Woodcock		Y					Y								Present
SN	Snipe			Y				Y						Present	Probable	
CS	Common Sandpiper			Y			Y							Present	Present	
GE	Green Sandpiper	Y		Y	Y					Y				Present	Present	
OD	Wood Sandpiper	Y		Y		Y			Y	Y						Present
GK	Greenshank	Y		Y						Y						Present
KI	Kittiwake		Y		Y											Present
BH	Black-headed Gull			Y				Y					Present	Present	Confirmed	Present
MU	Mediterranean Gull	Y		Y					Y	Y						Present
CM	Common Gull			Y										Present	Present	Present
GB	Great Black-backed Gull			Y		Y							Present	Present	Present	
HG	Herring Gull		Y			Y					Y		Present	Present	Present	
LB	Lesser Black-backed Gull			Y									Present	Present	Present	
CN	Common Tern			Y			Y		Y							Confirmed
AE	Arctic Tern			Y				Y	Y							Present
CA	Cormorant						Y							Present	Present	
BI	Bittern	Y		Y				Y	Y	Y	Y					Present
H.	Grey Heron							Y						Present	Probable	Present
ET	Little Egret								Y	Y						Probable
OP	Osprey	Y		Y			Y		Y	Y		Y			Present	Present
HZ	Honey-buzzard	Y		Y		Y			Y	Y						Probable
SH	Sparrowhawk			Y				Y						Present	Confirmed	Present
GI	Goshawk	Y					Y			Y						Present
MR	Marsh Harrier	Y		Y					Y	Y					Present	Present
HH	Hen Harrier	Y	Y			Y			Y	Y	Y			Present	Present	
KT	Red Kite	Y							Y							Probable
WE	White-tailed Eagle	Y		Y		Y			Y	Y		Y				Present
BZ	Buzzard												Present	Present	Confirmed	Present
BO	Barn Owl	Y												Present	Confirmed	
LO	Little Owl													Present	Probable	
SE	Short-eared Owl			Y		Y			Y	Y						Present
TO	Tawny Owl			Y			Y							Present	Present	
KF	Kingfisher	Y						Y	Y					Present	Probable	
GS	Great Spotted Woodpecker													Present	Confirmed	Present
G.	Green Woodpecker						Y							Possible	Confirmed	Present
K.	Kestrel			Y				Y					Present	Present	Confirmed	
ML	Merlin	Y	Y			Y			Y	Y					Present	Present
HY	Hobby	Y					Y			Y				Present	Present	
PE	Peregrine	Y							Y	Y				Present	Present	
OL	Golden Oriole	Y								Y						Present

Code	Species	S1	Red	Amber	CR	EN	NT	VU	A1	RBBP	S41E	SZA1EW	1-km	2-km	10-km	>10-km
J.	Jay												Present	Probable	Confirmed	Present
MG	Magpie												Present	Probable	Confirmed	Present
JD	Jackdaw												Present	Present	Confirmed	
RO	Rook			Y			Y						Present	Confirmed	Confirmed	Present
C.	Carriion Crow												Present	Present	Confirmed	Present
CT	Coal Tit													Possible	Probable	
MT	Marsh Tit		Y				Y				Y				Probable	
BT	Blue Tit												Present	Confirmed	Confirmed	Confirmed
GT	Great Tit												Present	Confirmed	Confirmed	Present
S.	Skylark		Y								Y		Present	Possible	Confirmed	Present
SM	Sand Martin														Present	
SL	Swallow							Y					Present	Probable	Confirmed	Present
HM	House Martin		Y				Y						Present	Present	Confirmed	Present
CW	Cetti's Warbler	Y												Possible	Possible	Present
LT	Long-tailed Tit												Present	Probable	Confirmed	Present
WW	Willow Warbler			Y									Present	Possible	Confirmed	Present
CC	Chiffchaff												Present	Probable	Confirmed	Present
SW	Sedge Warbler			Y			Y							Present	Confirmed	
RW	Reed Warbler														Confirmed	Present
GH	Grasshopper Warbler		Y								Y				Present	
BC	Blackcap												Present	Possible	Confirmed	Present
GW	Garden Warbler													Present	Probable	Present
LW	Lesser Whitethroat												Present	Present	Confirmed	
WH	Whitethroat			Y									Present	Possible	Confirmed	Present
GC	Goldcrest													Confirmed	Confirmed	Present
WR	Wren			Y									Present	Possible	Confirmed	Present
NH	Nuthatch												Present	Possible	Probable	Present
TC	Treecreeper													Probable	Confirmed	Possible
SG	Starling		Y					Y			Y		Present	Present	Confirmed	Present
ST	Song Thrush			Y							Y		Present	Possible	Confirmed	Present
M.	Mistle Thrush		Y				Y						Present	Present	Confirmed	Present
RE	Redwing	Y		Y	Y					Y				Present	Present	
B.	Blackbird												Present	Probable	Confirmed	Present
FF	Fieldfare	Y	Y		Y					Y				Present	Present	
RZ	Ring Ouzel		Y				Y				Y				Present	
SF	Spotted Flycatcher		Y				Y				Y			Present	Present	Present
R.	Robin												Present	Probable	Confirmed	Confirmed
PF	Pied Flycatcher			Y			Y									Present
BX	Black Redstart	Y		Y				Y		Y						Present
RT	Redstart			Y												Present
SC	Stonechat													Present	Present	
W.	Wheatear			Y		Y									Present	
TS	Tree Sparrow		Y					Y			Y				Present	Present
HS	House Sparrow		Y								Y		Present	Probable	Confirmed	Present
D.	Dunnock			Y							Y		Present	Possible	Confirmed	
YW	Yellow Wagtail		Y				Y				Y				Present	Possible
GL	Grey Wagtail			Y			Y							Present	Confirmed	Present

Code	Species	S1	Red	Amber	CR	EN	NT	VU	A1	RBBP	S41E	SZA1EW	1-km	2-km	10-km	>10-km
PW	Pied Wagtail												Present	Present	Confirmed	Present
MP	Meadow Pipit			Y									Present	Present	Probable	
CH	Chaffinch					Y							Present	Possible	Confirmed	Probable
BF	Bullfinch			Y							Y		Present	Present	Confirmed	
GR	Greenfinch		Y			Y							Present	Present	Confirmed	Present
TW	Twite		Y			Y					Y				Present	
LI	Linnet		Y								Y		Present	Present	Confirmed	Present
LR	Lesser Redpoll		Y								Y			Present	Present	
GO	Goldfinch												Present	Possible	Confirmed	Present
SK	Siskin													Present	Possible	
Y.	Yellowhammer		Y								Y		Present	Possible	Confirmed	Present
RB	Reed Bunting			Y							Y			Present	Confirmed	Possible

Non-breeding season

Code	Species	S1	Red	Amber	CR	EN	NT	VU	A1	RBBP	S41E	SZA1EW	1-km	2-km	10-km	>10-km
BG	Brent Goose			Y							Y				Present	Present
CG	Canada Goose													Present	Present	Present
GJ	Greylag Goose			Y										Present	Present	
PG	Pink-footed Goose			Y						Y				Present	Present	Present
WG	White-fronted Goose		Y			Y					Y					Present
MS	Mute Swan													Present	Present	Present
WS	Whooper Swan		Y	Y		Y			Y	Y				Present	Present	
EG	Egyptian Goose													Present	Present	Present
SU	Shelduck			Y		Y									Present	Present
MN	Mandarin Duck														Present	
GY	Garganey		Y	Y		Y				Y						Present
SV	Shoveler			Y						Y					Present	
GA	Gadwall			Y											Present	
WN	Wigeon			Y				Y		Y					Present	
MA	Mallard			Y				Y						Present	Present	Present
T.	Teal			Y											Present	
PO	Pochard		Y			Y				Y					Present	
TU	Tufted Duck							Y							Present	
SP	Scaup		Y	Y		Y				Y	Y					Present
GN	Goldeneye		Y					Y		Y					Present	Present
GD	Goosander														Present	
P.	Grey Partridge		Y					Y			Y			Present	Present	
PH	Pheasant													Present	Present	Present
RL	Red-legged Partridge													Present	Present	Present
DV	Rock Dove													Present	Present	
SD	Stock Dove			Y										Present	Present	Present
WP	Woodpigeon			Y										Present	Present	Present
CD	Collared Dove						Y							Present	Present	Present
WA	Water Rail														Present	
MH	Moorhen			Y				Y						Present	Present	Present
CO	Coot							Y							Present	

Code	Species	S1	Red	Amber	CR	EN	NT	VU	A1	RBBP	S41E	SZA1EW	1-km	2-km	10-km	>10-km
AN	Crane			Y				Y	Y	Y						Present
LG	Little Grebe														Present	
GG	Great Crested Grebe														Present	
OC	Oystercatcher			Y				Y					Present	Present	Present	
L.	Lapwing		Y					Y			Y		Present	Present		
GP	Golden Plover								Y				Present	Present	Present	
WK	Woodcock		Y					Y					Present	Present		
SN	Snipe			Y				Y					Present	Present	Present	
CS	Common Sandpiper			Y			Y						Present	Present		
GE	Green Sandpiper	Y		Y	Y					Y			Present	Present	Present	
GK	Greenshank	Y		Y						Y						Present
BH	Black-headed Gull			Y				Y					Present	Present	Present	
LU	Little Gull	Y							Y	Y						Present
CM	Common Gull			Y									Present	Present	Present	
GB	Great Black-backed Gull			Y		Y							Present	Present		
HG	Herring Gull	Y				Y					Y		Present	Present		
LB	Lesser Black-backed Gull			Y									Present	Present	Present	
GX	Gannet			Y											Present	
CA	Cormorant						Y						Present	Present	Present	
BI	Bittern	Y		Y				Y	Y	Y	Y				Present	
H.	Grey Heron							Y					Present	Present	Present	
HW	Great White Egret			Y		Y			Y	Y					Present	
ET	Little Egret								Y	Y			Present	Present	Present	
SH	Sparrowhawk			Y				Y					Present	Present		
GI	Goshawk	Y					Y			Y					Present	
KT	Red Kite	Y							Y				Present	Present		
RF	Rough-legged Buzzard									Y					Present	Present
BZ	Buzzard												Present	Present	Present	
BO	Barn Owl	Y											Present	Present		
LO	Little Owl												Present	Present		
LE	Long-eared Owl									Y					Present	
SE	Short-eared Owl			Y		Y			Y	Y					Present	
TO	Tawny Owl			Y			Y						Present	Present	Present	
KF	Kingfisher	Y						Y	Y						Present	
LS	Lesser Spotted Woodpecker		Y			Y				Y	Y				Present	
GS	Great Spotted Woodpecker												Present	Present	Present	
G.	Green Woodpecker						Y						Present	Present	Present	
K.	Kestrel			Y				Y					Present	Present	Present	
PE	Peregrine	Y							Y	Y			Present	Present		
RI	Ring-necked Parakeet														Present	
SR	Great Grey Shrike									Y					Present	
J.	Jay												Present	Present	Present	
MG	Magpie												Present	Present	Present	
JD	Jackdaw												Present	Present	Present	
RO	Rook			Y			Y						Present	Present	Present	
C.	Carrion Crow												Present	Present		
HC	Hooded Crow															Present

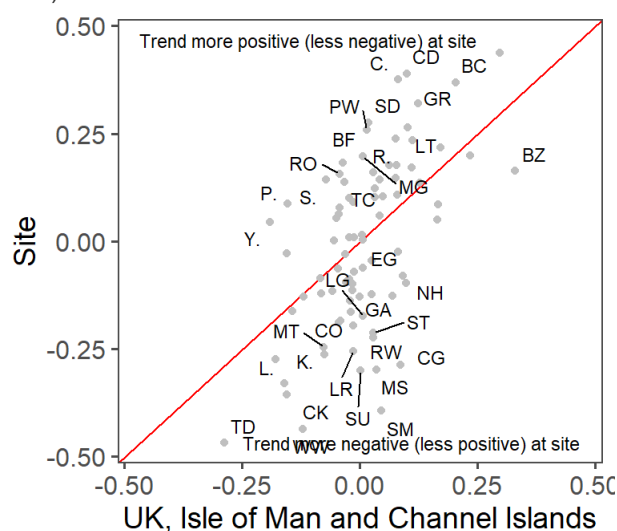
Code	Species	S1	Red	Amber	CR	EN	NT	VU	A1	RBBP	S41E	SZA1EW	1-km	2-km	10-km	>10-km
CT	Coal Tit													Present	Present	Present
MT	Marsh Tit		Y				Y				Y				Present	
BT	Blue Tit												Present	Present	Present	
GT	Great Tit												Present	Present	Present	
S.	Skylark		Y								Y		Present	Present	Present	
SL	Swallow							Y					Present	Present	Present	
HM	House Martin		Y				Y						Present	Present	Present	
CW	Cetti's Warbler	Y													Present	
LT	Long-tailed Tit												Present	Present	Present	
YB	Yellow-browed Warbler			Y		Y										Present
CC	Chiffchaff												Present	Present	Present	
BC	Blackcap												Present	Present		
LW	Lesser Whitethroat												Present	Present		
GC	Goldcrest												Present	Present	Present	
WR	Wren			Y									Present	Present	Present	
NH	Nuthatch												Present	Present	Present	
TC	Treecreeper												Present	Present		
SG	Starling		Y					Y			Y		Present	Present	Present	
ST	Song Thrush			Y							Y		Present	Present	Present	
M.	Mistle Thrush		Y				Y						Present	Present	Present	
RE	Redwing	Y		Y	Y					Y			Present	Present	Present	
B.	Blackbird												Present	Present	Present	
FF	Fieldfare	Y	Y		Y					Y			Present	Present	Present	
RZ	Ring Ouzel		Y				Y				Y					Present
R.	Robin												Present	Present	Present	
SC	Stonechat												Present	Present	Present	
W.	Wheatear			Y		Y										Present
TS	Tree Sparrow		Y					Y			Y				Present	Present
HS	House Sparrow		Y								Y		Present	Present	Present	
D.	Dunnock			Y							Y		Present	Present		
GL	Grey Wagtail			Y			Y						Present	Present		
PW	Pied Wagtail												Present	Present	Present	
MP	Meadow Pipit			Y									Present	Present		
CH	Chaffinch					Y							Present	Present	Present	
BL	Brambling	Y								Y			Present	Present		
HF	Hawfinch		Y			Y				Y	Y		Present	Present	Present	
BF	Bullfinch			Y							Y		Present	Present		
GR	Greenfinch		Y			Y							Present	Present	Present	
TW	Twite		Y			Y					Y				Present	
LI	Linnet		Y								Y		Present	Present	Present	
FR	Common Redpoll									Y					Present	
LR	Lesser Redpoll		Y								Y		Present	Present		
CR	Common Crossbill	Y														Present
GO	Goldfinch												Present	Present	Present	
SK	Siskin														Present	Present
CB	Corn Bunting		Y				Y				Y				Present	
Y.	Yellowhammer		Y								Y		Present	Present	Present	

Code	Species	S1	Red	Amber	CR	EN	NT	VU	A1	RBBP	S41E	SZA1EW	1-km	2-km	10-km	>10-km
RB	Reed Bunting			Y							Y			Present	Present	

Appendix 5. Abundance change figures

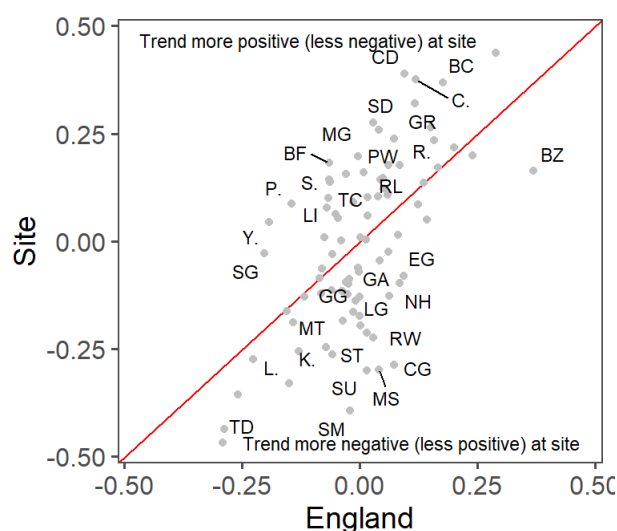
5.1 Country: UK, Isle of Man and Channel Islands

Relative abundance changes for the site and its vicinity compared to the rest of UK, Isle of Man and Channel Islands. Species above the line of equality have more positive/less negative trends at/near the site compared to the country (see Appendix 4 for species codes).



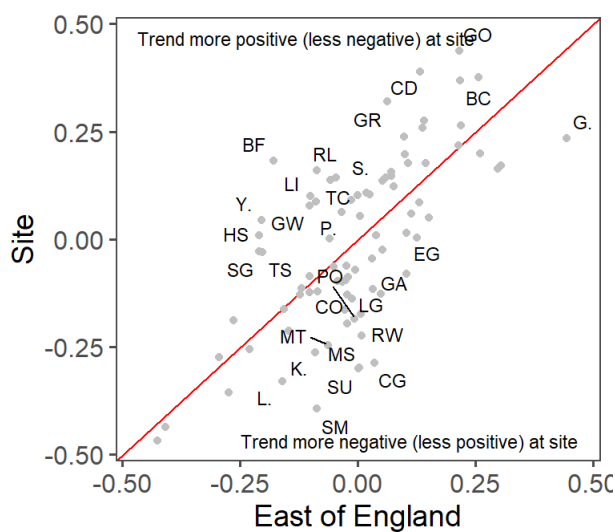
5.2 Country: England

Relative abundance changes for the site and its vicinity compared to the rest of England. Species above the line of equality have more positive/less negative trends at/near the site compared to the country (see Appendix 4 for species codes).



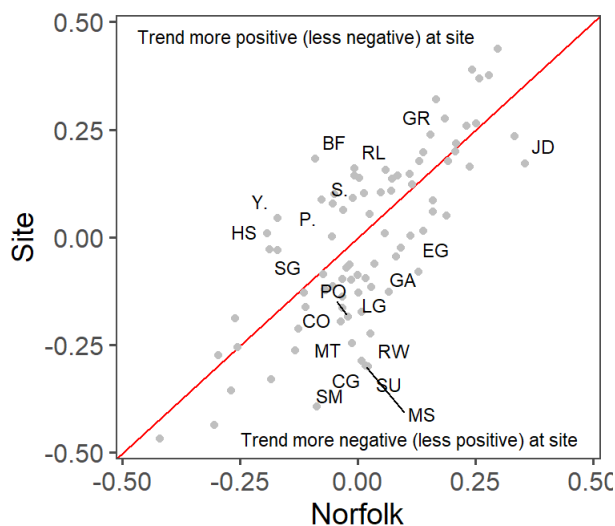
5.3 Region: East of England

Relative abundance changes for the site and its vicinity compared to the rest of East of England. Species above the line of equality have more positive/less negative trends at/near the site compared to the country (see Appendix 4 for species codes).



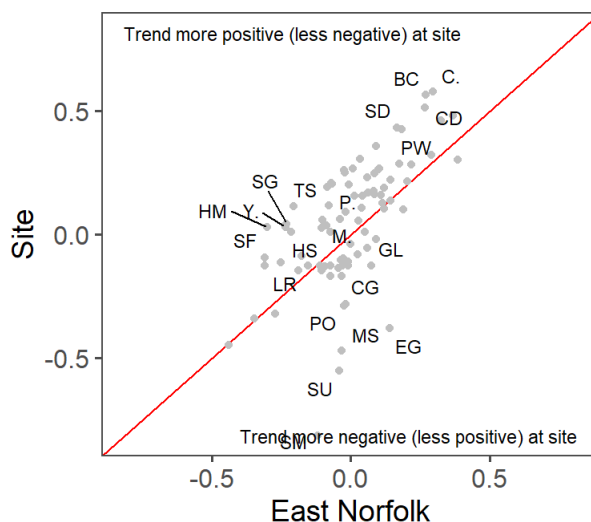
5.4 County: Norfolk

Relative abundance changes for the site and its vicinity compared to the rest of Norfolk. Species above the line of equality have more positive/less negative trends at/near the site compared to the country (see Appendix 4 for species codes).



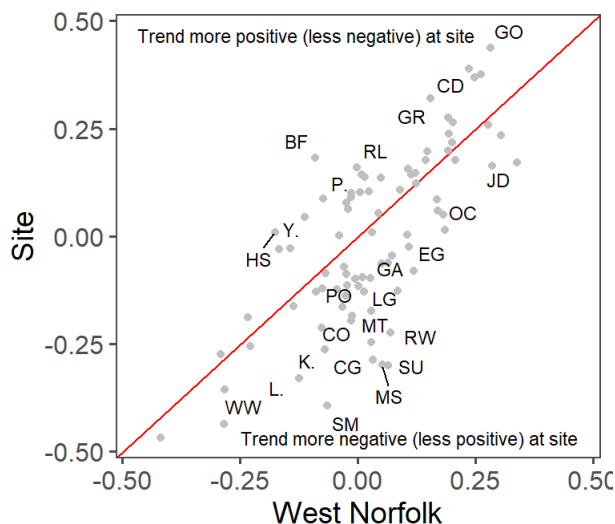
5.5 Vice-county: East Norfolk

Relative abundance changes for the site and its vicinity compared to the rest of East Norfolk. Species above the line of equality have more positive/less negative trends at/near the site compared to the country (see Appendix 4 for species codes).



5.6 Vice-county: West Norfolk

Relative abundance changes for the site and its vicinity compared to the rest of West Norfolk. Species above the line of equality have more positive/less negative trends at/near the site compared to the country (see Appendix 4 for species codes).





Images: Landscape, Simon Gillings; Barn Owl, Liz Cutting

BTO Data Report

BTO Data Reports provide rigorous scientific information to inform desk studies for ecological impact assessment of proposed development sites. Reports collate comprehensive and contemporary bird distribution and abundance data from the BTO's ornithological datasets. As most biological data are collected in grid squares, spatial analyses identify which grid squares can be associated with the site and its vicinity at different spatial scales. Reports lists all species present at or near the site in the breeding season and in winter, highlighting those of statutory or conservation importance (e.g. Schedule 1, Red List). They also assess the potential importance of the site across a local, regional and national context, listing species for which the site and vicinity account for a high proportion of local, regional or national geographical range and population size.

BTO Data Reports provide unique insights into the bird community present in the vicinity of potential development sites, helping to guide the need for detailed field surveys and highlighting potential priorities for delivering habitat mitigation, enhancement and biodiversity net gain.

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