

Great North Road Solar and Biodiversity Park

Environmental Statement

Volume 4 – Technical Appendices

Technical Appendix A8.5 – Wintering Birds Baseline

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A8.5.1 INTRODUCTION

A8.5.1.1 INTRODUCTION

- 1 This Technical Appendix (TA) presents the methods and results of baseline studies of wintering birds in relation to the Great North Road Solar and Biodiversity Park (the Development).
- 2 The scope of the studies has been determined through a combination of a Preliminary Ecological Appraisal (PEA), comprising a desk study and site walkover, and professional judgement with reference to prevailing good practice.
- 3 This TA includes no valuation or assessment of potential effects. These aspects are presented in Chapter 8: Ecology and Biodiversity [EN010162/APP/6.2.8] of the Environmental Statement (ES).
- 4 This TA is supported by the following appendices:
 - Appendix A – Figures;
 - Appendix B – Survey Dates; and
 - Appendix C – Conservation and Legal Status of Bird Species Recorded.

A8.5.1.2 LEGISLATION AND POLICY

A8.5.1.2.1 Legislation

- 5 Annex I of the EU Birds Directive¹ is a list of birds that are the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution. This Directive is transposed into English law through the Conservation of Habitats and Species Regulations 2017² (as amended).
- 6 The Wildlife and Countryside Act 1981³ (as amended) makes it an offence to intentionally kill, injure or take any wild bird, or take or destroy their eggs or nest, or damage a nest, while that nest is in use or being built. Birds listed in Schedule 1 of the Act are afforded a higher level of protection making it an offence to intentionally or recklessly disturb a bird when it is at, on or near an active nest site.
- 7 The Natural Environment and Rural Communities (NERC) Act 2006⁴ includes a list of priority habitats and species in England for public bodies, landowners and funders to use for biodiversity consideration and conservation.

A8.5.1.2.2 Conservation Status

- 8 The Birds of Conservation Concern [BoCC] 5⁵ assessed 245 species with breeding, passage or wintering populations in the UK and assigned each to

¹ Available at: www.legislation.gov.uk/eudr/2009/147 [accessed on 02/06/2025/2024]

² Available at: <https://www.legislation.gov.uk/ukxi/2017/1012/contents> [accessed on 22/05/2025]

³ Available at: <https://www.legislation.gov.uk/ukpga/1981/69> [accessed 16/07/2024]

⁴ Available at: www.legislation.gov.uk/ukpga/2006/16/section/40 [accessed on 02/06/2025]

⁵ Stanbury, A. J., et al. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* 114:723–747

the Green, Amber or Red Lists of conservation concern to indicate an increasing level of conservation concern.

- 9 The Nottinghamshire Local Biodiversity Action Plan (LBAP)⁶ lists species considered to be of conservation concern in the region and includes Species Action Plans (SAPs) detailing specific requirements for their conservation.
- 10 The Nottinghamshire Birds of Conservation Concern (NBoCC)⁷ highlights species that require special monitoring or were priorities for conservation activity. The NBoCC includes a total of 88 species, many of which are national BoCC.
- 11 The legal and conservation status of the bird species recorded are summarised in Appendix C.
- 12 The Nottinghamshire Local Wildlife Site (LWS) Handbook⁸ sets out the criteria used within the county for the selection of LWS' depending on their importance on individual species or species groups.

A8.5.1.2.3 Local Wildlife Site Selection

- 13 The LWS selection handbook⁸ states that *“Regular presence in relation to over wintering (during the period November to March inclusive) should again involve species being recorded at least three times in the previous five years for which data is available, or where it can be evidenced that a site is traditionally used in the longer term (for example in periods of extreme weather). Within any winter period, a species must have additionally been recorded in at least two of the five relevant months”*.
- 14 The survey data from a discrete area were collected over a single season for the majority of the Study Area, therefore regular site usage cannot be demonstrated and the LWS selection criteria are not readily applicable.
- 15 Moreover, in relation to what constitutes a potential LWS, the guidance states *“Some sites, such as arable farmland where the bird interest changes from field to field over time, are not suitable to be LWSs. Consequently, arable farmland has not been included in the selection criteria for habitat-based LWSs for breeding or wintering birds”*.
- 16 A large proportion of the Order Limits comprise arable land and so the LWS selection criteria are not readily applicable to the survey data.

A8.5.1.3 SPECIES NOMENCLATURE

- 17 Bird species are typically listed in taxonomic order following the British List⁹. However, for ease of reference and accessibility, species, where listed, are ordered alphabetically by common/vernacular name in this TA. To further aid

⁶ Nottinghamshire Biodiversity Action Group (2008) Local Biodiversity Action Plan. Available at: www.nottsba.org.uk/lbap/lbap-introduction-and-sections-1-to-6/ [accessed on 05/09/2024]

⁷ Nottinghamshire Birdwatchers (2016). *Nottinghamshire's Birds of Conservation Concern*.

⁸ Crouch, N.C. (2018) Nottinghamshire LWS Handbook – Guidelines for the selection of Local Wildlife Sites in Nottinghamshire. Part 2A – Local Wildlife Sites selection criteria: species. 2nd Edition. Nottinghamshire Biological and Geological Records Centre, Nottingham.

⁹ British Ornithologists' Union (2022). The British List: A Checklist of Birds of Britain (10th edition). Ibis 164: 860–910.

reference, only the common name is used in the main text of this TA. Full common and scientific names are provided in Tables A8.5.2 and A8.5.4.

A8.5.1.4 AIMS AND OBJECTIVES

- 18 The aim of the study was to provide a robust baseline against which the effects of the Development could be assessed. A combination of desk study and field surveys have been undertaken to meet this aim by addressing the following objectives:
- Determine the suitability of habitats in the Study Area to support passage and overwintering birds; and
 - Determine the distribution and abundance of wintering birds in the Study Area.

A8.5.1.5 STUDY AREA

- 19 The Study Area for surveys included all land within the Order Limits and, where accessible, habitats adjacent to the Order Limits (Figure A8.5.1). To assist with survey, analysis and interpretation, the Study Area has been split into 34 different Field Groups (Figure A8.5.1). These Field Groups are not of equal size (see Table A8.5.3) but reflect the practicalities of working with multiple landowners over large areas and the evolving boundary of the Order Limits. The Order Limits have reduced in size since the Field Groups were defined and so some parts of them are now outside the Order Limits.

A8.5.2 METHODS

A8.5.2.1 DESK STUDY

- 20 A desk study was undertaken to assess the nature of the surrounding habitat and obtain pre-existing ecological information relevant to the assessment:
- An assessment of aerial imagery and Ordnance Survey mapping;
 - A request to the Local Record Centre (LRC) for records of non-statutory designated sites and protected and priority habitats and species from within 2 km of the Order Limits;
 - British Trust for Ornithology (BTO) Data Report¹⁰;
 - The Birds of Nottinghamshire¹¹; and
 - The Birds of Nottinghamshire Annual Report for 2021¹² [the most recent available].

A8.5.2.2 SURVEY

- 21 Surveys were undertaken between October 2022 and February 2023, and between November 2023 and March 2024. Details of survey dates for each Field Group are provided in Appendix B.
- 22 Surveys were designed and initiated in 2022 and were in line with the prevailing standards at that time. Due to changes in the Order Limits in 2023,

¹⁰ BTO (2024). GNRS Data Report.

¹¹ Reece, J., Crouch, N., Parkin, D., du Feu, C. and Ellis, B. (2019). The Birds of Nottinghamshire. Liverpool University Press.

¹² Nottinghamshire Birdwatchers (2025) The Birds of Nottinghamshire Annual Report for 2021. Volume 79 (December 2023).

the Study Area was modified accordingly which necessitated the exclusion of earlier survey areas and the inclusion of new survey areas. The surveys in each season cover different core areas, although their buffers may overlap. The survey methods have been consistent in all areas and time periods.

- 23 Surveys were based on good practice guidelines¹³ and have been adapted to the habitats and the large scale of the Study Area. Each Field Group was surveyed by one surveyor per visit. A transect was walked in each section in appropriate weather, during which surveyors recorded species, including behavioural observations. Survey effort focused on the habitats of the open fields searching through binoculars or a scope, if necessary.
- 24 Each transect was surveyed once per month between November and February in both survey seasons. Selected transects have also been surveyed in the key passage/migratory months of October and March to provide additional data and context.

A8.5.2.3 ANALYSIS

- 25 Data analysis focused on bird Species of Conservation Concern (SoCC), which comprise species included in any of the following:
 - Annex I of the EU Birds Directive;
 - Schedule 1 of the Wildlife and Countryside Act 1981;
 - Section 41 of the NERC Act 2006;
 - Red and Amber lists of the Birds of Conservation Concern⁵;
 - Nottinghamshire LBAP; and
 - Nottinghamshire Birds of Conservation Concern.
- 26 The registrations of observations from the monthly visits were collated and peak counts (i.e., the peak number of individuals identified within an area during one visit) for SoCC in each month calculated.
- 27 Peak counts for each species from all Field Groups were combined to show the peak count for the Study Area in each survey month. From this, a mean peak count across the survey period was calculated for each species. Only selected transects were conducted during the October and March passage months, and so counts from these months were excluded from the further analyses (e.g., of mean peak) to avoid skewing the data. However, notable observations during these months have been considered as part of the further assessment.
- 28 For each Field Group, the species richness (i.e., number of species) and abundance (i.e., the total number of individual birds) was calculated. Abundance was divided by the area of the Field Group to calculate the density of birds per hectare.
- 29 As a result of the wintering bird survey being completed in two seasons, there is the potential for birds to be 'double counted' in areas where their buffers overlap. In order to minimise potential double counting, only birds identified within the fields in which transects were located were included in the analysis.

¹³ Bird Survey & Assessment Steering Group (2022). Bird Survey Guidelines for Assessing Ecological Impacts, v.0.1.6. [May 2022]

A8.5.2.4 LIMITATIONS

- 30 It is generally preferable to carry out surveys of populations over a single complete season to reduce the effects of inter-annual changes in environmental conditions and populations. However, the Development design and the ecological surveys have progressed in an iterative manner with each informing the other. This ecologically sensitive design process has been important in helping to avoid and reduce potential adverse ecological effects and this would not have been possible without surveys over multiple seasons.
- 31 Surveying in a single season is not without limitations, however, such as being heavily influenced by anomalous conditions, particularly extreme weather and land use, which can greatly influence the observed distribution and populations of birds. Surveying over multiple seasons may increase the likelihood of observing scarce, secretive and irregularly or infrequently occurring species.
- 32 The surveys have provided a baseline that is representative of local conditions and sufficient to inform an assessment of potential effects.
- 33 The Order Limits have reduced in size since the Field Groups were defined and so some parts of them are now outside the Order Limits. Consequently, the diversity of the wintering bird assemblage may have been overestimated, but this will lead only to a more precautionary assessment and provides a better understanding of the wider context of the Development.

A8.5.3 RESULTS

A8.5.3.1 DESK STUDY

- 34 NBGRC returned 12,341 recent (2015 onwards) records of 229 species within 2 km of the Order Limits, including 2,001 records of 52 Schedule-1 species, alongside a range of other SoCC species. Of these, 17 records occurred within the Order Limits comprising 14 species: Buzzard, Chiffchaff, Fieldfare, Great Spotted Woodpecker, Hobby, Jay, Kestrel, Lesser Spotted Woodpecker, Marsh Tit, Oystercatcher, Peregrine Falcon, Tawny Owl, and Willow Warbler.
- 35 The contemporary BTO data (2020–2024) returned records of 121 species within the vicinity of the Order Limits during the breeding period at a range of spatial resolutions. 43 species were recorded within the 1 km squares covered by the Order Limits, 25 of which were considered to be SoCC (Table A8.5.1), including two Schedule-1 species (Fieldfare and Redwing) and six Red-List species (Fieldfare, House Sparrow, Linnet, Pochard, Starling and Yellowhammer).

Table A8.5.1: BTO Current Non-Breeding SoCC within 1 km Tetrads

Species	Scientific Name	Legal & Conservation Status
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Amber, LBAP
Common Gull	<i>Larus canus</i>	Amber
Coot	<i>Fulica atra</i>	LBAP

Species	Scientific Name	Legal & Conservation Status
Cormorant	<i>Phalacrocorax carbo</i>	LBAP
Fieldfare	<i>Turdus pilaris</i>	Sch 1, Red
Gadwall	<i>Mareca strepera</i>	Amber
Grey Heron	<i>Ardea cinerea</i>	LBAP
Greylag Goose	<i>Anser anser</i>	Amber
House Sparrow	<i>Passer domesticus</i>	Red, NERC, LBAP
Kestrel	<i>Falco tinnunculus</i>	Amber, LBAP,
Lesser Black-backed Gull	<i>Larus fuscus</i>	Amber, LBAP
Linnet	<i>Carduelis cannabina</i>	Red, NERC, LBAP
Mallard	<i>Anas platyrhynchos</i>	Amber, LBAP
Moorhen	<i>Gallinula chloropus</i>	Amber
Mute Swan	<i>Cygnus olor</i>	LBAP
Pochard	<i>Aythya farina</i>	Red, LBAP
Redwing	<i>Turdus iliacus</i>	Sch 1, Amber
Rook	<i>Corvus frugilegus</i>	Amber
Shelduck	<i>Tadorna tadorna</i>	Amber, LBAP
Song Thrush	<i>Turdus philomelos</i>	Amber, NERC, LBAP
Sparrowhawk	<i>Accipiter nisus</i>	Amber
Starling	<i>Sturnus vulgaris</i>	Red, NERC, LBAP
Woodpigeon	<i>Columba palumbus</i>	Amber
Wren	<i>Troglodytes troglodytes</i>	Amber
Yellowhammer	<i>Emberiza citrinella</i>	Red, NERC, LBAP

- ³⁶ The BTO search identified the wintering range of eight species were identified as being notable on a national scale within the three hectads¹⁴ covering the Study Area: Tundra Bean Goose, White-fronted Goose, Ruddy Duck, Long-eared Owl, Ring-necked Parakeet, Great Grey Shrike, Willow Tit, Woodlark. Furthermore, the winter abundances of 14 species were identified as notable: Grey Partridge, Water Rail, Goshawk, Long-eared Owl, Tawny Owl, Kingfisher, Lesser Spotted Woodpecker, Great Grey Shrike, Willow Tit, Woodlark, Brambling, Common Redpoll, Lesser Redpoll and Siskin. The BTO search also identified species as having a notable wintering range and/or abundance at a variety of scales (Table A8.4.2).

¹⁴ A hectad is a 10 x 10 km square

Table A8.4.2: BTO Species of Notable Wintering Range/Abundance

Scale	Wintering Range/Abundance	Species
Regional	Range	Taiga/Tundra Bean Goose, White-fronted Goose, Ruddy Duck, Ringed Plover, Iceland Gull, Goshawk, Long-eared Owl, Ring-necked Parakeet, Great Grey Shrike, Woodlark, Firecrest, Black Redstart, Hawfinch, Common Crossbill
	Abundance	White-fronted Goose, Water Rail, Goshawk, Long-eared Owl, Tawny Owl, Kingfisher, Lesser Spotted Woodpecker, Great Grey Shrike, Coal Tit, Marsh Tit, Willow Tit, Woodlark, Firecrest, Goldcrest, Nuthatch, Brambling, Common Redpoll, Lesser Redpoll, Siskin
County	Range	Taiga/Tundra Bean Goose, White-fronted Goose, Ringed Plover, Goshawk, Ring-necked Parakeet, Great Grey Shrike, Black Redstart, Hawfinch
	Abundance	White-fronted Goose, Mandarin Duck, Water Rail, Goshawk, Tawny Owl, Kingfisher, Lesser Spotted Woodpecker, Great Grey Shrike, Raven, Coal Tit, Marsh Tit, Woodlark, Firecrest, Brambling, Common Redpoll, Siskin
Vice-county	Range	Taiga/Tundra Bean Goose, White-fronted Goose, Goshawk, Ring-necked Parakeet, Great Grey Shrike, Black Redstart, Hawfinch
	Abundance	White-fronted Goose, Mandarin Duck, Water Rail, Goshawk, Tawny Owl, Kingfisher, Lesser Spotted Woodpecker, Great Grey Shrike, Raven, Coal Tit, Marsh Tit, Woodlark, Firecrest, Brambling, Common Redpoll, Siskin

- 37 The desk study data have helped guide the scope of the surveys and provide context for interpreting results.

A8.5.3.2 GENERAL SURVEY RESULTS

- 38 A total of 47 SoCC were identified (Table A8.5.2). The species with the highest mean peak counts were Woodpigeon (mean peak = 1783.0), Fieldfare (1382.0), Starling (719.3), Linnet (556.8) and Redwing (532.8).
- 39 Eight Schedule-1 species were recorded: Barn Owl (mean peak = 0.3), Brambling (6.0), Fieldfare (1382.0), Kingfisher¹⁵ (0.0), Merlin (1.0), Peregrine (0.3), Red Kite (2.0) and Redwing (532.8).
- 40 Six Annex-1 species were recorded: Golden Plover (76.3), Kingfisher, Little Egret (0.3), Merlin, Peregrine and Red Kite.
- 41 The number of species identified in each Field Group across the winter periods ranged from 6 to 22 (Table A8.5.3). The Field Groups with the largest number of individual birds were 38 ($n = 3,741$ individuals) and 18 ($n =$

¹⁵ An identification of Kingfisher was made in October, as this falls outside of the period used for mean peak calculation (November – February) the mean peak is calculated as 0.0.

2,203). The Field Groups with the highest density of birds were 5 (52.6 birds ha⁻¹), 18 (39.7 ha⁻¹) and 38 (30.9 ha⁻¹).

- 42 A total of 27 species considered not of conservation concern were recorded, but not in locally significant numbers (Table A8.5.4). Moorhen, Rook, Stock Dove and Wren (amber-listed SoCC) were recorded on at least one survey visit but were excluded from detailed survey and analysis due to their ubiquity and limited scope for adverse effects.

A8.5.3.3 SPECIES SPECIFIC RESULTS

From the 47 SoCC identified within the Study Area, the species can be categorised into seven 'species groups' that allows for further assessment of the general importance of the Study Area for each group. The species are categorised on the basis of their behaviours and the habitats with which they are associated during the winter and passage periods.

A8.5.3.3.1 Waterbirds

- 43 Of the SoCC recorded in the Study Area, 11 were categorised as waterbirds comprising ducks, geese and wading birds: Coot, Cormorant, Golden Plover, Greylag Goose, Grey Heron, Little Egret, Mallard, Mute Swan, Pink-footed Goose, Teal, Lapwing. These species are generally associated with watercourses, waterbodies or wetlands but may also utilise open fields.
- 44 The River Trent and the adjacent flooded gravel pits and lagoons provide a locally important resource for many wintering and passage water birds, but the Order Limits contain no significant waterbodies that attracted large, frequent or notable aggregations.
- 45 Large roosting/foraging flocks of Golden Plover and Lapwing were noted infrequently within open field habitats with mean peaks, respectively, of 76.3 and 161.3 individuals.
- 46 Two flocks of Golden Plover, with a total of 291 individuals, were identified roosting in Field Group 6 during the March visit. The species was not identified in this Field Group during any other visit. Golden Plover is a common passage migrant and winter visitor in the county and the flock size within the Study Area is similar in size to some of those identified in the Nottinghamshire Annual Report for 2021. This flocking of individuals may have been in preparation for their departure back to their breeding grounds.
- 47 A flock of 223 roosting/foraging Lapwing was identified in Field Group 15 during the December visit. The species was not identified in this Field Group during any other visit. Lapwing is a common, although nationally declining, resident, passage migrant and winter visitor listed as a local species of conservation concern. In Nottinghamshire, it is 'the commonest breeding wader in the county'¹¹ and is a familiar species in open farmland habitats like those within the Order Limits. Reports from The Nottinghamshire Annual Report 2021 identified numerous flocks of up to 1000+ individuals during the winter and passage period across the county and therefore the infrequent flocks identified within the Study Area are similar to what would be expected of the habitats. Moreover, the BTO data report noted the abundance of this species as increasing within the local area in comparison to the rest of the UK, England and East Midlands.

A8.5.3.3.2 Raptors and Owls

- 48 Of the SoCC recorded in the Study Area, six were categorised as raptors and owls: Barn Owl, Kestrel, Merlin, Peregrine, Red Kite and Sparrowhawk.
- 49 Raptors and Owls were identified relatively infrequently and in low numbers across the Study Area, with the majority of the less common species (Goshawk, Barn Owl, Peregrine) recorded only once.
- 50 Red Kite was identified between November and January, with a peak count of four individuals recorded in November. The species is currently listed as an uncommon resident and visitor to Nottinghamshire and of local conservation concern. However, records across the county have been increasing since the late 1990s associated with successful reintroduction schemes¹¹. The eastern reaches of the county in which the Development is proposed continues to be a stronghold for the species and the survey results, therefore, are to be expected.
- 51 Merlin was identified in November, December and February, with a peak count of two individuals in February. This Red-Listed species is an uncommon resident, winter visitor and passage migrant in Nottinghamshire with the majority of records being located to the north of the county. However, in the 2021 Annual Report there are several reports from sites along the River Trent, which corresponds to the findings of this survey, with Merlin identified in Field Groups 11 and 15 that are close to the River Trent.

A8.5.3.3.3 Gulls

- 52 Of the SoCC recorded in the Study Area, five were gulls; Black-headed Gull, Common Gull, Great Black-backed Gull, Herring Gull and Lesser Black-backed Gull.
- 53 Black-headed Gull was identified fairly consistently with a mean peak of 328.3 individuals. A flock 405 individuals was identified resting within a flock of mixed gulls in Field Group 11 in January. The species is the commonest and most familiar of the gulls in Nottinghamshire but is still listed as a Local Biodiversity Action Plan species. Counts of 250 or more individuals have been recorded from 20 different locations across the county¹² suggesting that the survey results are typical of the region.
- 54 Similarly, Common Gull was recorded consistently with a mean peak of 78.0 individuals. A flock of 176 individuals was identified resting within a mixed gull flock in Field Group 16 in December. Data from the Annual Report¹² only recorded three counts of 50 or more birds, all of which came from the Lound gravel pits (in the north of the county) in which a peak count of 4000 individuals was recorded. Therefore, in relation to the recordings in the rest of the county this is considered a large flock. However, a flock of this size was only recorded once and the size is not remarkable for the species.

A8.5.3.3.4 Migrant Passerines

- 55 Of the SoCC recorded in the Study Area, three were categorised as migrant passerines: Fieldfare, Redwing and Brambling. These species were generally identified foraging across a range of berry-laden plants within hedgerows, woodland and urban greenspaces then moving into open fields.

- 56 Fieldfare was identified fairly consistently in the main winter months (November – February), with a mean peak of 1382.0 individuals. A peak count of 620 individuals split between several mixed feeding flocks was identified in Field Group 3 in January. The species is a common and widespread winter visitor to Nottinghamshire, with flocks of up to 1,000 birds reported most winters with higher numbers recorded occasionally¹¹. The survey results are consistent with these observations.
- 57 Similarly, Redwing was consistently recorded with a mean peak of 532.8 individuals. A peak count of 170 individuals split into several smaller flocks was identified in Field Group 34 in January. Redwing is a familiar bird in the county and is widely distributed across Nottinghamshire. In the 2021 Annual report¹², there were 10 three-figure counts of individuals seen across the county with the highest being of 450. The survey results are consistent with these observations.
- 58 Brambling was recorded infrequently and in low numbers with a mean peak of 6.0 individuals. The majority of observations were of individuals or pairs of birds within mixed feeding flocks, although a peak count of 10 was identified foraging in Field Group 16 in January. No flocks of this size were identified on any other survey month. Brambling is an uncommon winter visitor and passage migrant and numbers of this species vary greatly between years. In the 2021 report¹², records were received from around 50 sites with several double-digit flocks noted. The survey results are consistent with these observations.
- 59 The BTO data report suggest that the winter abundance of Brambling within the area that the Order Limits occupies is considered to be notable in relation to the rest of the country. The report states that the abundance of Brambling within the area represents up to 16.4% of the total population of England.

A8.5.3.3.5 Open Farmland Birds

- 60 Of the SoCC recorded in the Study Area, eight were categorised as open farmland birds: Grey Partridge, Grey Wagtail, Meadow Pipit, Skylark, Snipe, Woodcock, Reed Bunting and Starling. Although some of these species may not always be associated with open farmland, generally these are the habitats they favour during the winter.
- 61 Grey Partridge was recorded frequently in small numbers with a mean peak of 16 individuals. A peak count of 15 birds was identified within Field Group 13 in December. Grey Partridge is a fairly common resident in the Nottinghamshire area and has undergone large national and local declines in the last few decades as a result changes in agricultural land use. For this reason, the species is listed as a local conservation concern. In the 2021 report, there were several double-digit groups of birds across the county with a peak of 48¹². Therefore, the number of individuals recorded is typical of the area.
- 62 The BTO data report identified the winter abundance of Grey Partridge within the area that the Order Limits occupy to be notable in relation to the rest of the country. The report states that the abundance of Grey Partridge within the area represents up to 16.4% of the total population of England.

- 63 Skylark was identified in good numbers fairly frequently with a mean peak of 341.5 individuals. A peak count of 170 Skylark made up of several feeding flocks was identified in Field Group 13 in December and similar numbers were identified in January but were significantly lower in other months. Similar to Grey Partridge, Skylark is a common resident to Nottinghamshire but has undergone large national and local declines due to changes in agricultural practices. Records from the Annual report were widespread but only a few three-figure counts were made with a peak count of 250 individuals¹². The observations of Skylark are fairly characteristic of the area and include some potentially locally important flocks.

A8.5.3.3.6 Hedgerow and Tree Birds

- 64 Of the SoCC recorded in the Study Area, 13 were categorised as hedgerow and tree birds: Bullfinch, Dunnock, Greenfinch, House Sparrow, Linnet, Marsh Tit, Mistle Thrush, Raven, Song Thrush, Tree Sparrow, Woodpigeon, Yellowhammer and Lesser Redpoll. These species generally utilise tree and scrub habitats in hedgerows, woodlands, and urban areas.
- 65 Linnet was consistently recorded in good numbers with a mean peak of 556.8 individuals. A peak count of 400, split between several single species/mixed feeding flocks, was identified in Field Group 9 in January. Numbers of that scale were not observed in any other survey months. Linnet is a common resident and passage migrant in Nottinghamshire, and within the Annual report the species was well documented across the county with multiple three-digit recordings¹². Therefore, the survey results are typical of the local area, although Linnet remains a species of local conservation concern.
- 66 Tree Sparrow was recorded in low numbers and inconsistently with no observations of the species during October, February and March, and a mean peak of 8.8 individuals from the other months. There was only a single double-digit peak count of the species consisting of 25 birds identified across Field Group 21 in November. This previously common resident species has continued to decline over recent years, with only two double-digit counts recorded across Nottinghamshire in the Annual report¹², and for this reason it is listed as a species of local concern.

A8.5.3.3.7 Other Birds

- 67 During the winter and passage period, Kingfisher forage up and down watercourses and is a species that is particularly vulnerable during the winter period. The Order Limits contain several watercourses and waterbodies that provide suitable foraging habitat for the species.
- 68 Single counts of Kingfisher were recorded on two occasions, both within Moorhouse Beck in the north of the Order Limits (Field Group 2/3). Kingfisher is a fairly common resident in Nottinghamshire but is listed as a local conservation concern. The species was widely reported in the Annual report with records coming from 64 of the survey sites, usually records of single birds¹². Therefore, the records within the Order Limits are not uncharacteristic of the area.
- 69 The BTO data report identified the winter abundance of Kingfisher within the area that the Order Limits exist to be notable in relation to the rest of the

country. The report states that the abundance of Kingfisher within the area represents up to 16.4% of the total population of England.

Table A8.5.2: Peak Counts of SoCC

Common name	Scientific name	BTO Code	Peak Count						Mean Peak Count (Nov– Feb)
			Oct	Nov	Dec	Jan	Feb	Mar	
Barn Owl	<i>Tyto alba</i>	BO	0	1	0	0	0	0	0.3
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	BH	22	37	451	704	121	38	328.3
Brambling	<i>Fringilla montifringilla</i>	BL	4	17	0	6	1	0	6.0
Bullfinch	<i>Pyrrhula pyrrhula</i>	BF	11	5	10	11	0	0	6.5
Common Gull	<i>Larus canus</i>	CM	0	37	188	80	7	0	78.0
Coot	<i>Fulica atra</i>	CO	0	0	0	0	2	0	0.5
Cormorant	<i>Phalacrocorax</i>	CA	0	0	1	5	1	0	1.8
Dunnock	<i>Prunella modularis</i>	D.	16	40	54	46	87	13	56.8
Fieldfare	<i>Turdus pilaris</i>	FF	174	1281	1006	2082	1159	0	1382.0
Golden Plover	<i>Pluvialis apricaria</i>	GP	35	53	88	164	0	291	76.3
Great Black-backed Gull	<i>Larus marinus</i>	GB	0	12	0	0	0	0	3.0
Greenfinch	<i>Carduelis chloris</i>	GR	9	62	5	10	14	9	22.8
Grey Partridge	<i>Perdix perdix</i>	P.	2	13	6	5	1	0	6.3
Grey Wagtail	<i>Motacilla cinerea</i>	GL	21	7	22	24	11	0	16.0
Greylag Goose	<i>Anser anser</i>	GJ	0	4	0	0	0	0	1.0
Grey Heron	<i>Ardea cinerea</i>	H.	0	3	0	0	0	0	0.8
Herring Gull	<i>Larus argentatus</i>	HG	0	2	0	70	0	0	18.0
House Sparrow	<i>Passer domesticus</i>	HS	29	44	53	105	82	5	71.0

Common name	Scientific name	BTO Code	Peak Count						Mean Peak Count (Nov– Feb)
			Oct	Nov	Dec	Jan	Feb	Mar	
Kestrel	<i>Falco tinnunculus</i>	K.	11	26	25	24	20	5	23.8
Kingfisher	<i>Alcedo atthis</i>	KF	1	0	0	0	0	0	0.0
Lapwing	<i>Vanellus vanellus</i>	L.	0	120	273	248	4	0	161.3
Lesser Black-backed Gull	<i>Larus fuscus</i>	LB	54	9	26	0	0	0	8.8
Linnet	<i>Carduelis cannabina</i>	LI	109	481	546	845	355	28	556.8
Little Egret	<i>Egretta garzetta</i>	ET	0	0	1	0	0	0	0.3
Mallard	<i>Anas platyrhynchos</i>	MA	61	28	15	5	28	9	19.0
Marsh Tit	<i>Poecile palustris</i>	MT	3	1	1	1	0	0	0.8
Meadow Pipit	<i>Anthus pratensis</i>	MP	15	122	43	85	116	4	91.5
Merlin	<i>Falco columbarius</i>	ML	0	1	1	0	2	0	1.0
Mistle Thrush	<i>Turdus viscivorus</i>	M.	3	7	4	5	3	0	4.8
Mute Swan	<i>Cygnus olor</i>	MS	0	2	0	0	0	0	0.5
Peregrine	<i>Falco peregrinus</i>	PE	1	0	0	1	0	0	0.3
Pink-footed Goose	<i>Anser brachyrhynchus</i>	PG	0	1	0	0	0	0	0.3
Raven	<i>Alauda arvensis</i>	RN	5	1	1	0	5	0	1.8
Red Kite	<i>Milvus milvus</i>	KT	0	4	3	1	0	0	2.0
Redpoll (Lesser)	<i>Acanthis flammea</i>	LR	0	14	9	0	0	0	5.8
Redwing	<i>Accipiter nisus</i>	RE	308	402	453	767	509	2	532.8
Reed Bunting	<i>Emberiza schoeniclus</i>	RB	43	31	54	9	40	0	33.5

Common name	Scientific name	BTO Code	Peak Count						Mean Peak Count (Nov– Feb)
			Oct	Nov	Dec	Jan	Feb	Mar	
Skylark	<i>Alauda arvensis</i>	S.	301	212	434	301	419	61	341.5
Snipe	<i>Gallinago gallinago</i>	SN	2	13	6	6	0	0	6.3
Song Thrush	<i>Turdus philomelos</i>	ST	29	28	30	34	34	1	31.5
Sparrowhawk	<i>Accipiter nisus</i>	SH	1	5	2	3	0	0	2.5
Starling	<i>Sturnus vulgaris</i>	SG	170	393	461	1299	724	0	719.3
Teal	<i>Anas crecca</i>	T.	0	30	0	0	0	0	7.5
Tree Sparrow	<i>Passer montanus</i>	TS	0	26	5	2	0	0	8.3
Wood Pigeon	<i>Columba palumbus</i>	WP	444	1495	1542	2046	2049	163	1783.0
Woodcock	<i>Scolopax rusticola</i>	WK	0	0	1	1	3	0	1.3
Yellowhammer	<i>Emberiza citrinella</i>	Y.	226	172	172	143	169	10	164.0

Table A8.5.3: Species Richness and Abundance (Nov – Feb)

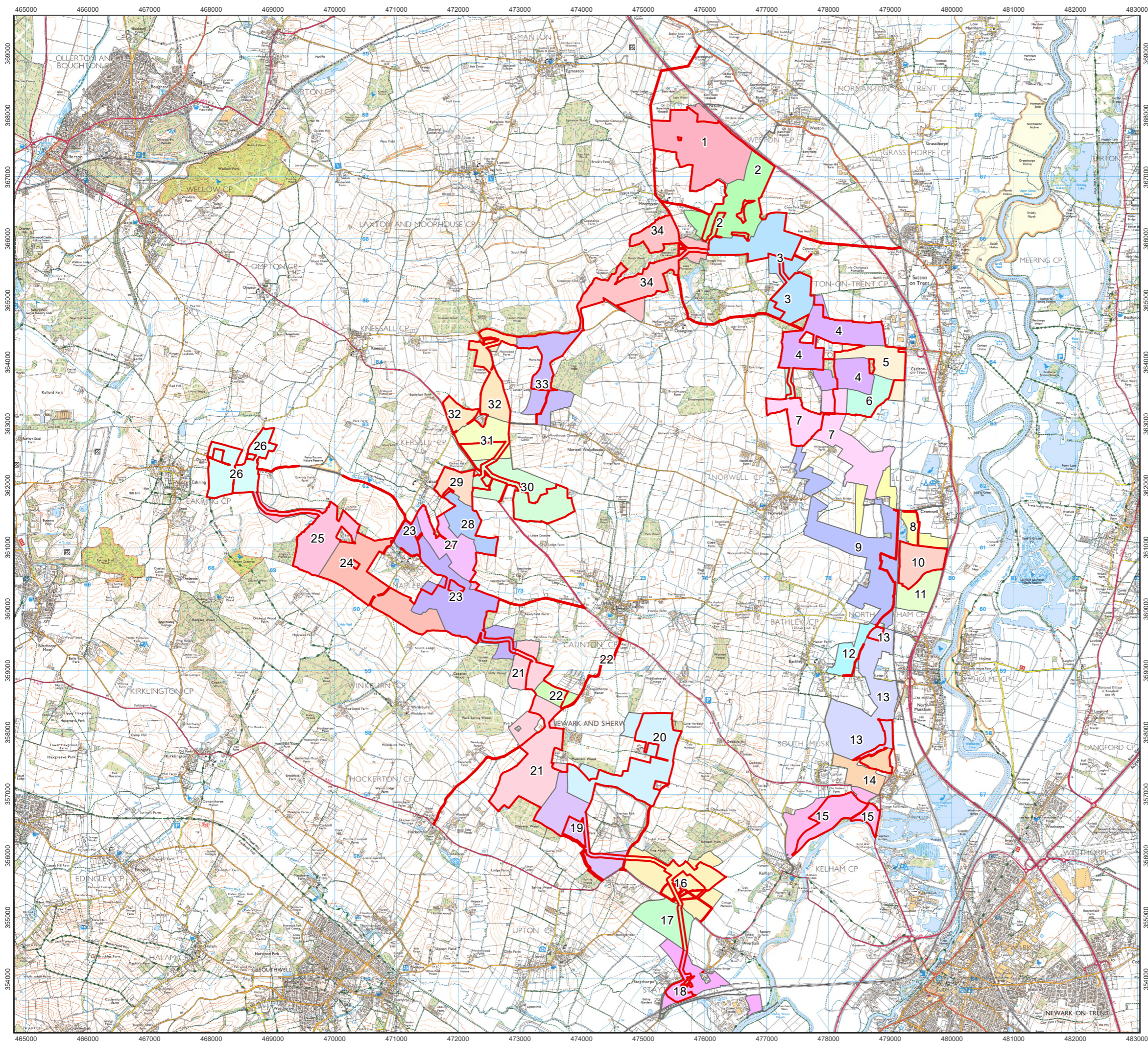
Field Group	Species Richness	Total Abundance	Area of Field Group (ha)	Density (birds ha ⁻¹)
1	19	833	132.6	6
2	13	826	92.8	9
3	13	1657	125.4	13
4	16	596	128.2	5
5	21	625	45.9	14
6	15	495	35.8	14
7	18	1515	121.6	12
8	16	608	44.7	14
9	18	1756	143.1	12
10	11	368	39.3	9
11	8	716	33.0	22
12	20	772	26.8	29
13	19	1120	131.1	9
14	16	255	39.9	6
15	17	388	83.6	5
16	20	1237	104.3	12
17	11	106	46.7	2
18	11	207	61.2	3
19	11	367	80.0	5
20	16	545	129.2	4
21	20	934	160.1	6
22	7	172	17.2	10
23	17	1651	151.1	11
24	18	1028	114.0	9
25	14	141	79.1	2
26	12	483	74.7	6
27	18	517	52.5	10
28	6	24	37.7	1
29	12	282	25.4	11
30	18	569	100.5	6
31	8	327	50.3	7
32	16	1379	70.5	20

Field Group	Species Richness	Total Abundance	Area of Field Group (ha)	Density (birds ha ⁻¹)
33	7	152	71.0	2
34	20	3741	121.2	31

Table A8.5.4: Species not of conservation concern recorded

Common name	Scientific name	BTO Code
Blackbird	<i>Turdus merula</i>	B.
Blue Tit	<i>Cyanistes caeruleus</i>	BT
Buzzard	<i>Buteo buteo</i>	BZ
Canada Goose	<i>Branta canadensis</i>	CG
Carrion Crow	<i>Corvus corone</i>	C.
Chaffinch	<i>Fringilla coelebs</i>	CH
Chiffchaff	<i>Phylloscopus collybita</i>	CC
Coal Tit	<i>Parus ater</i>	CT
Collared Dove	<i>Streptopelia decaocto</i>	CD
Feral Pigeon	<i>Columba livia</i>	FP
Goldcrest	<i>Regulus regulus</i>	GC
Goldfinch	<i>Carduelis carduelis</i>	GO
Great Spotted Woodpecker	<i>Dendrocopos major</i>	GS
Great Tit	<i>Parus major</i>	GT
Green Woodpecker	<i>Picus viridis</i>	G.
Jackdaw	<i>Corvus monedula</i>	JD
Jay	<i>Garrulus glandarius</i>	J.
Long-tailed Tit	<i>Aegithalos caudatus</i>	LT
Magpie	<i>Pica pica</i>	MG
Nuthatch	<i>Sitta europaea</i>	NH
Pheasant	<i>Phasianus colchicus</i>	PH
Pied Wagtail	<i>Motacilla alba</i>	PW
Red-legged Partridge	<i>Alectoris rufa</i>	RL
Robin	<i>Erithacus rubecula</i>	R.
Siskin	<i>Spinus spinus</i>	SK
Stonechat	<i>Saxicola rubicola</i>	SC
Treecreeper	<i>Certhia familiaris</i>	TC

APPENDIX A – FIGURES



- Order Limits
- Wintering Bird Survey Areas (1,2,3 etc.)

1:60,000 Scale @ A3

0 0.5 1 2 km



Ref: 026-ES-A8.5.1

Date: 20/06/2025

Wintering Bird Survey Areas
Figure A8.5.1

Great North Road Solar and
Biodiversity Park
Environmental Statement

APPENDIX B – SURVEY DATES

Survey dates	Field Group
w/c 10/10/2022	7, 9, 18, 24
w/c 17/10/2022	3, 4, 13, 21, 23, 26, 30, 32, 34
w/c 24/10/2022	1, 2, 5, 10, 20, 25
w/c 31/10/2022	4, 13
w/c 07/11/2022	3, 5, 7, 9, 10, 20, 26, 30
w/c 14/11/2022	1, 2, 23
w/c 21/11/2022	15, 18, 19, 21, 25, 28, 32, 34
w/c 28/11/2022	24
w/c 05/12/2022	1, 2, 3, 4, 5, 7, 9, 10, 18, 21, 34
w/c 12/12/2022	13, 19, 20, 23, 24, 25, 26, 30, 32
w/c 19/12/2022	15, 28
w/c 09/01/2023	1, 2, 3, 4, 5, 10, 23
w/c 16/01/2023	7, 9, 13, 18, 21, 26, 34
w/c 23/01/2023	20, 24, 32
w/c 30/01/2023	15, 28
w/c 06/02/2023	1, 2, 4, 7, 9, 34
w/c 13/02/2023	3, 5, 10, 13, 18, 19, 20, 23, 24, 32
w/c 20/02/2023	21, 26, 25, 30
w/c 27/02/2023	15, 28
w/c 20/11/2023	6, 8, 11, 12, 14, 16, 17, 22, 27, 29, 31, 33
w/c 11/12/2023	6, 8, 11, 12, 14, 16, 17, 22, 27, 29, 31, 33
w/c 15/01/2024	6, 8, 11, 12, 14, 16, 17, 22, 27, 29, 31, 33
w/c 19/02/2024	6, 8, 11, 12, 14, 16, 17, 22, 27, 29, 31, 33
w/c 25/03/2024	6, 8, 11, 12, 14, 16, 17, 22, 27, 29, 31, 33

APPENDIX C – CONSERVATION AND LEGAL STATUS OF BIRD SPECIES RECORDED

Species	BTO Code	EU Birds Directive Annex I	WCA (1981) Schedule 1	NERC Sect. 41	Red List	Amber List	Nottinghamshire LBAP	Nottinghamshire Birds of Conservation Concern
Barn Owl	BO		✓				✓	✓
Blackbird	B.							
Black-headed Gull	BH					✓	✓	
Blue Tit	BT							
Brambling	BL		✓					
Bullfinch	BF			✓		✓	✓	✓
Buzzard	BZ							
Canada Goose	CG							
Carrion Crow	C.							
Chaffinch	CH							
Chiffchaff	CC							
Coal Tit	CT							
Collared Dove	CD							
Common Gull	CM					✓		
Coot	CO						✓	✓
Cormorant	CA						✓	✓
Dunnock	D.			✓		✓	✓	✓
Feral Pigeon	FP							

Species	BTO Code	EU Birds Directive Annex I	WCA (1981) Schedule 1	NERC Sect. 41	Red List	Amber List	Nottinghamshire LBAP	Nottinghamshire Birds of Conservation Concern
Fieldfare	FF		✓		✓			
Goldcrest	GC							
Golden Plover	GP	✓						✓
Goldfinch	GO							
Great Black-backed Gull	GB					✓		
Great Spotted Woodpecker	GS							
Great Tit	GT							
Green Woodpecker	G.							
Greenfinch	GR				✓			
Grey Heron	H.						✓	✓
Grey Partridge	P.			✓	✓		✓	✓
Grey Wagtail	GL					✓	✓	✓
Greylag Goose	GJ					✓		
Herring Gull	HG			✓	✓			
House Sparrow	HS			✓	✓		✓	✓
Jackdaw	JD							
Jay	J.							
Kestrel	K.					✓	✓	✓
Kingfisher	KF	✓	✓				✓	✓

Species	BTO Code	EU Birds Directive Annex I	WCA (1981) Schedule 1	NERC Sect. 41	Red List	Amber List	Nottinghamshire LBAP	Nottinghamshire Birds of Conservation Concern
Lapwing	L.			✓	✓		✓	✓
Lesser Black-backed Gull	LB					✓	✓	✓
Linnet	LI			✓	✓		✓	✓
Little Egret	ET	✓					✓	✓
Long-tailed Tit	LT							
Magpie	MG							
Mallard	MA					✓	✓	✓
Marsh Tit	MT			✓	✓		✓	✓
Meadow Pipit	MP					✓	✓	✓
Merlin	ML	✓	✓		✓			
Mistle Thrush	M.				✓		✓	✓
Moorhen	MH					✓		
Mute Swan	MS						✓	✓
Nuthatch	NH							
Peregrine	PE	✓	✓				✓	✓
Pheasant	PH							
Pied Wagtail	PW							
Pink-footed Goose	PG					✓		
Raven	RN						✓	✓

Species	BTO Code	EU Birds Directive Annex I	WCA (1981) Schedule 1	NERC Sect. 41	Red List	Amber List	Nottinghamshire LBAP	Nottinghamshire Birds of Conservation Concern
Red Kite	KT	✓	✓				✓	✓
Red-legged Partridge	RL							
Redpoll (Lesser)	LR			✓	✓			
Redwing	RE		✓		✓			
Reed Bunting	RB			✓		✓	✓	✓
Robin	R.							
Rook	RO					✓		
Siskin	SK							
Skylark	S.			✓	✓		✓	✓
Snipe	SN					✓	✓	✓
Song Thrush	ST			✓		✓	✓	✓
Sparrowhawk	SH					✓		
Starling	SG			✓	✓		✓	✓
Stonechat	SC						✓	✓
Teal	T.					✓	✓	✓
Tree Sparrow	TS			✓	✓		✓	✓
Treecreeper	TC							
Woodpigeon	WP					✓		
Woodcock	WK				✓		✓	✓

Species	BTO Code	EU Birds Directive Annex I	WCA (1981) Schedule 1	NERC Sect. 41	Red List	Amber List	Nottinghamshire LBAP	Nottinghamshire Birds of Conservation Concern
Wren	WR					✓		
Yellowhammer	Y.			✓	✓		✓	✓