

# **BREEDING BIRD SURVEY REPORT**

**OLD WOOD ENERGY PARK, WYSALL, NOTTS.**

carried out by



commissioned by

**EXAGEN DEVELOPMENT LIMITED**

**SEPTEMBER 2023**



# BREEDING BIRD SURVEY REPORT

## OLD WOOD ENERGY PARK, WYSALL, NOTTS.

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Project title	Old Wood Energy Park, Wysall, Notts.			
Project number	7800			
Document title	Breeding Bird Survey Report			
Client	Exagen Development Limited			
Author	Matt Jones / Rebecca Sandey			
Status	Checked by	Date	Approved for C&W by	Date
V1.0	Mike Hockey	11/04/2023	Harry Fox	06/07/2023

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## **1 INTRODUCTION**

- 1.1.1 Clarkson and Woods Ltd. was commissioned by Exagen Development Limited to carry out breeding bird surveys (BBSs) of the proposed Old Wood Energy Park, Wysall, Nottinghamshire. A total of four surveys were carried out between April and July 2022, with one survey completed in each month.
- 1.1.2 The purpose of the surveys was to record the bird species present, their abundance and breeding status, and to assess the likelihood that an important breeding bird assemblage was present.
- 1.1.3 This report details the methods and results of the surveys and will be used to inform the Ecological Impact Assessment prepared for the Development, to support a planning application for the construction of a solar array and associated infrastructure, including Battery Energy Storage System (BESS) and substation.
- 1.1.4 Unless the client indicates to the contrary, information on the presence of species will be passed to the county biological records centre to augment their records for the area.

### **1.2 Site Description**

- 1.2.1 Old Wood Energy Park is located on 15 mixed use agricultural fields split across two separate parcels (Old Wood North and Old Wood South), totalling approximately 108 hectares (ha). At the time of survey, 12 of the 15 fields were in arable rotation, with the remaining fields comprising semi-improved grassland.
- 1.2.2 The proposed Old Wood Energy Park is set within open countryside, located to the northwest and west of Wysall in Nottinghamshire. The approximate centre of the two parcels were at Ordnance Survey Grid References SK 59382 27992 (Old Wood North) and SK 59583 27014 (Old Wood South).

### **1.3 Development Proposals**

- 1.3.1 The proposals for the Site consist of the installation of solar panels on metal frames, which are driven into the ground, connected by underground cables to a cabin containing a transformer. Access tracks and welfare facilities will also be provided, as well as security fencing and CCTV. A new substation and BESS will also be installed within the southern parcel.



## 2 METHODOLOGY

### 2.1 Desk Study

- 2.1.1 A desk-based assessment has been completed which collates information from various sources, including bird records from the Nottinghamshire Biological and Geological Record Centre (NBGRC) and Clarkson and Woods' own in-house database, pertaining to the surrounding 2km; details of designated sites in proximity to the Site from MAGIC.gov.uk; and other resources such as aerial maps.

### 2.2 Field Survey

#### **Personnel**

- 2.2.1 The surveys were conducted by Ian Myatt. Ian has been assessed under the Clarkson and Woods QA processes as competent to complete the survey.

#### **Survey Area**

- 2.2.2 The surveys covered the area shown in red in **Figure 1** below. This encapsulated the entirety of the Site's proposed development area. **Figure 2** and **Figure 3** show the Site's habitats.

#### **Survey Timings and Protocol**

- 2.2.3 The survey area was surveyed on four occasions between April and July 2022. Details of the survey timings and weather conditions are given in **Table 1** below.
- 2.2.4 The survey methodology broadly followed British Trust for Ornithology (BTO) Common Birds Census (CBC) guidelines, where the observer systematically walked through the survey area, ensuring that all points were visited to within 50m. The location, abundance and behaviour of all birds and flocks of birds seen were noted on large-scale survey maps. Standard BTO CBC symbology and species codes were used to record species, abundance and behaviour. The surveyor was equipped with binoculars to aid identification.

**Table 1: Breeding Bird Survey Timings and Weather Conditions**

Date	Start Time	Sunrise Time	Cloud (Eighths), Wind (Beaufort Scale: 0-12), Temperature (°C) & Precipitation
20/04/2022	06:30	09:45	Cloud: 2-8/8; Wind: 2/12; Temp: 7-11°C; Precipitation: Dry
17/05/2022	06:00	09:30	Cloud: 8/8; Wind: 0/8; Temp: 12°C; Precipitation: Dry
15/06/2022	05:42	09:20	Cloud: 7-8/8; Wind: 1-2/8; Temp: 10°C; Precipitation: Dry
11/07/2022	05:30	09:10	Cloud: 0/8; Wind: 0/8; Temp: 12-21°C; Precipitation: Dry



## 2.3 Quality Assurance

- 2.3.1 All ecologists employed by Clarkson and Woods are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow the Institute's Code of Professional Conduct<sup>1</sup> when undertaking ecological work. The competence of all field surveyors has been assessed by Clarkson and Woods with respect to the CIEEM Competencies for Species Survey (CSS)<sup>2</sup>.
- 2.3.2 This report has been prepared in accordance with the relevant British Standard: BS42020: 2013 – Biodiversity: Code of Practice for Planning and Development<sup>3</sup>.

## 3 SURVEY LIMITATIONS

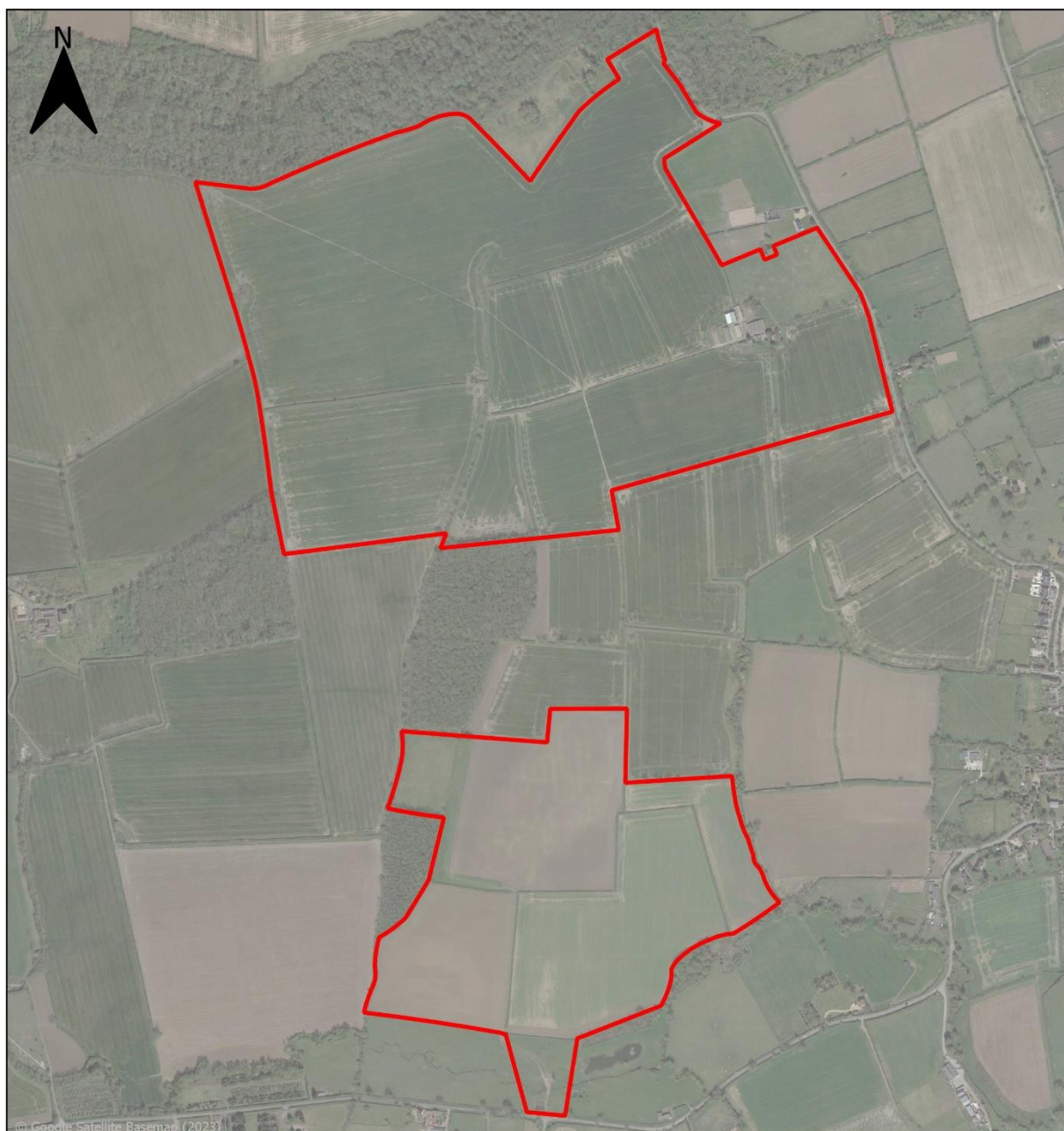
- 3.1.1 The surveys offer only 'snapshots' in time of the survey area. A lack of signs of any particular species does not confirm its absence, merely that there was no indication of its presence during this survey.
- 3.1.2 Nocturnal bird surveys were not undertaken and as such the activity on Site of birds such as owls cannot be determined. In lieu of survey data, a judgement has been made based on the results of the desk study and the presumed value of the habitats on Site to such species.
- 3.1.3 If no action or development of this land takes place within twelve months of the date of this report (i.e., **April 2024**), then the findings of this survey should be reviewed and may need to be updated. After three years the findings will be out of date and the full survey should be repeated.

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<sup>1</sup> CIEEM (2013). *Code of Professional Conduct*. [www.cieem.net/professional-conduct](http://www.cieem.net/professional-conduct).

<sup>2</sup> CIEEM (2013). *Competencies for Species Survey (CSS)*. [www.cieem.net/competencies-for-species-survey-css](http://www.cieem.net/competencies-for-species-survey-css).

<sup>3</sup> The British Standards Institution (2013). *BS42020: 2013 – Biodiversity: Code of Practice for Planning and Development*. BSI Standards Ltd.



Key:

 Site and Survey Boundaries

**CLARKSON  
& WOODS**  
ECOLOGICAL CONSULTANTS



Project  
**Old Wood Energy Park**

Title  
**Breeding Bird Survey Boundaries**

Date  
**06/04/2023**

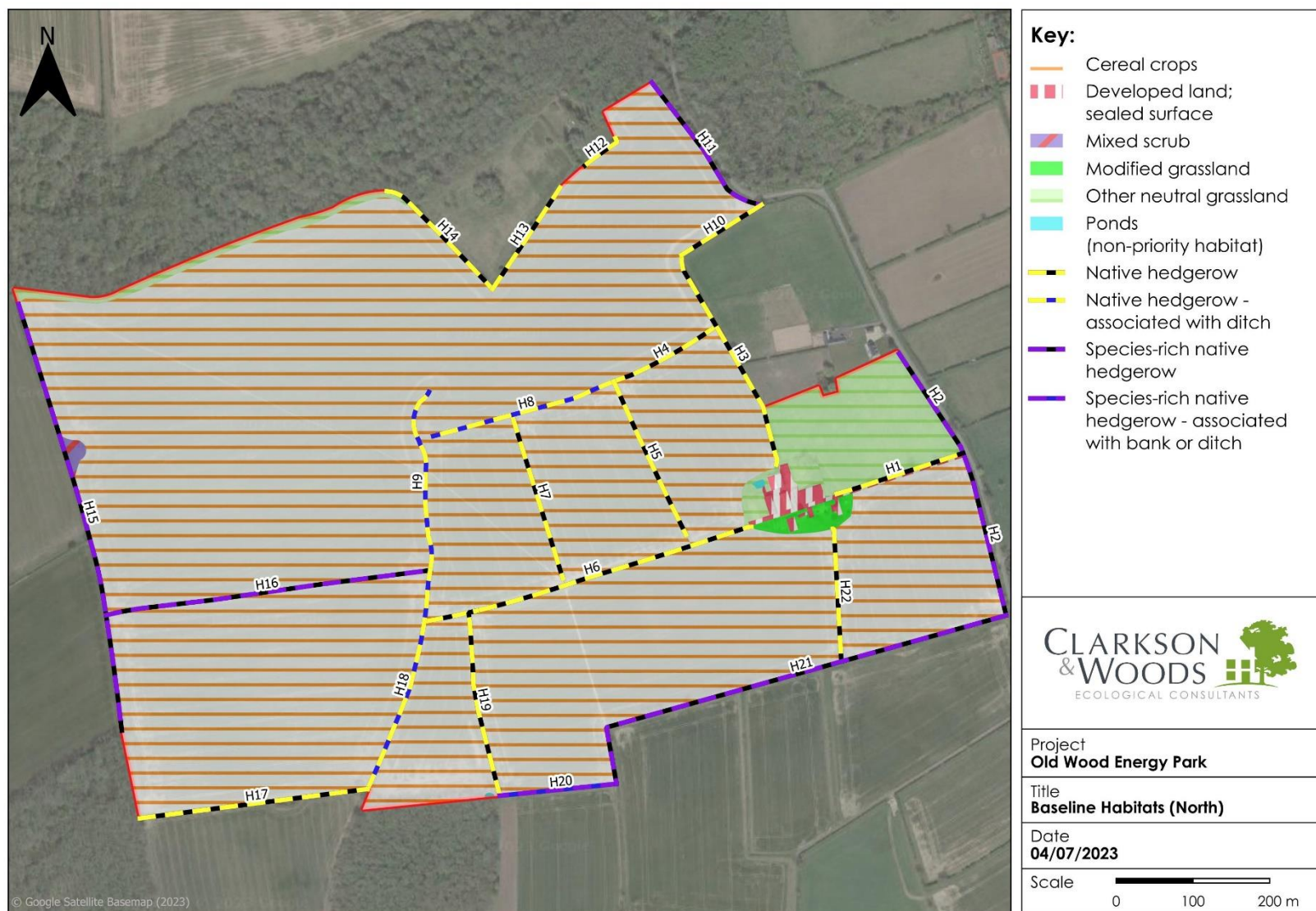
Figure number  
**Figure 1**

Scale 0 50 100 m



**Figure 1: Breeding Bird Survey Boundaries**





**Figure 2: Baseline Habitats – Northern Parcel**

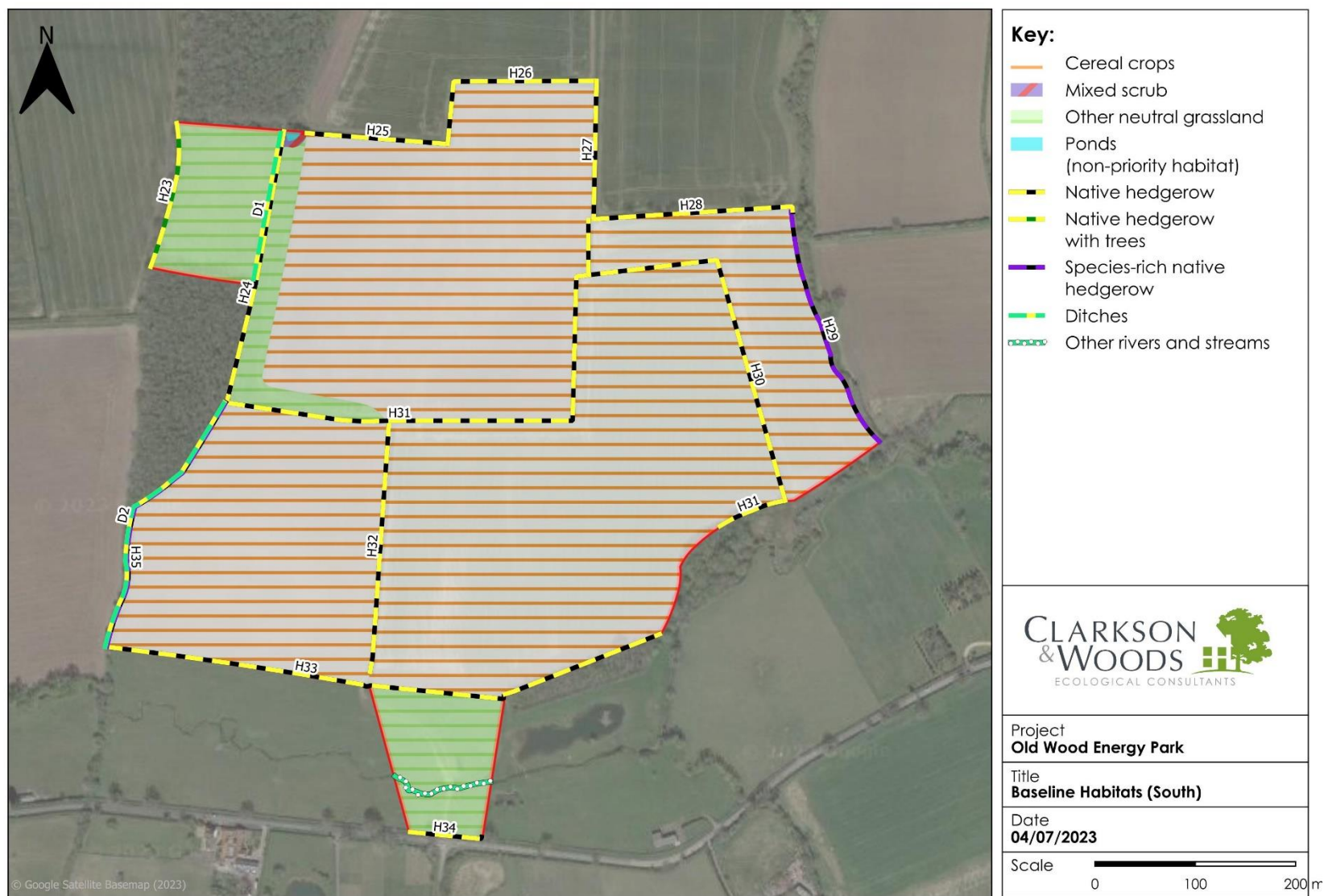


Figure 3: Baseline Habitats – Southern Parcel





## 4 RESULTS

### 4.1 Desk Study

4.1.1 **Table 2** shows records of notable breeding birds obtained from NBGRC in a 2km radius of the Site. **Table 3** explains the abbreviations associated with protected status.

**Table 2: Bird Records from NBGRC within 2km**

Common Name	Scientific Name	Date Of Most Recent Record	Protected Status
Barn Owl	<i>Tyto alba</i>	15/03/2018	BERN2, CITES-A, WCA1.1
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	31/03/2017	BTO Amber
Brambling	<i>Fringilla montifringilla</i>	03/03/2017	WCA1.1
Bullfinch	<i>Pyrrhula pyrrhula</i>	01/04/2018	BAP, S41, BTO Amber
Canada Goose	<i>Branta canadensis</i>	31/08/2016	BDir2.1, Bonn2, GBNNSIP, INNS, WCA9
Corn Bunting	<i>Miliaria calandra</i>	14/11/2010	BAP, S41, BTO Red
Cuckoo	<i>Cuculus canorus</i>	13/06/2014	BAP, S41, BTO Red
Dunnock	<i>Prunella modularis</i>	27/03/2018	BAP, Bern2, S41, BTO Amber
Fieldfare	<i>Turdus pilaris</i>	18/03/2018	WCA1.1, BTO Red
Greenfinch	<i>Carduelis chloris</i>	06/04/2018	BTO Red
Grey Partridge	<i>Perdix perdix</i>	23/09/2016	BAP, BDir2.1, GBNNSIP, S41, BTO Red
Grey Wagtail	<i>Motacilla cinerea</i>	22/12/2016	BTO Amber
Greylag Goose	<i>Anser anser</i>	30/07/2016	BDir2.1, Bonn2, BTO Amber, WCA1.2
Hen Harrier	<i>Circus cyaneus</i>	22/10/2019	WCA1.1, BTO Red
Herring Gull	<i>Larus argentatus</i>	06/05/2015	S41, BTO Red
Hobby	<i>Falco subbuteo</i>	16/05/2018	WCA1.1
House Martin	<i>Delichon urbicum</i>	28/04/2017	Bern2, UKBP
House Sparrow	<i>Passer domesticus</i>	28/04/2017	BAP, S41, BTO Red
Kestrel	<i>Falco tinnunculus</i>	18/03/2018	BTO Amber
Kingfisher	<i>Alcedo atthis</i>	16/06/2009	BDir1, Bern2, BTO Amber, WCA1.1



Common Name	Scientific Name	Date Of Most Recent Record	Protected Status
Lapwing	<i>Vanellus vanellus</i>	15/03/2017	S41, BTO Red
Lesser Black-backed Gull	<i>Larus fuscus</i>	22/01/2016	BTO Amber
Linnet	<i>Linaria cannabina</i>	15/04/2018	BAP, Bern2, S41, BTO Red
Mallard	<i>Anas platyrhynchos</i>	03/03/2018	BTO Amber
Marsh Tit	<i>Poecile palustris</i>	25/11/2018	BAP, Bern2, S41, BTO Red
Meadow Pipit	<i>Anthus pratensis</i>	31/03/2017	BTO Amber
Mistle Thrush	<i>Turdus viscivorus</i>	18/02/2017	BTO Red
Peregrine Falcon	<i>Falco peregrinus</i>	21/10/2015	WCA1.1
Quail	<i>Coturnix coturnix</i>	03/07/2018	WCA1.1, BTO Amber
Red Kite	<i>Milvus milvus</i>	30/08/2018	BDir1, Bonn2, CITES-A, WCA1.1
Redstart	<i>Phoenicurus phoenicurus</i>	17/04/2016	BTO Amber
Redwing	<i>Turdus iliacus</i>	25/03/2018	WCA1.1, BTO Amber
Reed Bunting	<i>Emberiza schoeniclus</i>	01/04/2018	BAP, Bern2, S41, BTO Amber
Ring Ouzel	<i>Turdus torquatus</i>	20/04/2016	S41, BTO Red
Rook	<i>Corvus frugilegus</i>	22/10/2015	BTO Amber
Shelduck	<i>Tadorna tadorna</i>	15/03/2018	BTO Amber
Short-eared Owl	<i>Asio flammeus</i>	26/11/2015	BTO Amber
Skylark	<i>Alauda arvensis</i>	27/05/2018	BAP, BDir2.2, S41, BTO Red
Snipe	<i>Gallinago gallinago</i>	12/12/2015	BTO Amber
Song Thrush	<i>Turdus philomelos</i>	19/03/2018	BAP, BDir2.2, S41, BTO Red
Sparrowhawk	<i>Accipiter nisus</i>	09/03/2018	BTO Amber
Spotted Flycatcher	<i>Muscicapa striata</i>	10/08/2016	BAP, Bern2, Bonn2, S41, BTO Red
Starling	<i>Sturnus vulgaris</i>	05/06/2018	BAP, BDir2.2, S41, BTO Red
Stock Dove	<i>Columba oenas</i>	13/04/2018	BTO Amber



Common Name	Scientific Name	Date Of Most Recent Record	Protected Status
Swift	<i>Apus apus</i>	02/07/2016	BTO Amber
Tawny Owl	<i>Strix aluco</i>	15/04/2018	BTO Amber
Teal	<i>Anas crecca</i>	18/01/2015	BTO Amber
Tree Sparrow	<i>Passer montanus</i>	24/04/2014	BAP, S41, BTO Red
Turtle Dove	<i>Streptopelia turtur</i>	17/05/2010	S41, BTO Red
Wheatear	<i>Oenanthe oenanthe</i>	21/09/2016	BTO Amber
Whinchat	<i>Saxicola rubetra</i>	24/08/2012	BTO Red
Whitethroat	<i>Sylvia communis</i>	28/04/2017	BTO Amber
Wigeon	<i>Mareca penelope</i>	08/12/2013	BTO Amber
Willow Tit	<i>Poecile montanus</i>	20/06/2014	S41, BTO Red
Willow Warbler	<i>Phylloscopus trochilus</i>	28/04/2017	BAP, BTO Amber
Wood Pigeon	<i>Columba palumbus</i>	23/03/2018	BTO Amber
Woodcock	<i>Scolopax rusticola</i>	20/02/2019	BTO Red
Wren	<i>Troglodytes troglodytes</i>	16/04/2018	BAP, BDir1, Bern2
Yellow Wagtail	<i>Motacilla flava</i>	16/05/2016	BAP, Bern2, S41, BTO Red
Yellowhammer	<i>Emberiza citrinella</i>	23/05/2018	BAP, Bern2, S41, BTO Red

**Table 3: Abbreviations Associated with Protected Status in Table 2**

Abbreviation	Protection Status
BAP	UK Biodiversity Action Plan Priority Species
BDir2.1	EU Birds Directive Annex 2.1 - Birds which may potentially be hunted
BDir2.2	EU Birds Directive Annex 2.2 - Birds which may potentially be hunted within certain member states
Bern2	Bern Convention on the Conservation of European Wildlife and Natural Habitats, Appendix 2 - Strictly protected fauna species
Bonn2	Bonn Convention on the Conservation of Migratory Species of Wild Animals, Appendix 2 - Migratory Species to be the subject of agreements



Abbreviation	Protection Status
CITES-A	Convention on International Trade in Endangered Species, Annex A - Species threatened with extinction
GBNNSIP	GB Non-Native Species Information Portal
INNS	Invasive Non-native Species
S41	Natural Environment and Rural Communities Act 2006 (Section 41)
BTO Amber	RSPB/BTO Birds of Conservation Concern - Amber list (not based on IUCN criteria)
BTO Red	RSPB/BTO Birds of Conservation Concern - Red list (not based on IUCN criteria)
WCA1.1	Wildlife & Countryside Act 1981 Schedule 1.1 - Birds which are protected at all times
WCA1.2	Wildlife & Countryside Act 1981 Schedule 1.2 - Birds which are protected during the close season
WCA9	Wildlife & Countryside Act 1981 Schedule 9 - Animals and plants which may not be released/planted or allowed to escape/grow in the wild

## 4.2 Field Surveys

- 4.2.1 The results of the breeding bird surveys are displayed in **Table 5** and **Table 6**. **Table 5** shows the abundance of each species across each survey, along with the peak count during a single survey and likelihood of breeding. **Table 6** shows the total counts of each species within each major habitat type across all surveys.
- 4.2.2 **Table 4** below explains the meaning of the styling used to indicate each species' conservation status and breeding status.

**Table 4: Key for Styling in Tables 5-6**

Style	Meaning
<b>Bold text</b>	Listed under Section 41 of the NERC Act 2006 (Species of Principal Importance - SPI)
Red fill	'Red listed' species according to BTO/RSPB Birds of Conservation Concern 5 (2021)
Orange fill	'Amber listed' species according to BTO/RSPB Birds of Conservation Concern 5 (2021)
Y	Breeding confirmed (nests located or adults seen with food/nest material, or fledglings seen)
Pr	Probably breeding within the Site (considered likely)
Po	Possibly breeding within the Site (uncertain)
N	Not breeding within the Site/ highly unlikely



**Table 5: Abundance of each Bird Species Recorded during the Surveys & Likelihood of Breeding**

Common Name	Scientific Name	Count of Birds (peak count highlighted in blue)				Likelihood of Breeding
		Survey 1	Survey 2	Survey 3	Survey 4	
Blackbird	<i>Turdus merula</i>	14	13	16	17	Y
Blackcap	<i>Sylvia atricapilla</i>	4	6	9	6	Pr
Blue Tit	<i>Cyanistes caeruleus</i>	24	11	32	11	Y
<b>Bullfinch</b>	<b><i>Pyrrhula pyrrhula</i></b>	-	-	1	-	N
Buzzard	<i>Buteo buteo</i>	1	-	1	1	N
Canada Goose	<i>Branta canadensis</i>	6	1	-	-	Po
Carrion Crow	<i>Corvus corone</i>	4	3	7	24	Po
Chaffinch	<i>Fringilla coelebs</i>	3	6	5	8	Pr
Chiffchaff	<i>Phylloscopus collybita</i>	6	7	-	1	Po
Coal Tit	<i>Parus ater</i>	-	-	-	1	Po
Collared Dove	<i>Streptopelia decaocto</i>	-	1	-	-	Po
Cormorant	<i>Phalacrocorax carbo</i>	-	3	-	-	N
<b>Dunnock</b>	<b><i>Prunella modularis</i></b>	6	6	9	11	Pr
Feral Pigeon	<i>Columba livia</i>	-	5	6	18	Pr
Garden Warbler	<i>Sylvia borin</i>	-	2	1	-	Po
Goldfinch	<i>Carduelis carduelis</i>	4	1	8	4	Pr
Great Spotted Woodpecker	<i>Dendrocopos major</i>	4	3	4	3	Po
Great Tit	<i>Parus major</i>	24	14	4	9	Pr
Green Woodpecker	<i>Picus viridis</i>	4	1	3	-	N
Greenfinch	<i>Carduelis chloris</i>	2	-	1	6	Pr
Grey Heron	<i>Ardea cinerea</i>	-	-	-	1	N
<b>Grey Partridge</b>	<b><i>Perdix perdix</i></b>	5	-	-	-	N





Common Name	Scientific Name	Count of Birds (peak count highlighted in blue)				Likelihood of Breeding
		Survey 1	Survey 2	Survey 3	Survey 4	
Greylag Goose	<i>Anser anser</i>	2	2	-	-	N
House Martin	<i>Delichon urbica</i>	-	2	-	-	Po
Jackdaw	<i>Corvus monedula</i>	4	13	17	13	Pr
Jay	<i>Garrulus glandarius</i>	1	1	2	-	N
Kestrel	<i>Falco tinnunculus</i>	1	-	-	2	Po
Lapwing	<i>Vanellus vanellus</i>	3	-	-	-	N
Linnet	<i>Carduelis cannabina</i>	10	6	11	21	Pr
Little Egret	<i>Egretta garzetta</i>	-	-	-	2	N
Long-tailed Tit	<i>Aegithalos caudatus</i>	7	-	-	2	Y
Magpie	<i>Pica pica</i>	1	2	1	4	Po
Mallard	<i>Anas platyrhynchos</i>	2	2	-	-	N
Nuthatch	<i>Sitta europaea</i>	-	-	1	-	Po
Pheasant	<i>Phasianus colchicus</i>	2	4	2	4	Po
Pied Wagtail	<i>Motacilla alba</i>	1	3	3	-	Po
Red Kite	<i>Milvus milvus</i>	1	-	-	-	N
Red-legged Partridge	<i>Alectoris rufa</i>	6	10	8	4	Pr
Reed Bunting	<i>Emberiza schoeniclus</i>	4	-	1	4	Y
Robin	<i>Erithacus rubecula</i>	12	14	11	6	Pr
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	-	2	1	-	Po
Siskin	<i>Carduelis spinus</i>	-	-	-	1	N
Skylark	<i>Alauda arvensis</i>	11	13	8	5	Pr
Song Thrush	<i>Turdus philomelos</i>	3	3	2	3	Po
Sparrowhawk	<i>Accipiter nisus</i>	-	-	-	1	N



Common Name	Scientific Name	Count of Birds (peak count highlighted in blue)				Likelihood of Breeding
		Survey 1	Survey 2	Survey 3	Survey 4	
Spotted Flycatcher	<i>Muscicapa striata</i>	-	-	-	1	N
Stock Dove	<i>Columba oenas</i>	2	-	5	3	Po
Swallow	<i>Hirundo rustica</i>	2	-	2	11	Po
Tawny Owl	<i>Strix aluco</i>	-	-	2	-	N
Tufted Duck	<i>Aythya fuligula</i>	2	2	-	-	N
Whitethroat	<i>Sylvia communis</i>	3	11	9	7	Pr
Woodpigeon	<i>Columba palumbus</i>	26	38	59	51	Pr
Wren	<i>Troglodytes troglodytes</i>	7	12	16	10	Pr
Yellowhammer	<i>Emberiza citrinella</i>	24	11	13	15	Pr
Total Birds Recorded		248	234	281	291	
No. Species Recorded		39	35	35	36	



**Table 6: Relative Use of Each Major Habitat Type**

Species	Number of Individuals within Each Habitat Type over all Surveys (Dominant habitat highlighted in blue. Highlighted green where not recorded using the Site itself)					
	Amenity Grassland/ Farmyard	Arable	Hedgerow/ Scrub	Semi- improved Grassland	Flying Overhead	Off-Site
Blackbird	-	2	23	-	10	22
Blackcap	-	-	3	-	-	21
Blue Tit	1	-	40	1	1	27
<b>Bullfinch</b>	-	-	-	-	1	-
Buzzard	-	-	-	-	1	2
Canada Goose	-	-	-	4	-	2
Carrion Crow	-	4	5	-	27	2
Chaffinch	-	-	11	-	4	5
Chiffchaff	-	-	1	-	-	13
Coal Tit	-	-	1	-	-	-
Collared Dove	-	1	-	-	-	-
Cormorant	-	-	-	-	-	3
<b>Dunnock</b>	-	1	24	2	-	5
Feral Pigeon	-	15	6	8	-	-
Garden Warbler	-	-	1	-	-	2
Goldfinch	1	1	6	3	3	1
Great Spotted Woodpecker	-	-	3	-	2	9
Great Tit	-	2	26	1	-	13
Green Woodpecker	-	-	-	-	-	8
<b>Greenfinch</b>	1	-	6	-	-	2
Grey Heron	-	-	-	-	1	-



Species	Number of Individuals within Each Habitat Type over all Surveys (Dominant habitat highlighted in blue. Highlighted green where not recorded using the Site itself)					
	Amenity Grassland/ Farmyard	Arable	Hedgerow/ Scrub	Semi- improved Grassland	Flying Overhead	Off-Site
Grey Partridge	-	2	2	1	-	-
Greylag Goose	-	-	-	-	4	-
House Martin	-	-		2	-	-
Jackdaw	-	-	16	3	10	18
Jay	-	-	-	-	2	2
Kestrel	-	-	-	-	2	1
Lapwing	-	3	-	-	-	-
Linnet	-	6	19	-	13	1
Little Egret	-	-	-	-	2	-
Long-tailed Tit	-	-	3	-	-	3
Magpie	1	-	1	1	1	4
Mallard	-	-	-	-	-	2
Nuthatch	-	-	1	-	-	-
Pheasant	-	-	1	3	5	1
Pied Wagtail	1	-	-	1	5	-
Red Kite	-	-	-	-	1	-
Red-legged Partridge	-	6	10	3	7	2
Reed Bunting	-	1	3	-	3	1
Robin	2	1	21	1	-	17
Sedge Warbler	-	-	1	-	1	1
Siskin	-	-	-	-	1	-
Skylark	-	25	2	-	3	4



Species	Number of Individuals within Each Habitat Type over all Surveys (Dominant habitat highlighted in blue. Highlighted green where not recorded using the Site itself)					
	Amenity Grassland/ Farmyard	Arable	Hedgerow/ Scrub	Semi- improved Grassland	Flying Overhead	Off-Site
Song Thrush	-	-	3	-	-	8
Sparrowhawk	-	-	-	-	1	-
Spotted Flycatcher	-	-	-	-	1	-
Stock Dove	-	-	-	1	3	6
Swallow	-	4	-	-	4	7
Tawny Owl	-	-	-	-	-	2
Tufted Duck	-	-	-	-	-	2
Whitethroat	-	1	23	-	-	6
Woodpigeon	2	13	45	12	63	39
Wren	1	2	16	1	2	23
Yellowhammer	-	2	40	1	6	4
<b>Total Birds Recorded</b>	<b>10</b>	<b>93</b>	<b>361</b>	<b>49</b>	<b>190</b>	<b>293</b>
<b>No. Species Recorded</b>	<b>8</b>	<b>20</b>	<b>31</b>	<b>18</b>	<b>31</b>	<b>38</b>

4.2.1 The results of the surveys are discussed below, taking into consideration the diversity of species recorded and each species' abundance, plus their spatial distribution within the survey area and changes in use of the survey area across the survey season. Individual species of conservation concern are then discussed separately in turn where applicable.

### 4.3 Species Diversity

#### *Overall Assemblage*

4.3.1 A total of 54 different species were recorded over the four surveys, with 39 species recorded during the first survey, 35 during the second and third survey, and 36 in the final survey.

#### *Species of Conservation Concern*

4.3.2 Of the 54 species recorded during the surveys, 8 were red-listed species and 14 were amber-listed species. Of these, 10 species were also Species of Principal Importance (SPI).





#### **4.4 Breeding Status**

- 4.4.1 Of the 54 species recorded, it is considered that 4 are confirmed breeders, within or immediately adjacent to the Site. Blackbird and blue tit nests were observed by the surveyor, confirming breeding activity for these species on-Site. Additionally, long-tailed tit and reed bunting were observed to be carrying food and nesting materials, which are behaviours associated with breeding.
- 4.4.2 A further 16 species are probable breeders, being those species for which suitable breeding habitat is present, and which were seen over multiple surveys.
- 4.4.3 Of the remaining species, 17 are possible breeders and 17 are unlikely to breed. Possible breeders are those species for which suitable habitat is present but were only recorded occasionally within the Site. Species unlikely to be breeding were only recorded flying over the Site or off-Site.

#### **4.5 Temporal Changes**

- 4.5.1 The highest number of individual birds recorded was greatest in Survey 4 (mid-July): 291, with the fewest recorded in Survey 2 (mid-May): 234, and intermediate numbers counted in Surveys 1 and 3. Bird abundance is likely to be swelled by young birds later in the breeding season. Counts of birds may drop in the middle of the season as more adult birds are incubating and thus less likely to be observed.
- 4.5.2 The greatest number of different species were recorded during Survey 1 (late April): 39, and the lowest diversity of species was recorded in both Surveys 2 and 3 (mid-June): 35. Survey 1 encompassed the passage period for migratory species and 4 of the 55 species were only recorded during this survey.
- 4.5.3 Different species will breed at subtly different times of year, and many factors influence bird activity, distribution and counts. As such, some variation may be expected; especially as the survey involves a sampling process.

#### **4.6 Spatial/ Habitat Distribution**

- 4.6.1 **Table 6** shows the total number of each bird species recorded within different broad categories of habitats across the survey area, giving an indication of the relative use of each habitat by each species. Each broad habitat is discussed below.

##### ***Amenity Grassland and Farmyard***

- 4.6.2 A small area of amenity grassland exists around an area of hardstanding containing several farm buildings within the eastern section of Old Wood North.
- 4.6.3 Only 10 birds were recorded within this small patch of habitat, which represented eight species. The most notable sighting was that of a single greenfinch, which is a red-listed bird of conservation concern. Additionally, two observations were made of woodpigeon and one of a wren, as well as small numbers of other common species typical of farmland and gardens.

##### ***Arable***

- 4.6.4 The arable fields, which comprise the majority of the Site, were used by a total of 20 different species and 93 individuals were recorded.



4.6.5 Both swallow and lapwing (the latter a red-listed species and SPI), were recorded exclusively in the Site's arable fields. A further five red-listed species were observed in arable habitats, including large numbers of skylark, as well as five amber-listed birds.

4.6.6 The arable habitat within the Site provides suitable foraging habitat for a wide range of species typical of farmland, and nesting opportunities for ground-nesting species such as skylark.

#### ***Hedgerows and Scrub***

4.6.7 Fields within the Site were bounded largely by a network of hedgerows. In places small patches of mixed scrub had formed adjacent to the hedgerows.

4.6.8 The boundary habitats supported a total of 31 species, 10 of which were exclusively recorded here, including 2 species of conservation concern (sedge warbler and song thrush). In total 12 species of conservation concern were recorded in these habitats, including modest numbers of amber-listed woodpigeon, wren, whitethroat and dunnoek (which is also an SPI). Additionally, hedgerows supported the largest number of three red-listed species, including two SPI; linnet and yellowhammer.

4.6.9 The hedgerows were the most frequently used habitat for both sheltering and foraging birds. Of the 994 bird observations made during the surveys, 361 sightings were from the hedgerows, and these represented 31 of the 55 recorded species.

4.6.10 The sightings were not isolated to an individual feature; however, the species-rich hedgerows were found to support more individual birds, whilst the species-poor defunct hedgerows were less well used. The hedgerows vary in structure and woody species diversity; however, all provide refuge and foraging resources for birds. They also provide important well-connected habitat in this intensively farmed landscape.

#### ***Semi-improved Grassland***

4.6.11 Two of the Site's fields were described as semi-improved grassland, with several other small patches of the same habitat type being located across the Site. Across the four surveys, 49 individuals of 18 species were recorded in these grassland areas. These include the only observations of house martin, as well as six other birds of conservation concern.

#### ***Flying Overhead***

4.6.12 In total, 31 species were recorded flying over the Site. This included notable numbers of woodpigeon.

4.6.13 Several species were only recorded flying overhead and not using the Site itself, indicating a transient presence, and were considered unlikely to be breeding within the Site. These species included bullfinch, grey heron, greylag goose, little egret, red kite, siskin, sparrowhawk and spotted flycatcher; of these, three are amber-listed and one is red-listed. Bullfinch and spotted flycatcher are also SPI.

#### ***Off-Site***

4.6.14 During the surveys, species were recorded either side of the walked transect routes, including some areas outside of the red line boundary of the Site. Whilst species recorded off-Site will not necessarily be impacted directly by the development, they can provide useful context for the on-Site assemblage.

4.6.15 In total, 293 individual birds of 38 different species were recorded off-Site during the surveys. The vast majority of these off-Site observations were recorded within the adjacent woodland patches; woodland provides



suitable foraging and nesting habitat for a range of species. Species recorded in the woodland parcel were generally similar to the assemblage associated with boundary features on Site, however, tawny owl and green woodpecker were only recorded in the off-Site woodlands. Both are primarily associated with woodland, although will utilise open habitats for foraging. Additionally, the tawny owl observations were both of juveniles, confirming breeding activity within the adjacent woodland.

- 4.6.16 Furthermore, a number of ponds were located within and around the Site. Whilst the majority of the ponds were relatively small and were not associated any of the bird observations, the large pond located adjacent to the Site's southern boundary supported cormorant, mallard and tufted duck. These wetland species were not recorded anywhere else on-Site.

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

- 4.7.1 Individual species of conservation concern are discussed below in more detail.

##### ***Red-listed Species of Conservation Concern***

###### ***Greenfinch***

- 4.7.2 Greenfinches are found in open woodland, farmland and gardens, and are red-listed because of recent severe breeding population decline.
- 4.7.3 Six greenfinch were recorded within the boundary hedgerows, two were seen off-Site and a single observation was made near to the farm buildings during the last two surveys. Two greenfinch were noted using a hedgerow in the northern parcel within the first survey in April. The Site and adjacent land contains suitable habitat for the species and it was recorded on 3/4 surveys, so is considered probably breeding.

###### ***Grey Partridge***

- 4.7.4 The grey partridge is a farmland bird that feeds on seeds, leaves and small invertebrates. It is a ground-nesting bird and breeds in open scrub and on farmland, close to hedges or other vegetation. Once widespread, the grey partridge is now red-listed due to steep population declines associated with agricultural intensification. It is also an SPI.
- 4.7.5 Low numbers of grey partridge were recorded in the arable, grassland and hedgerow habitats during the first survey. Given the lack of subsequent observations, it was considered unlikely that this species was breeding within the Site.

###### ***House Martin***

- 4.7.6 House martin is a migratory species that breed in the UK. Although the species would traditionally build nests of mud on cliff faces, it is now more commonly associated with manmade structures, usually on the eaves or gables of houses. A decline in numbers has earned the species a place on the red list of Birds of Conservation Concern.
- 4.7.7 Two house martins were recorded using the grassland during the second survey. Given that the presence of some farm buildings and houses on Site, there is a possibility that the species could utilise the Site for breeding, especially given the opportunity to forage in the adjacent open habitats.



### **Lapwing**

- 4.7.8 Lapwings are farmland or estuary birds which nest on the ground, either on bare ground (such as in tilled arable fields of spring-sown crops) or short grassland. Pairs that nest in arable fields often take their young to adjacent pasture to feed once they have fledged. This species requires long sightlines to spot predators and territory sizes are 0.4-0.8ha, which are only held until the young fledge.
- 4.7.9 Lapwing have suffered significant declines recently and are therefore red-listed and an SPI.
- 4.7.10 Only three lapwing were recorded and only in the first survey. Given the lack of subsequent observations, it was considered unlikely that this species was breeding within the Site.

### **Linnet**

- 4.7.11 Linnets are found on farmland wherever there is a plentiful supply of seeds throughout the year. Mixed farmland is particularly valuable. They nest in dense hedgerows, bramble or other types of scrub. Linnet numbers have dropped substantially over the past few decades, with the UK population estimated to have declined by 57 per cent between 1970 and 2008. This is largely the result of a lack of food sources in modern farming. Linnet is also an SPI.
- 4.7.12 Linnets were recorded consistently in each survey, peaking in the final survey where 21 were observed. The hedgerow and arable habitats provide foraging resources for linnet, as well as suitable nesting habitat in hedgerows and scrub. Therefore, the species was considered to probably be breeding within the Site.

### **Skylark**

- 4.7.13 Skylarks are ground-nesting birds, requiring open habitats to maintain long sightlines for predator surveillance. They are mainly associated with arable habitats, grassland and moorland in the UK. Skylark have suffered dramatic declines in breeding population in Britain in recent decades, with a halving of numbers in the 1990s, predominantly due to changes in farming practices including loss of permanent pasture to grass ley, silage or arable and the timing of crop sowing and harvesting. As a result, skylark is a red-listed species and SPI.
- 4.7.14 Skylarks were recorded in each survey with a peak of 13 individuals recorded during Survey 2. Skylarks were mainly recorded within arable habitats and were found within ten of the Site's twelve arable fields. A further 2 birds were seen perched in hedgerows, 4 were observed singing in neighbouring arable land and 3 were flying overhead. Skylark breeding is highly likely within the Site given the survey data.
- 4.7.15 Given the suitability of the Site's habitats, as well as the surrounding landscape, it is considered that the Site is able to support a stable breeding population of Skylark. It is estimated that there are between seven and nine skylark territories within the Site based on location consistency and regularity of species sightings across all four surveys. These locations are indicated by orange circles in Appendix A. Mitigation will be discussed in more detail within the forthcoming Ecological Impact Assessment as not all territories will be affected by proposed panelling, however it is probable that a proportion of these territories can be mitigated for through the sowing of suitably large and open unpanelled areas with either a set-aside or spring-sown crop to provide enhanced nesting habitat. Displacement of a remaining approximately three to four skylark territories into suitable neighbouring habitats is likely to be mitigated for through the proposed grassland enhancement within the panelled fields which will increasing their suitability as a skylark foraging source above that of previously arable land, thereby raising the carrying capacity of surrounding fields for this species.



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#### **Spotted Flycatcher**

- 4.7.16 Spotted flycatchers are songbird associated with open woodland, parks and gardens where they can use vegetation to perch and watch for its insect prey. They are migratory birds, spending winter in Africa, but breed in the UK. They use grass, lichens and twigs to build nests in sheltered crevices. The species is red-listed due to significant population declines, likely due to conditions in their wintering grounds and a decline in flying insects.
- 4.7.17 A single spotted flycatcher was observed flying over the Site and not utilising any of the habitats. The species is not considered likely to be using the Site to breed.

#### **Yellowhammer**

- 4.7.18 Yellowhammers occur on farmland and moorland where there are open areas of grassland, heathland or arable crops, but with perching areas provided by trees or tall scrub. They nest on or close to the ground in ditch vegetation or at the base of short, thick hedgerows and scrub. They are most commonly found in hedgerows that have a wide, uncut grass margin or ditch.
- 4.7.19 UK yellowhammer populations have declined rapidly in the recent past with the loss of uncultivated field margins, intensification of agriculture and the decline in winter food sources such as winter stubble. As a result, yellowhammer is a red-listed Species of Conservation Concern and SPI.
- 4.7.20 Yellowhammers were observed in good numbers across each survey, with a peak count of 24 individuals being recorded during the first survey. The majority of observations were of individuals singing from hedgerows across the Site. In many instances, the surveyor observed pairs of birds. It is therefore considered probable that the species is breeding.

#### **Amber-listed Species of Conservation Concern**

##### **Bullfinch**

- 4.7.1 Bullfinch is a charismatic species found mainly in woodland and farmland. They feed primarily on fleshy seeds and buds. They are amber-listed due to long-term moderate breeding population decline. They are also an SPI.
- 4.7.2 The only bullfinch observation was a single bird outside the Site boundary. This species was therefore not considered to be breeding within the Site.

##### **Dunnock**

- 4.7.3 Dunnock inhabit any well vegetated areas with scrub, brambles and hedges, including field edges. They spend large amounts of time on the ground in amongst grassland but also remain close to shrubby vegetation cover. Dunnock abundance fell substantially between the mid-1970s and mid-1980s, after a period of population stability. Some recovery has occurred throughout the UK since the late 1990s. Dunnock is an amber-listed Species of Conservation Concern and a SPI.
- 4.7.4 Dunnock were recorded in modest numbers within the hedgerows across each survey, and were also recorded in the open habitats. This species is present all year round and the Site is likely to support a small breeding population.





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#### **Greylag Goose**

- 4.7.5 Greylag goose is the UK's most common goose species and can be found wherever there is water, although it is often seen foraging on farmland. The species is amber-listed due to the population being considered localised, with 50-60% of the UK's wintering population being found at fewer than 10 sites.
- 4.7.6 The only observations of greylag goose were of individuals flying over the Site and so the species is not likely to be breeding on the Site.

#### **Kestrel**

- 4.7.7 Kestrel is a familiar raptor found in grassland, heath and arable habitats. It is amber-listed because of recent moderate breeding population decline.
- 4.7.8 Kestrel were recorded on 2 of the 4 surveys, either off-site or flying over the site. They are considered possibly breeding within the Site itself.

#### **Mallard**

- 4.7.9 Though a very familiar species of freshwater habitats across the country, mallard is amber-listed due to recent moderate wintering population decline.
- 4.7.10 Mallard were only observed in an off-Site pond. While they may be breeding close to this feature, and using the Site for foraging, they are not utilising the Site to breed.

#### **Reed Bunting**

- 4.7.11 The reed bunting is a resident species associated with reedbeds, arable habitats, ditches and hedgerows. They are amber-listed due to long-term moderate breeding population decline.
- 4.7.12 Reed bunting were recorded in low numbers in three of the four surveys, primarily in the Site's hedgerows or in flight. The species is thought to be using the Site to breed given that an individual was seen carrying food to and from one of the Site's hedgerows.

#### **Sedge Warbler**

- 4.7.13 The sedge warbler is a migrant species that breeds in the UK. It is associated with wetland and marshy habitats across Britain. Sedge warbler is amber-listed in the UK due to population fluctuations, thought to be caused by rainfall shortages in the species' wintering grounds which impacts adult survival.
- 4.7.14 Sedge warbler were recorded in low numbers in Surveys 2 and 3. Given the presence of suitable breeding habitat in the ditches and records in the middle of the breeding period, it is considered that this species is possibly using the Site to breed.

#### **Song Thrush**

- 4.7.15 The song thrush is associated with thick hedgerows, native woodland, damp ground, and grazed pasture. The bulk of the song thrush diet is earthworms and snails, particularly when insect larvae and berry crops are not available. Therefore, damp ground where these food sources are readily found is essential. It has suffered long-term declines, although numbers have recovered in recent years. It is amber-listed and an SPI.
- 4.7.16 Song thrush were recorded in each survey, however, the majority of observations were of individuals in neighbouring off-Site woodlands. Only three observations were made on-Site and all were within hedgerows



in separate locations across the Site. This species holds large territories and the Site is likely to support a small breeding population.

#### **Sparrowhawk**

- 4.7.17 Sparrowhawk is a widespread bird of prey species which hunts an array of small birds across a variety of habits, including farmland and gardens.
- 4.7.18 One sparrowhawk was recorded flying overhead, presumably hunting over a field. It is considered that the species is more likely to use the adjacent woodland for breeding and may use the Site for foraging.

#### **Stock Dove**

- 4.7.19 Stock doves are typically found in farmland, towns and open woodland. They nest in holes, including on occasion in rabbit warrens. This species is amber-listed for having an important breeding population.
- 4.7.20 Stock dove was recorded in low numbers during the first, third and fourth survey. However, it was only recorded within the survey boundary once, foraging within a semi-improved grassland field, with other observations made in the adjacent woodland and flying over two of the arable fields. It is possible that this species is using the Site to nest, but it may be using the adjacent woodland to nest and the Site itself for foraging; as such breeding was considered possible only.

#### **Tawny Owl**

- 4.7.21 Tawny owl is a nocturnal species typically associated with broadleaved woodland but may venture onto farmland when hunting, typically for small mammals. The species breeds within cavities in large trees, although they will sometimes use disused crow nests or squirrel dreys. Population declines in the latter half of the twentieth century has earned the tawny owl a place on the amber-list of Birds of Conservation Concern.
- 4.7.22 During Survey 3, two separate observations were made of juvenile tawny owl in woodlands adjacent to the Site. It is likely that this species is utilising the woodland for breeding and may use the Site for foraging.

#### **Whitethroat**

- 4.7.23 Whitethroat is a summer visitor and passage migrant, breeding in many areas but are typically associated with grassland, scrub and hedgerows. This species forages in low vegetation for a variety of invertebrates as well as berries and soft fruit when available. Nests are typically constructed within bushes, shrubs or other lower vegetation to ensure protection. Although common in the UK with a growing population, whitethroat is amber-listed due to an historic population crash caused by droughts in its wintering grounds.
- 4.7.24 Whitethroats were recorded in each survey, singing from hedgerows across the Site. This indicates that the species is likely using the Site for breeding. Modest numbers were noted.

#### **Woodpigeon**

- 4.7.25 Woodpigeon is the UK's largest and most common pigeon species and can be found in gardens, parks, woodland and farmlands across the country. The species feeds on a variety of vegetative items, including seeds, leaves, grains, fruit and root crops and is therefore often observed foraging in agricultural fields.
- 4.7.26 Woodpigeon were recorded in large number in each survey, with a peak count of 59 individuals in the third survey and the lowest count coming from the first survey where 26 individuals were recorded. Woodpigeon were observed primarily in hedgerows, although were also recorded in all of the other major habitats on the



Site, as well as flying overhead and off-Site. It is highly likely that the species is using the Site's fields for foraging and using the hedgerows and adjacent woodland to nest during the breeding season.

#### **Wren**

- 4.7.27 Wrens can be found in a wide range of habitats including farmland and deciduous woodland, as well as heathland, moorland and islands. It is the most common breeding bird in the UK although it is likely to suffer declines during particularly cold and prolonged winters. Although common, it has recently been reclassified as an amber-listed species of conservation concern to due numbers having an important breeding population in a European context.
- 4.7.28 The species was noted in each survey, singing within multiple hedgerows and within and close to the adjacent woodland patches. Due to the abundance of individuals (a peak of 16 individuals in the third survey), it is highly likely that the species is using the Site or adjacent habitats for breeding, although no nests or nesting behaviour were noted by the surveyor. The numbers recorded are typical for the size of the Site.

#### **Other Birds**

- 4.7.29 Other birds recorded were primarily generalist resident species which are typical of an intensively farmed landscape with a network of hedgerows. They occurred throughout the Site, but the mature hedgerows with trees supported the greatest abundance of birds and diversity of species.



## 5 CONCLUSIONS

- 5.1.1 The survey area supports a good diversity of breeding birds, with 54 species recorded, including 8 red-listed and 14 amber-listed species of conservation concern, of which 10 are also Species of Principal Importance.
- 5.1.2 The boundary hedgerows were used by the greatest number of species. Most of these are commonly occurring, resident farmland birds, although several are species of conservation concern such as dunnoek, greenfinch, linnet, reed bunting, song thrush, whitethroat, wren and yellowhammer. The species-rich and more mature hedgerows with trees were especially well used, with defunct hedgerows being used to a lesser extent.
- 5.1.3 The arable fields and semi-improved grassland areas supported a relatively large number of species also, including several birds of conservation concern. Most notably, skylarks were recorded in modest numbers; this species is reliant on the arable fields for nesting. Additional species will forage in the open fields, and house martin, for example, were recorded foraging exclusively over the semi-improved grassland.
- 5.1.4 The Site's other habitats, such as the amenity grassland and farmyard area, supported a low abundance a limited diversity of birds, whilst the woodland habitats adjacent to the Site supported a large number of individuals and species.
- 5.1.5 Taking together the overall diversity of species recorded; the abundance of species of conservation concern; and the likelihood of these species breeding within the Site, the overall breeding bird assemblage is considered to be of **Local** ecological importance.
- 5.1.6 An assessment of potential impacts and appropriate mitigation and enhancement measures for breeding birds are discussed in the Ecological Impact Assessment report, of which this survey report is a technical appendix.



**APPENDIX A – SKYLARK TERRITORY MAPPING**

