



Hallam Land Management Ltd.

NW Bicester

BREEDING BIRD SURVEY REPORT

November 2021

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Rev	Issue Status	Prepared / Date	Reviewed / Date	Approved / Date
-	Draft	OJB / 31.08.21	BRJ 06.09.21 / MJF 04.10.21	JD / 27.09.2021 / 11.10.2021
A	Final	-	-	JD/ 23.11.2021

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1.0 NON-TECHNICAL SUMMARY

- 1.1 FPCR Environment & Design were commissioned by Hallam Land Management to conduct a Breeding Bird Survey at a proposed development site to the northwest of Bicester, Oxfordshire during 2021. Proposals for the site include extensive areas of green infrastructure and public open space.
- 1.2 The survey was undertaken between April and June 2021 during which time a total of 50 bird species were recorded, of which 22 were considered 'notable' species. Eight species were confirmed as breeding within the site boundary, 25 were considered to be probable breeders and the remaining 17 species were considered possible or non-breeders.
- 1.3 The breeding bird assemblage within the site were typical of the habitats present, comprising mainly common and widespread species. The assemblages associated with the internal fields, hedgerows, woodland blocks and small ponds were considered to be of **Local** conservation importance.
- 1.4 One breeding species within the survey area (Lapwing) was considered of **County** conservation importance based on the species' conservation status and scarcity as a breeding species in Oxfordshire. A further 12 individual species were considered of **Local** conservation importance given their respective conservation statuses and abundance on site. The remaining individual species recorded were considered of **Site** conservation importance.
- 1.5 The current proposals will likely cause a **County Adverse** impact on lapwing without mitigation since the large open fields this species requires for breeding will be lost. Mitigation/compensation is therefore recommended in the form of a lapwing mitigation strategy on nearby agricultural land, which would result in an overall negligible impact on the species.
- 1.6 The current development proposals will lead to a Minor Adverse to **Adverse** impact on a Local level for the other farmland specialists recorded since this habitat will be lost. To reduce the magnitude of this impact, mitigation measures, are recommended including species-rich grassland and adjacent scrub / hedgerow planting within the green infrastructure of the scheme.
- 1.7 The current proposals will lead to a **Negligible** impact on the assemblages associated with the watercourse corridor and the hedgerows / trees since these features will be mostly retained. In the long-term there will be a **Local beneficial** impact for the woodland assemblage as the proposed planting within the development establishes.
- 1.8 Mitigation measures are recommended to minimise disturbance impacts from construction operations; any vegetation clearance will be undertaken outside the bird nesting season (March – August, inclusive). If this is not possible, an ecologist should make a check of any suitable breeding habitat prior to its clearance, with suitable stand-offs (as determined by the ecologist) retained around any active nests until dependant young have fledged.
- 1.9 A range of enhancement opportunities have been suggested based on the habitats and bird species recorded to achieve biodiversity gains. These include sensitive planting schemes and the provision of a range of nest boxes.

2.0 INTRODUCTION

2.1 FPCR Environment & Design Ltd were commissioned by Hallam Land Management to undertake a Breeding Bird Survey (BBS) on a site to the north-west of Bicester (central OS grid reference SP 570 251), hereafter referred to as ‘the site’.

Site Location and Context

2.2 The site is dominated by arable cropland with species poor semi-improved and improved grassland for grazing livestock, , scattered scrub, hedgerows, and a small woodland block. Three small watercourses bisect the site, one close to the site’s northern boundary, a second towards the southern end of the site and the third running north-south from the existing development to join the River Bure at Lords Lane. Along these watercourse corridors there is a mix of dense and scattered scrub and standard trees.

2.3 The site is bound by existing residential development to the north-east, the railway approaching Bicester North station to the south. The remaining perimeter of the site is bound by existing agricultural boundaries.

Site Proposals

2.4 The site is proposed as a mixed use development, with an extensive network of green infrastructure and public open space including which provides opportunities for habitat mitigation and enhancements.

Survey Objectives

2.5 The Breeding Bird Survey was carried out between April and June 2021. The objectives of the survey were to:

- Identify the presence of any designated nature conservation sites that support notable breeding bird assemblages within or in the vicinity of the Site.
- Identify the presence, species, and distribution of breeding birds within the Site.
- Evaluate the conservation importance of habitats within the Site to local bird populations and identify any areas of ornithological interest.
- Make recommendations to minimise the potential impact of development and to consider opportunities for additional mitigation, compensation, and enhancement where relevant.

3.0 LEGISLATION & STATUS

Legislation

- 3.1 The Wildlife and Countryside Act 1981 (as amended) (WCA) is the principal legislation affording protection to UK wild birds. Under this legislation all birds, their nests and eggs are protected by law, and it is an offence, with certain exceptions, to recklessly or intentionally:
- Kill, injure or take any wild bird.
 - Take, damage, or destroy the nest of any wild bird while in use or being built; or
 - Take or destroy the egg of any wild bird.
- 3.2 Additional protection is afforded to species listed on Schedule 1 of the WCA, whereby intentional disturbance whilst building or occupying a nest or disturbance of dependent young is also considered an offence.
- 3.3 Certain species have also been identified as Species of Principal Importance (SPI) under Section 41 of the NERC Act 2006 (NERC S.41). The S.41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under Section 40 of the Natural Environment and Rural Communities Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.
- 3.4 The site falls within the Oxfordshire Local Biodiversity Action Plan (LBAP) which identifies a number of targets for UK priority species that occur within this area, however no bird species are included.

Status

- 3.5 In addition to statutory protection, some bird species are classified according to their conservation status, such as their inclusion on the Red and Amber lists of Birds of Conservation Concern (BoCC) in the UK:
- 3.6 Red list (high conservation concern) species meet at least one of the following criteria:
- They are globally threatened according to IUCN criteria.
 - Their population has declined rapidly (50% or more) in recent years.
 - They that have declined historically and not shown a substantial recent recovery.
- 3.7 Amber list (medium conservation concern) species are those that meet at least one of the following criteria:
- They have an unfavourable conservation status in Europe.
 - Their population or range has declined moderately (between 25% and 49%) in recent years.
 - Their population has declined historically but made a substantial recent recovery.
 - They are rare breeders.
 - They have internationally important or localised populations.
- 3.8 Green list (low conservation concern) species fulfil none of the above criteria.

4.0 METHODOLOGY

Desktop Study

- 4.1 To compile existing baseline ornithological information, the following statutory and non-statutory organisations were consulted for data regarding designated sites for which birds are a qualifying feature, and protected/notable bird records:
- Natural England via the Multi Agency Geographic Information for the Countryside (MAGIC) website
 - Thames Valley Ecological Records Centre (TVERC)
- 4.2 The geographical extent of the search area for biodiversity information was related to the significance of sites and species and potential zones of influence which might arise from development within the Site, as follows:
- 15km around the Site boundary for sites of International Importance (e.g. Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar sites);
 - 2km around the Site boundary for statutory sites of National or Regional Importance (e.g. Sites of Special Scientific Interest (SSSIs)) and
 - 1km around the Site for non-statutory designated sites of County Importance (e.g. Sites of Importance for Nature Conservation (SINCs)/Local Wildlife Sites (LWSs) and protected or otherwise notable species records within the last 20 years.

Field Survey

- 4.3 To provide a reasonable level of accuracy for determining the population status of the breeding birds on the site, three surveys were undertaken between dawn and 11.00 in April, May and June 2021. A route was mapped out prior to the surveys being undertaken, paying particular attention to any linear features, such as hedgerows and watercourses, and other features such as ponds and scrub. Bird surveys were not undertaken in unfavourable conditions, such as heavy rain or persistent strong wind (conditions which can negatively affect the results). Table 1 provides details of the survey dates and weather conditions.

Table 1: Breeding Bird Survey Dates and Conditions

Survey	Date	Cloud Cover (%)	Rain	Wind (Beaufort)	Visibility
1	19.04.21	0	None	Calm to Light Air	Excellent
2	12.05.21	60-90	None	Light Air to Light Breeze	Excellent
3	10.06.21	100	None	Calm to Light Air	Very Good

- 4.4 The methodology employed was broadly based on territory mapping¹ used for the British Trust for Ornithology (BTO) Common Bird Census (CBC). Standard BTO species codes and symbols for bird activities were used to identify birds and denote activity, sex and age where appropriate. Birds were considered to be holding a territory and therefore likely to be utilising the site for breeding activities if they were displaying breeding behaviour, such as: singing, nest building, food carrying

¹ Bibby, C.J., N.D. Burgess & D.A. Hill, 2000: *Bird Census Techniques*: 2nd Edition. London: Academic Press

or territorial defence. If birds did not display such behaviour, e.g. they were only recorded flying over the site, they were considered non-breeders. Breeding evidence used in this report follows EOAC guidelines 1979², as shown in Appendix A.

Species & Assemblage Assessment

- 4.5 The Chartered Institute of Ecology and Environmental Management (CIEEM) guidance on ecological impact assessment assesses nature conservation importance within a geographical context³. To attain each level of importance, an ornithological resource or one of the features (species population or assemblage of species) should meet the criteria set out in Table 2. In some cases, professional judgment may be required to increase or decrease the allocation of importance, based upon local knowledge
- 4.6 The site has also been assessed against the selection criteria for Local Wildlife Site (LWS) for Oxfordshire⁴ on a number of criteria set out for breeding birds. LWSs are recognised by central government as an important tool in promoting sustainable development and protecting biodiversity.

The recent county annual bird report the *Birds of Oxfordshire 2013*⁵ was consulted to inform the assessment. Table 2: Evaluation Criteria

Nature Conservation Value	Examples of Selection Criteria
International	A species which is part of the cited interest of an SPA and which regularly occurs in internationally or nationally important numbers. A species present in internationally important numbers (>1% of international population).
National	A species which is part of the cited interest of a SSSI and which regularly occurs in nationally or regionally important numbers. A nationally important assemblage of breeding or over-wintering species. A species present in nationally important numbers (>1% UK population). Rare breeding species (<300 breeding pairs in the UK).
Regional	Species listed as being of principal importance under NERC S.41 which are not covered above, and which regularly occurs in regionally important numbers. Species present in regionally important numbers (>1% of regional population). Sustainable populations of species that are rare or scarce within a region. Species on the BoCC Red List & which regularly occur in regionally important numbers.
County	Species listed as being of principal importance under NERC S.41 which are not covered above and which regularly occurs in county important numbers Species present in county important numbers (>1% of county population). Sustainable populations of species that are rare or scarce within a county, or are listed as being of principle importance under S41 of the NERC Act. A site designated for its county important assemblage of birds (e.g. a SINC Site). Species on the BoCC Red List & which regularly occur in county important numbers.
Local	Other species of conservation interest (e.g. all other species on the BoCC Red and Amber List or species listed as being of principal importance under NERC S.41 which are not covered above) regularly occurring in locally sustainable populations. Sustainable populations of species which are rare or scarce within the locality.
Site	Species that are common and widespread

² European Ornithological Atlas Committee, 1979. *Categories of Breeding Bird Evidence*. European Ornithological Atlas Committee.

³ http://www.cieem.net/data/files/Publications/EcIA_Guidelines_Terrestrial_Freshwater_and_Coastal_Jan_2016.pdf

⁴ Thames Valley Environmental Records Centre and Buckinghamshire & Milton Keynes Environmental Records Centre [online]. *Local Wildlife Sites Selection Criteria (Version 7)*. Available from:

https://www.tverc.org/cms/sites/tverc/files/LWS%20Selection%20Criteria_v7%20Aug18.pdf

⁵ Oxford Ornithological Society 2018. *Birds of Oxfordshire 2013*.

5.0 RESULTS & EVALUATION

Desk Study

Designated Sites

- 5.1 One statutory site of some relevance to birds was present within the search area, located 400m north-west of the Site. Ardley Cutting & Quarries SSSI is primarily designated for its geological significance, but its biological interest associated with limestone grassland, scrub, ancient woodland, and wetland habitats is also highlighted, although no individual bird species are mentioned, these habitats are likely to support a range of species. The SSSI also forms part of the non-statutory Ardley & Heyford Conservation Target Area also noting considerable species interest for the area's bird assemblage in its reason for designation.

Protected / Notable Species

- 5.2 Records for eight notable species - bullfinch *Pyrrhula pyrrhula*, dunnock *Prunella modularis*, house sparrow *Passer domesticus*, red kite *Milvus milvus*, song thrush *Turdus philomelos*, starling *Sturnus vulgaris*, and swift *Apus apus* - were located within 1km of the site within the last 20 years. There were no records from within the boundary of the site.
- 5.3 A significant number of these returned records comprised swift from the existing developed area on the north edge of Bicester, with the site very unlikely to include habitats to support this urban specialist. The remaining seven species comprise common generalist species which the on-site habitats have potential to support.

Field Survey

- 5.4 A total of 50 bird species were recorded during the Breeding Bird Survey (for complete list see Appendix A). Of these, 22 species meet the criteria of at least one of the following pieces of legislation/classifications discussed above: Schedule 1 of the WCA; Section 41 of the NERC Act 2006; and BoCC Red or Amber lists. These species are hereafter referred to as 'notable' species.
- 5.5 Breeding evidence accumulated across all three surveys was used in the assignment of breeding status for each species in the following results.
- 5.6 Of the 50 species recorded as present during the Breeding Bird Survey, eight were confirmed as breeding. These included notable species lapwing *Vanellus vanellus*, starling *Sturnus vulgaris* and bullfinch *Pyrrhula pyrrhula*. The remaining five confirmed breeders were of low conservation concern (BoCC Green-listed).
- 5.7 Twenty-five species were considered probable breeders, including red kite *Milvus milvus* which is afforded additional protection under the WCA Schedule 1. Other notable species classified as probable breeders were mallard *Anas platyrhynchos*, grey partridge *Perdix perdix*, kestrel *Falco tinnunculus*, skylark *Alauda arvensis*, willow warbler *Phylloscopus trochilus*, song thrush *Turdus philomelos*, dunnock *Prunella modularis*, yellow wagtail *Motacilla flava*, linnet *Linaria cannabina* and yellowhammer *Emberiza citrinella*. The other 14 probable breeding species were all BoCC Green-listed and therefore of low conservation concern.
- 5.8 The remaining 17 species recorded were considered possible breeders or non-breeders on the Site.

5.9 Table 3 provides a summary of the notable species recorded during the breeding bird survey and their respective breeding statuses on site, whilst Figure 1 shows the approximate locations where they were recorded.

Table 3: Notable Bird Species Recorded and Their Recent Status in Oxfordshire

Species	Legal / Conservation Status	Peak Count / Number of Survey Occasions Recorded	Breeding Status	Recent Status in Oxfordshire
Mallard <i>Anas platyrhynchos</i>	Amber List	5 / 2	Probable	Very common resident
Grey Partridge <i>Perdix perdix</i>	Red List NERC S.41	7 / 1	Probable	Regular in open farmland but declining sharply since 1960s. Numbers augmented by releases
Swift <i>Apus apus</i>	Amber List	1 flyover / 1	Non-breeder	Common but declining summer visitor and passage migrant
Stock Dove <i>Columba oenas</i>	Amber List	3 flyovers / 2	Possible	Numerous resident
Lapwing <i>Vanellus vanellus</i>	Red List NERC S.41	4 + 9 flyovers / 3	Confirmed	Once common resident but numbers of breeding pairs have declined
Herring Gull <i>Larus argentatus</i>	Red List NERC S.41	2 flyovers / 1	Non-breeder	Frequent visitor in mid-winter, occasional at other times.
Lesser Black-backed Gull <i>Larus fuscus</i>	Amber List	5 flyovers / 2	Non-breeder	Common visitor all year, some breed
Red Kite <i>Milvus milvus</i>	Green List WCA Sch. 1	6 / 3	Probable	Established resident
Kestrel <i>Falco tinnunculus</i>	Amber List	4 / 2	Probable	Common resident
Skylark <i>Alauda arvensis</i>	Red List NERC S.41	17 / 3	Probable	Common resident and passage migrant
House Martin <i>Delichon urbicum</i>	Amber List	2 flyovers / 1	Non-breeder	Common summer visitor currently suffering a population decline
Willow Warbler <i>Phylloscopus trochilus</i>	Amber List	8 / 2	Probable	Oxfordshire's most common breeding warbler. Recent evidence of decline.
Starling <i>Sturnus vulgaris</i>	Red List NERC S.41	74 + 18 flyovers / 3	Confirmed	Widespread winter visitor but much reduced breeding distribution since 1980s
Song Thrush <i>Turdus philomelos</i>	Red List NERC S.41	9 + 2 flyovers / 3	Probable	Common resident, perhaps declining in suburban areas. Strong autumn immigration augments wintering population
Redstart <i>Phoenicurus phoenicurus</i>	Amber List	1 / 1	Non-breeder	Scarce passage migrant
House Sparrow <i>Passer domesticus</i>	Red List NERC S.41	4 / 2	Possible	Abundant resident, showing signs of recent decline
Dunnock <i>Prunella modularis</i>	Amber List NERC S.41	14 / 3	Probable	Common and widespread resident
Yellow Wagtail <i>Motacilla flava</i>	Red List NERC S.41	2 / 1	Probable	Moderately common summer visitor, currently experiencing a reduction in numbers

Meadow Pipit <i>Anthus pratensis</i>	Amber List	1 / 1	Possible	Scarce breeder, abundant passage migrant, common winter visitor
Bullfinch <i>Pyrrhula pyrrhula</i>	Amber List NERC S.41	1 / 1	Confirmed	Common resident
Linnet <i>Linaria cannabina</i>	Red List NERC S.41	8 + 8 flyovers / 3	Probable	Common resident, passage migrant and winter visitor
Yellowhammer <i>Emberiza citrinella</i>	Red List NERC S.41	7 + 1 flyover / 3	Probable	Common but declining resident

Bird Survey Results Description

- 5.10 The majority of species recorded are typical of the habitats found across the site, being heavily influenced by the current agricultural management. The internal sections of large fields provide limited breeding opportunities for most species recorded with the exception of the notable lapwing, skylark, yellow wagtail and meadow pipit, all declining species commonly associated with farmland. Nesting lapwing were confirmed due to sightings of recently fledged juveniles in suitable breeding habitat, whilst skylark and yellow wagtail were considered probable breeders on Site (skylark due to the presence of several territories, and yellow wagtail due to the observation of a pair in suitable nesting habitat). A lack of additional breeding evidence was recorded for meadow pipit meaning it was considered only a possible breeder. Field interiors were also used as foraging areas by corvids (*Corvidae*) in large numbers, pigeons (*Columbidae*), gamebirds (*Phasianidae*) and by scavenging red kites.
- 5.11 Arable field margins and their boundaries provided suitable breeding and foraging habitat for small numbers of other widespread farmland birds including the notable species grey partridge, kestrel, stock dove *Columba oenas*, linnet *Linaria cannabina* and yellowhammer *Emberiza citrinella*, with field interiors providing further foraging opportunities. Of these, all but stock dove are considered to be probable breeders (grey partridge and kestrel due to pairs observed in suitable breeding habitat, linnet due to the presence of several pairs and territorial males across the Site, and yellowhammer on the basis of agitated adults in the same area on multiple site visits indicative of a nest nearby). Stock dove is regarded as a possible breeder due to the lack of any additional breeding evidence beyond adults seen in suitable nesting habitat. Species of low conservation concern recorded utilising the fields margins included pheasant *Phasianus colchicus*, red-legged partridge *Alectoris rufa*, woodpigeon *Columba palumbus* and collared dove *Streptopelia decaocto*.
- 5.12 The modified grassland provided further foraging opportunities for the notable meadow pipit as well as the widespread generalists starling and song thrush. Breeding was confirmed on site for starling given the presence of several flocks containing newly fledged young and one nest that was observed being visited by adults carrying food. Song thrush was considered a probable breeder with several males defending territories over the course of the three survey occasions. Other species recorded utilising the grassland habitats on site include green woodpecker *Picus viridis*, blackbird *Turdus merula*, corvids and pigeons.
- 5.13 Hedgerows and woodland areas hosted a number of resident and migratory breeding species including the low concern species buzzard *Buteo buteo*, great spotted woodpecker *Dendrocopos major*, wren *Troglodytes troglodytes*, blackbird, robin *Erithacus rubecula*, corvids including jay *Garrulus glandarius* alongside common tit, warbler and finch species. Notable species including willow warbler, starling, song thrush, house sparrow, dunnock and bullfinch were all noted to be using on-site hedgerow/woodland linear features. Dunnock, bullfinch, willow warbler were

considered probable breeders based on territorial males and/or pairs noted during the survey visits. The remaining species associated with this habitat were considered possible breeders in the absence of any further supporting evidence aside from redstart *Phoenicurus phoenicurus* with a single bird observed on the June survey considered likely to still be on migration to more suitable breeding grounds away from site.

- 5.14 Pied wagtails *Motacilla alba* were recorded near the off-site farm buildings and seen foraging in the adjacent on-site fields. This species was considered a probable breeder as aggressive encounters between individuals were noted on multiple surveys and a pair was observed in the vicinity of Hawkwell Farm.
- 5.15 Small numbers of mallard *Anas platyrhynchos* were recorded on both the April and June surveys both times in association with the watercourses. The observation of pairs in suitable habitat that became visibly agitated in the surveyor's presence indicated this species is a probable breeder.
- 5.16 Several notable species were recorded overflying the site only and were therefore considered to be non-breeders. These included swift *Apus apus*, herring gull *Larus argentatus*, lesser black-backed gull *Larus fuscus* and house martin *Delichon urbicum*.

Evaluation

Bird Assemblage

Local Wildlife Site Assessment

- 5.17 The site was assessed against published criteria for LWS selection⁴ to assess the site against the thresholds for Oxfordshire.
- 5.18 The criteria relevant to breeding birds are:
- Any site that supports the breeding of five or more scarce breeding species in the county.
 - Any site which supports a significant breeding assemblage with a *threshold site index score* equal to or exceeding the respective threshold for the relevant habitat type. Species need some evidence of breeding within the survey area to be included.
 - Any site that supports a significant colony of any of the species listed as notable county colonial breeders.
- 5.19 Regarding criterion a), several species listed as scarce breeders in the county were recorded during the survey. However, all aside from meadow pipit and redstart were recorded exclusively as flyovers, and evidence of possible breeding was noted in meadow pipit only. Therefore, the site does not satisfy this criterion for LWS designation.
- 5.20 For criterion b) the relevant habitats listed within the selection criteria are “farmland” and “woodland”. The breeding bird assemblage in each of these habitats was assessed only against species considered to be confirmed or probable breeders as per the criteria guidelines. The total score for the two relevant habitats has been calculated from the survey data and is shown in Table 4 below.

Table 4: An assessment of the breeding bird assemblage against the habitat thresholds for Oxfordshire.

Habitat	Species and individual scores	Site Value	Threshold Value
Farmland	Bullfinch – 2, Grey Partridge – 4, Kestrel – 1, Lapwing – 2, Linnet – 2, Skylark – 2, Yellow Wagtail – 3, Yellowhammer - 2	18	50
Woodland	Blackcap – 1, Bullfinch – 2, Chiffchaff – 2, Great Spotted Woodpecker – 1, Long-tailed Tit – 1, Red Kite – 2, Willow Warbler - 3	12	36

- 5.21 The calculated values of the breeding bird assemblages fall short of their respective thresholds set out in the above guidelines and thus the site does not satisfy the requirements of criterion b.
- 5.22 None of the notable colonial breeding bird species were observed to exhibit any behaviours indicative of breeding nor were any young birds seen during the three survey visits thus the site does not satisfy criterion c for LWS designation.
- 5.23 The site fails to meet any of the criteria for Local Wildlife Site designation based on the breeding bird assemblage alone, and it is considered the site supports an overall assemblage of breeding birds that is of no more than **Local** importance.

Breeding Assemblages

- 5.24 Arable farmland and the associated margins provided suitable foraging and/or breeding habitat for several farmland species including moderate numbers of, lapwing, , skylark and linnet alongside smaller numbers of grey partridge, stock dove, (a non-breeder at this site), yellow wagtail and yellowhammer. Birds of prey utilising the arable fields and considered probable breeders on site included red kite and kestrel, both of which are classed as well-established resident species in the county. There is an abundance of similar suitable agricultural habitat in the local landscape and therefore the site is considered to be of **Local** importance for its breeding farmland bird assemblage.
- 5.25 Hedgerows and woodland blocks on site provided breeding and/or foraging habitat for a variety of common and widespread generalist species. The assemblage recorded is typical of such habitat in the region and whilst the assemblage did include several notable species none are of conservation priority in Oxfordshire as all are deemed fairly common to abundant in the county. These included starling, song thrush, dunnoek, bullfinch and willow warbler. This coupled with the presence of several larger areas of similar woodland habitat nearby in the local area means the site is considered to be of **Local** importance for this assemblage.

Individual Species

- 5.26 Table 5 summarises the fourteen bird species recorded within the site that are of at least **Local** importance.
- 5.27 Lapwing is a formerly common resident breeder in Oxfordshire but numbers have since dwindled such that less than 10 pairs breed annually in the county. One pair was confirmed to be breeding within the site. The site is therefore considered of **County** nature conservation value for this species.
- 5.28 Other species of at least **Local** importance are considered so on the basis of their BoCC listing but do not regularly occur in county important numbers on the site.

- 5.29 The other breeding bird species recorded utilising the habitats within the site were either recorded in smaller numbers and/or considered common and widespread breeding species nationally and/or locally. These species are recognised as being of only **Site** importance.

Table 5: Birds of at least Local Importance

Name		Status		Nature Conservation Value
		WCA Sch.1	NERC S.41	
BoCC Red List				
Grey Partridge	<i>Perdix perdix</i>		+	Local
Lapwing	<i>Vanellus vanellus</i>		+	County
Skylark	<i>Alauda arvensis</i>			Local
Starling	<i>Sturnus vulgaris</i>		+	Local
Song Thrush	<i>Turdus philomelos</i>		+	Local
House Sparrow	<i>Passer domesticus</i>		+	Local
Yellow Wagtail	<i>Motacilla flava</i>		+	Local
Linnet	<i>Linaria cannabina</i>		+	Local
Yellowhammer	<i>Emberiza citrinella</i>		+	Local
BoCC Amber List				
Mallard	<i>Anas platyrhynchos</i>			Local
Kestrel	<i>Falco tinnunculus</i>			Local
Willow Warbler	<i>Phylloscopus trochilus</i>			Local
Duncock	<i>Prunella modularis</i>		+	Local
Meadow Pipit	<i>Anthus pratensis</i>		+	Local

6.0 DISCUSSION & RECOMMENDATIONS

- 6.1 The following section provides an assessment of the potential impacts upon breeding birds resulting from the proposed development. Where appropriate, recommendations are provided for mitigation and enhancement that take account of the likely ecological effects. Throughout the evaluation, any recommendations for mitigation have been informed by the most up-to-date indicative layout.
- 6.2 The proposed built development will comprise significant areas of green infrastructure (GI) and public open space, both formal and semi-natural in nature, bisecting the built areas and surrounding, particularly towards the west and north including woodland open grassland which will provide buffering of the nearby existing development and ample opportunities for habitat mitigation and enhancement measures to be implemented. Hedgerows are anticipated to be retained throughout wherever possible along with the existing small woodland blocks and will offer further opportunity for enhancement measures.
- 6.3 The recommendations below have been provided with the aim of informing development proposals on how to best maintain the conservation status of bird species present.

Impact Assessment for Breeding Birds

- 6.4 The potential impact of the loss or change of habitat upon breeding bird species arising from the effects of development is based upon an understanding of each species' ecological requirements, the type of development, number of birds recorded within the survey area, their nature conservation criteria based on legislation and current guidance, their county status according to *The Birds of Oxfordshire 2013* and professional judgement.
- 6.5 The following potential impacts to the recorded bird populations and assemblage may result from the proposals:
- Direct loss/change of breeding habitat
 - Disturbance during construction and/or operation

Habitat Loss

- 6.6 Development includes the loss of all the agricultural habitat within the site, although the majority of the semi-natural areas such as the existing watercourses and accompanying corridors, hedgerows and woodland blocks will be retained as part of the GI. There will be a small proportion of hedgerow losses in the context of that anticipated to be retained.
- 6.7 The individual species recorded on site that are arguably the most vulnerable to impacts from the habitat loss or changes associated with this proposed development include the 14 species considered to be of at least **Local** importance. These are notable species that are either specially protected, appear on the BoCC Red or Amber lists and/or are listed as a NERC priority species and/or were recorded in locally important numbers.
- 6.8 The loss of agricultural habitat without mitigation will lead to a total loss of suitable breeding habitat for lapwing within the Site, since this species require large open fields to breed successfully. This would result in a reduction in the breeding population of this species that is significant at a **County** level.
- 6.9 The loss of agricultural habitat will also impact the seven farmland specialists recorded on site considered to be of local importance (skylark, yellow wagtail, grey partridge, yellowhammer, linnet, kestrel and meadow pipit). The loss of large open fields will likely lead to a loss of skylark and yellow wagtail as probable breeders on site, since these species require this habitat for nesting. The proposals are therefore considered to result in a **Local Adverse** impact on these two species. The loss of agricultural habitat will also reduce the overall availability of foraging resources and probable/possible breeding habitat for grey partridge, yellowhammer, linnet, kestrel and meadow pipit. However, the retention of sizeable areas of scrub and grassland along the watercourse corridors and throughout the GI will maintain limited areas of suitable habitat for these species. Overall, it is therefore considered that the effects of habitat loss will have a **Minor Adverse** impact on these five species at a local level. The adverse impacts anticipated for the seven farmland specialists of local value is not expected to be significant since they were recorded in relatively small numbers and the severity of any adverse impact is reduced by the general abundance of similar suitable habitat in the immediate vicinity and in the wider landscape.
- 6.10 The retention of most of the hedgerows, standard trees and all woodland blocks will ensure that effects on breeding bird species reliant on this habitat type such as starling, song thrush, house sparrow, willow warbler and dunnock are minimised. Whilst effects of disturbance and increased fragmentation may lead to minor adverse effects in the short term, woodland, grassland and scrub

planting within the GI are likely to result in a **Local Beneficial** impact for these species long-term once the vegetation has matured sufficiently.

- 6.11 The retention of the watercourse corridors will lead to a **Negligible** impact on the limited assemblage of bird species utilising this habitat, which includes the notable Mallard.

Disturbance Impacts

- 6.12 Construction operations have the potential to disturb birds using the development area of the site for roosting, foraging, and breeding. Operations likely to disturb breeding birds include noise and displacement during vegetation clearance, initial ground works and some construction activities. During the breeding season disturbance may lead to nest desertion or the avoidance of the area and reduce the suitability of retained nesting areas, such as the retained hedgerows or woodland edge. Whilst there is some potential for breeding success to be reduced, this is not expected to affect the local conservation status of the majority of the bird species using the survey area for breeding.

- 6.13 The increase in domestic animals during the operational phase, particularly cats, may lead to an increase in the predation of small birds. Recent research is inconclusive as to the actual effect that domestic cats can have on wild bird populations. The RSPB website states that there is no clear evidence that cat predation is causing bird populations to decline. However, although some species may be more susceptible to predation than others, it is considered unlikely that the increased abundance of cats would alter the conservation status of any of the breeding bird populations present on the site, with retained hedgerows, scrub and grassland continuing to provide cover and screening from potential predators. It is therefore considered that any presence of domestic animals will be of **Negligible** significance.

Habitat Mitigation

- 6.14 Suitable mitigation/compensation measures will be required to address loss of breeding habitat for lapwing. Sufficient on-site mitigation is unlikely to be possible given the context of the proposals, since large areas of open land are required for this species. Therefore, adjoining or nearby off-site agricultural land could be utilised, ideally owned by one of the landowners within the Site. This arable land would then be managed under Section 106 agreement, involving the implementation of a lapwing mitigation strategy. This strategy would incorporate management such as appropriate cropping regimes of arable land, appropriate stocking rates of pastoral land and 'wetting' of fields in order to benefit breeding lapwing and encourage them to relocate locally. It is anticipated the implementation of such a management strategy would reduce the impacts of the proposals on lapwing to Negligible on a county level. Alternatively, where such measures cannot be implemented, financial contribution towards a suitable strategic farmland bird project in the local and wider area to secure the provision of suitable lapwing breeding habitat may be required.
- 6.15 To provide some mitigation for the loss of arable land as foraging habitat for the notable farmland specialists skylark, yellow wagtail, linnet, yellowhammer, kestrel, grey partridge and meadow pipit it is recommended that areas of relatively undisturbed, species-rich grassland are included within the GI, which will create alternative foraging opportunities for farmland birds through the provision of new resources and safe habitat. This grassland should include seed mixes specifically designed to provide foraging resources for birds and be cut after mid-July to allow plants to set seed. The use of fertilisers and pesticides should be avoided.

- 6.16 The provision of scrub planting and/or hedgerows throughout the GI and bordering other retained and new habitats will provide suitable nesting habitat for grey partridge, linnet and yellowhammer helping to partially mitigate the loss of breeding habitat, in addition to creating further nesting habitat for the more generalist species recorded. The planting should comprise a diversity of native species, preferably fruit and nut-bearing species. Recommended shrub species include, but are not limited to, hawthorn *Crataegus monogyna*, dog-rose *Rosa canina* agg., blackthorn *Prunus spinosa*, holly *Ilex aquifolium*, guelder-rose *Viburnum opulus*, and dogwood *Cornus sanguinea*.
- 6.17 Retained and newly planted hedgerows should include infrequently mown grassy margins on either side, to provide nesting and foraging for farmland birds.

Disturbance Mitigation

- 6.18 To avoid disturbance to breeding birds, ground and vegetation clearance works will be undertaken prior to the bird-breeding season (March to August, inclusive). If this is not possible, the area will be checked prior to removal of vegetation or ground works by an experienced ecologist. If active nests are found, vegetation will be left untouched and suitably buffered from works until all birds have fledged. Specific advice will be provided prior to undertaking the clearance. This would be a statutory requirement due to the protection of all nesting birds and their nests under the Wildlife and Countryside Act, 1981 (as amended). A suitably qualified ecologist would need supervise this.
- 6.19 Further mitigation measures are required regarding red kites as they are afforded special protection under Schedule 1 of the Wildlife and Countryside Act, 1981 (as amended) whereby it is an offence both to disturb adults during nest construction or in the vicinity of an active nest and to disturb dependent young, either intentionally or recklessly through taking insufficient care to avoid disturbance. Red kites were considered to be probable breeders within woodland blocks adjoining the site boundary in the northwest corner and along the northern boundary. Avoidance of disturbance from on-site construction works during the breeding season within a suitable buffer zone of active nests will therefore be required, dependent on the nature and location of works. Further details would be provided as necessary.

Enhancements

- 6.20 The inclusion of scrub, tree and hedgerow planting within the GI will provide further nesting habitat for the range of generalist species recorded within the site. This planting, together with that proposed within the development area, should complement the retained hedgerows and woodland and comprise native species, preferably those that are fruit or nut bearing. It would be expected that the inclusion of such planting schemes would have a **Local Minor Beneficial** impact on the woodland breeding bird assemblage.
- 6.21 Any attenuation or drainage features should seek to hold an area of permanent water, if at all feasible, to provide further wetland habitat for the assemblage of species recorded along the River Bure and the existing on-site watercourse corridors. Wetland grassland within the temporarily wet/inundated parts of the features, along with sensitive management, would provide valuable foraging habitat. The creation of new ponds specifically for wildlife would also be beneficial, planted with native marginal vegetation, including common reed *Phragmites australis*. If included this would provide good nesting opportunities for many species including some likely colonisers such as reed bunting *Emberiza schoeniclus* and sedge warbler *Acrocephalus schoenobaenus*. These recommendations would lead to a **Local Minor Beneficial** impact on the watercourse corridor assemblage of birds.

- 6.22 Additional enhancements that should be integrated with the on-going management of the site include the erection of a mixture of nest box types. The following provides details of suggested suitable nest box types :
- a) A mixture of small hole (26mm and 32mm) boxes placed along the retained habitat around the proposed development area to provide nesting opportunities for a range of tit species. These boxes generally have a high uptake rate.
 - b) Small open fronted nest boxes should be placed throughout the site especially on trees which support a climber such as ivy which provides a degree of concealment. These boxes typically attract robin and blackbird.
 - c) Stock dove nest boxes within the more established boundary habitats including mature tree standards.
 - d) Consideration should be given to the provision of nest boxes for urban birds within built areas, including house sparrow, house martin and swift all of which were observed around the site during the survey.
 - e) Consideration should also be given to the provision of kestrel boxes along retained woodland and standards within hedgerows to provide optimal breeding habitat adjacent to a new foraging resource for this species.

Appendix A: Breeding Bird Survey Results & EOAC Criteria for Categorisation of Breeding Status

Species: British Common Name	Species: Scientific name	Survey 1 19.04.21	Survey 2 12.05.21	Survey 3 10.06.21	Conservation Status & Protection	Breeding status ⁶
Mallard	<i>Anas platyrhynchos</i>	5	0	4	Amber List	Probable A, P, H
Grey Partridge	<i>Perdix perdix</i>	0	0	7	Red List NERC S.41	Probable P, H
Pheasant	<i>Phasianus colchicus</i>	4	2	1	Not Listed	Probable P, H
Red-legged Partridge	<i>Alectoris rufa</i>	0	10	4	Not Listed	Probable P, H
Swift	<i>Apus apus</i>	0	0	1 flyover	Amber List	Non- breeder F
Stock Dove	<i>Columba oenas</i>	0	3 flyovers	1 + 1 flyover	Amber List	Possible H
Woodpigeon	<i>Columba palumbus</i>	25 + 8 flyovers	35 + 30 flyovers	47 + 6 flyovers	Green List	Probable T, S, H
Collared Dove	<i>Streptopelia decaocto</i>	2 flyovers	1 + 2 flyovers	3 + 1 flyover	Green List	Probable A, S, H
Lapwing	<i>Vanellus vanellus</i>	4 + 9 flyovers	5 + 2 flyovers	5 + 3 flyovers	Red List NERC S.41	Confirmed FL, A, N, T, P, S, H
Herring Gull	<i>Larus argentatus</i>	0	0	2 flyovers	Red List NERC S.41	Non- breeder F
Lesser Black- backed Gull	<i>Larus fuscus</i>	2 flyovers	0	5 flyovers	Amber List	Non- breeder F
Sparrowhawk	<i>Accipiter nisus</i>	0	1 flyover	0	Green List	Non- breeder F
Red Kite	<i>Milvus milvus</i>	6	4	1 + 1 flyover	Green List WCA Sch. 1	Probable T, P, H
Buzzard	<i>Buteo buteo</i>	6	2	3 flyovers	Green List	Possible S, H
Great Spotted Woodpecker	<i>Dendrocopos major</i>	3	2	0	Green List	Probable A, T, H
Green Woodpecker	<i>Picus viridis</i>	2	2	0	Green List	Possible H
Kestrel	<i>Falco tinnunculus</i>	4	1	0	Amber List	Probable A, T, P, H
Jay	<i>Garrulus glandarius</i>	1	0	0	Green List	Possible H
Magpie	<i>Pica pica</i>	2 + 1 flyover	4 + 1 flyover	9	Green List	Probable A, H
Jackdaw	<i>Coloeus monedula</i>	5 + 1 flyover	3 + 5 flyovers	14 + 3 flyovers	Green List	Non- breeder UH, F

⁶European Ornithological Atlas Committee, 1979. *Categories of Breeding Bird Evidence*. European Ornithological Atlas Committee.

Rook	<i>Corvus frugilegus</i>	0	1 + 4 flyovers	180 + 9 flyovers	Green List	Non-breeder UH, F
Carrion Crow	<i>Corvus corone</i>	35 + 1 flyovers	2 + 2 flyovers	92 + 5 flyovers	Green List	Possible H
Blue Tit	<i>Cyanistes caeruleus</i>	52	18	13 + 2 families + 2 flyovers	Green List	Confirmed FL, A, T, P, S, H
Great Tit	<i>Parus major</i>	3	23	7	Green List	Probable A, T, P, S, H
Skylark	<i>Alauda arvensis</i>	14	7	17	Red List	Probable T, S, H
Swallow	<i>Hirundo rustica</i>	0	6 flyovers	5 flyovers	Green List	Non-breeder F
House Martin	<i>Delichon urbicum</i>	0	0	2 flyovers	Amber List	Non-breeder F
Long-tailed Tit	<i>Aegithalos caudatus</i>	0	5	1 + family	Green List	Confirmed FL, H
Willow Warbler	<i>Phylloscopus trochilus</i>	8	0	2	Amber List	Probable T, S, H
Chiffchaff	<i>Phylloscopus collybita</i>	14	4	7	Green List	Probable T, S, H
Blackcap	<i>Sylvia atricapilla</i>	2	10	9	Green List	Probable T, P, S, H
Lesser Whitethroat	<i>Curruca curruca</i>	0	3	0	Green List	Possible S, H
Whitethroat	<i>Curruca communis</i>	0	12	7 + family	Green List	Confirmed FL, A, T, S, H
Wren	<i>Troglodytes troglodytes</i>	16	25	29	Green List	Probable A, T, S, H
Starling	<i>Sturnus vulgaris</i>	6 + 5 flyovers	16 + 8 flyovers	74 + 18 flyovers	Red List NERC S.41	Confirmed FF, ON, FL, A, T, P, S, H
Song Thrush	<i>Turdus philomelos</i>	3	9 + 2 flyovers	2	Red List NERC S.41	Probable T, S, H
Blackbird	<i>Turdus merula</i>	12	31	25 + family + 1 flyover	Green List	Confirmed FL, A, T, P, S, H
Robin	<i>Erithacus rubecula</i>	9	27	11	Green List	Confirmed FL, A, T, S, H
Redstart	<i>Phoenicurus phoenicurus</i>	0	0	1	Amber List	Non-breeder M
House Sparrow	<i>Passer domesticus</i>	2	4	0	Red List NERC S.41	Possible H
Dunnock	<i>Prunella modularis</i>	8	14	13	Amber List NERC S.41	Probable T, P, S, H
Yellow Wagtail	<i>Motacilla flava</i>	0	0	2	Red List	Probable P, S, H

Pied Wagtail	<i>Motacilla alba</i>	1 flyover	6	1	Green List	Probable A, P, H
Meadow Pipit	<i>Anthus pratensis</i>	0	1	0	Amber List	Possible H
Chaffinch	<i>Fringilla coelebs</i>	26	29	26	Green List	Probable A, T, P, S, H
Bullfinch	<i>Pyrrhula pyrrhula</i>	0	0	1	Amber List NERC S.41	Confirmed FF, H
Greenfinch	<i>Chloris chloris</i>	2	5	9 + 1 flyover	Green List	Probable T, S, H
Linnet	<i>Linaria cannabina</i>	8 + 8 flyovers	3	5 + 4 flyovers	Red List	Probable P, S, H
Goldfinch	<i>Carduelis carduelis</i>	10 + 3 flyovers	10 + 5 flyovers	13	Green List	Probable A, T, S, H
Yellowhammer	<i>Emberiza citrinella</i>	0	5	7 + 1 flyover	Red List NERC S.41	Probable A, T, S, H
Total No. Species: 50		33	39	42		

Breeding Status evidence can be broken down into four sections, each with their own codes, as defined by the European Ornithological Atlas Committee:

Confirmed breeder

DD – distraction display or injury feigning

UN – used nest or eggshells found from this season

FL – recently fledged young or downy young

ON – adults entering or leaving nest-site in circumstances indicating occupied nest

FF – adult carrying faecal sac or food for young

NE – nest containing eggs

NY – nest with young seen or heard

Probable breeder - Evidence accumulated during the survey indicates that the bird species is breeding on site.

P – pair in suitable nesting habitat

T – permanent territory (defended over at least 2 survey occasions)

D – courtship and display

N – visiting probable nest site

A – agitated behaviour

I – brood patch of incubating bird (from bird in hand)

B – nest building or excavating nest-hole

Possible breeder - Evidence accumulated during the survey indicates that the bird species could be breeding on site, but the evidence is less conclusive than that obtained for probable breeders.

H – observed in suitable nesting habitat

S – singing male

Non-breeder

F – flying over

M – migrant

U – summering non-breeder

UH – observed in unsuitable nesting habitat

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Key

BoCC Red-Listed Species		BoCC Amber Listed Species	
P	Grey Partridge	BF	Bullfinch
HG	Herring Gull	HM	House Martin
HS	House Sparrow	K	Kestrel
L	Lapwing	LB	Lesser Black-backed Gull
LI	Linnet	MA	Mallard
S	Skylark	MP	Meadow Pipit
ST	Song Thrush	RT	Redstart
SG	Starling	SD	Stock Dove
YW	Yellow Wagtail	SI	Swift
Y	Yellowhammer	WW	Willow Warbler
		BoCC Green List Species	
		KT	Red Kite

Additional Protections

- Fly over only
- NERC Species of Principle Importance
- Schedule 1 Species

Breeding Status

- ☐ Confirmed Breeder
- ☐ Probable Breeder
- ☐ Possible Breeder
- ☐ Non-breeder

client: Hallam Land Management
 project: NW Bicester, Oxfordshire
 drawing title: BREEDING BIRD SURVEY RESULTS - LOCATIONS OF NOTABLE SPECIES
 scale: 1:7000
 drawing / figure number: **Figure 1**
 drawn: OJB
 issue: 6/9/2021
 rev: -

