

Growing Baldock

Environmental Statement Volume 2: Figures & Appendices

Chapter 11: Ecology

Appendix 11.6 Corn Bunting Mitigation Sites Assessment



LAND TO THE EAST AND SOUTH OF BALDOCK

Assessment of Corn Bunting Mitigation Sites

BMD.21.0045.RPE/TN.810.A

DATE: AUGUST 2025

Assessment of Corn Bunting Mitigation Sites

Land to the east and south of Baldock, Herts.

Technical Note

Project: 21.0045 **Ref:** BMD.21.0045.RPE/TN.810.A
Subject: Report on corn bunting mitigation sites **Date:** August 2025
Status: FOR PLANNING **Rev:** A

Originated
JP

Technical reviewed
JW

Approved
JP

BACKGROUND

Client Urban&Civic plc
Consultant Bradley Murphy Design Ltd.

SITE

Location..... Land to the east and south of Baldock, Hertfordshire
National Grid Reference... Approx. centre: TL 25319 34539
Over-view The Site is approximately 220 ha in total however is largely dissected by a railway running east west through the middle of the Site effectively creating a northern and southern portion of the Site. Two small sections of the railway, however, fall within the northern section of the Site, partially connecting it to the southern area at two locations. The northern area comprises approximately 144 ha. The southern area comprises approximately 76 ha. The northern area of the Site is composed of land parcels to the north and south of Bygrave Road/Ashwell Road in Baldock, Hertfordshire, centred at Ordnance Survey National Grid Reference TL 25369 34942. The northern section is bound to the south by the railway, with two small sections of the railway line falling within the Site boundary. It comprises a combination of arable fields and grazed pasture, with a mixture of residential and farm buildings located along Bygrave Road. North and east of the Site is dominated by farmland, with the town of Baldock located to the south-west. To the west, beyond North Road, is Ivel Springs LNR, Blackhorse Farm Meadow LWS and Ivel Springs, Norton Road LWS. The southern section of the Site is located to the east of the town of Baldock in Hertfordshire and is centred at Ordnance Survey National Grid Reference TL 25643 33923. The Site comprises arable fields with occasional boundary hedgerows, with a mixture of residential and farm buildings. It is largely bound by a railway line to the north, the A505 to the south and east with the residential areas of Clothall Common and Baldock to the west.

Landscape context The Site is situated on the eastern extent of the town of Baldock. As such, the Site sits within a transitional landscape, with an agricultural field matrix to the north, and an urbanised area characterised by residential developments with occasional industrial use to the south and southwest.

DEVELOPMENT & PLANNING BACKGROUND

Declaration of compliance with professional code of ethics or conduct

The information which we have prepared and provided is true and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bonafide opinions.

All reasonable efforts have been made to comply with current legislation and best practice, including BS 42020:2013, the Environment Act 2021 (Schedule 7A: Biodiversity Gain), the National Planning Policy Framework (2025), CIEEM EcIA Guidelines (2018, updated 2022), and relevant Natural England guidance.

Proposed works.....	Outline planning application with all matters reserved except for means of highway access into the development from the A505/Royston Road, North Road and Clothall Road ;, for up to 3,200 homes, up to 16ha of employment, waste and leisure infrastructure, a mixed use local centre, up to 1 secondary school, up to 2 x primary schools, up to 1 SEND school, health hub, green infrastructure (including parks, formal sports provision, play, habitat areas, informal open space and structural planting), internal street network, access junctions and railway crossing, public transport infrastructure, pedestrian/cycle network (including PRow diversions, active travel routes, mobility hubs and crossing of the railway), utilities and drainage infrastructure (including diversions of existing and provision of new infrastructure, pumping stations, sustainable drainage, primary substations, rising main/strategic sewer and renewable energy infrastructure), ground remodelling/earthworks and any necessary demolitions.
Planning stage.....	Outline Planning Application
ASSESSMENT	
Date.....	March 2023
Assessor.....	Jeff Picksley MCIEEM, experienced ornithologist.

This technical note has been prepared to set out the findings of two days of survey across three of the mitigation areas previously surveyed by WYG. The three sites surveyed in June 2023 were land known as potential park, Ashwell End and Hinxworth and are shown in Appendix A. The areas covered in the 2023 field surveys were the same as those set out in the 2019 WYG report. The sites selected for survey in 2023 are the three mitigation areas located closest to the proposed development site.

1. INTRODUCTION

1.1 The Site

Historic Context

- 1.1.1 Readily available historic aerial imagery and maps indicate that the Site has largely remained in its current state of arable land with the surrounding landscape largely being used for agricultural purposes since at least the late 18th century. The surrounding landscape has also remained largely unchanged from its 19th century landscape character, with the exception of localised urban expansion of inhabited areas surrounding the Site; most notably the town of Baldock and city of Letchworth to the southwest, the town of Stotfold to the northwest. The surrounding habitats have also seen changes with the removal of woodland parcels for further agricultural land occurring throughout the 19th century.

Present Context

- 1.1.2 The Site is approximately 220 ha in total however is largely dissected by a railway running east west through the middle of the Site effectively creating a northern and southern portion of the Site. The northern area comprises approximately 144 ha. The southern area comprises approximately 76 ha.
- 1.1.3 The northern area of the Site is located within the north of Hertfordshire, approximately 7.6 km north of the borough of Stevenage, at the north-eastern extent of the market town of Baldock. The Site is dissected by the Cambridge Train Line which splits the Site into a northern and southern area. Two small sections of the railway line, however, fall within the northern section of the Site, partially connecting to the southern area of the Site.
- 1.1.4 The train line running through the centre of the Site borders the northern area of the Site to the south, with two small sections of the railway line falling within the northern section of the Site; North Road to the west and chiefly agricultural land to the north and east. Several residential avenues, pathways, gardens and homes are also present within the vicinity of the Site boundaries, particularly along the southwest border of the Site.
- 1.1.5 The Bygrave Road runs southwest-northeast within the centre of the northern area of the Site, dividing arable farmland. Multiple footpaths run within the north Site's boundaries, connecting to North Road, Bygrave Road and multiple residential pathways. There are also some urban features within the Site, such as the roundabout connecting the B656 and A505 to the northeast of the Site. The surrounding landscape, with the exception of the town of Baldock to the southwest, has a commensurate character to that within the Site: agricultural land, chiefly arable, interspersed by residential pockets, roads and hedgerows. The residential areas surrounding the Site are all primarily associated to the town of Baldock situated to the southwest of the Site and the village of Bygrave approximately 1 km northeast of the Site.
- 1.1.6 In the southern area of the Site the A505 (Royston Road) borders the Site from the south to the northeast; the Cambridge Train Line to the north; Wallington Road to the west and the Ashville

Trading estate at the northwest border—several residential avenues, gardens and homes are also present within the vicinity of the Site boundaries.

- 1.1.7 The A507 (Clothall Road) runs southwest-southeast along the southern section of the Site, dividing arable farmland within the Site. Multiple footpaths run within the southern areas boundaries, connecting to the B656, Wallington Road and multiple residential areas. There are also some urban features within the Site, such as the roundabout connecting the B656 and A505 to the northeast of the southern area. The surrounding landscape, with the exception of the town of Baldock to the southwest, has a commensurate character to that within the Site: agricultural land, chiefly arable, interspersed by residential pockets, roads and hedgerows. The residential areas surrounding the Site are all primarily associated to the town of Baldock situated to the southwest of the Site and the village of Bygrave approximately 1.3km northeast of the Site.
- 1.1.8 Considering the outlined above contextual features regarding the Site and its surrounding landscape, while there is some overland connectivity of the Site to its adjacent habitats, particularly from the north, the presence of multiple dispersal barriers within the vicinity, including highways and rail lines, is deemed to leave dispersal capacity of terrestrial fauna to/from the Site as moderate. It is further estimated that more mobile species, such as bats, birds, and insects, would be more readily able to commute to the Site from surrounding habitats.

Ecological context

- 1.1.9 WYG carried out a suite of breeding bird surveys in 2017 (WYG, 2017a and WYG, 2017b). The Site was found to support a population of corn bunting considered to be of County importance. Other farmland birds were also recorded and this assemblage was also considered to be of County level importance.
- 1.1.10 In 2019 the ecological appraisal was updated along with a series of species-specific assessments including corn bunting and reptile reports which were produced between 2019-2020. These reports are as follows:
- Baldock North - Updated Ecological Appraisal (2019a);
 - Baldock Southeast - Updated Ecological Appraisal (2019b);
 - Baldock Reptile Survey Report (2019c);
 - Baldock Southeast - Bat Activity Report (2020a); and
 - Baldock North and Southeast - Corn Bunting Report (2020b).
- 1.1.11 No further previous ecological surveys or assessments are known for the Site or adjacent land.

2. BACKGROUND

- 2.1.1 Two previous surveys have been undertaken of possible sites to use for corn bunting mitigation to mitigate impacts of the potential development of land to the east of Baldock, north of the A505. WYG have undertaken surveys of five potential mitigation sites in 2017 and 2019 to determine the current breeding population of corn bunting on the five mitigation sites and identify potential enhancement measures that could be undertaken.
- 2.1.2 The surveys of off-site agricultural land is required to assess the potential of these sites to deliver mitigation for corn bunting affected by the proposed development. It is considered likely that some of the green space within the proposed development will provide breeding habitat for corn bunting (based on the results of breeding bird surveys undertaken in 2022). However, given the proposed development will result in the loss of extensive areas of mixed farmland it is considered unlikely it will be possible to fully mitigate the effects of habitat loss within the development boundary.
- 2.1.3 The results of the 2019 WYG survey have been used as the previous baseline for the assessment of change in site conditions and populations of breeding corn bunting between the 2019 and 2023
- 2.1.4 Based on the results of surveys of the development site it is anticipated that corn bunting will continue to breed around the margins of the developed Site and are likely to use suitable habitat within the Site for breeding if available. Field data would suggest that around 50% of corn bunting territories will be lost due to the proposals (these are territories that are located largely within the development boundary. The remaining 50% of territories are located towards the periphery of the Site and could potentially be retained.
- 2.1.5 Current proposals for the development Site include the provision of extensive areas of rough calcareous grassland and scattered scrub on the northern and eastern edges of the Site, along Clothall Road to the west and the retention of Clothall Common (which supports breeding corn bunting). The grassland and scrub habitats adjacent to off-site arable land are considered likely to be able to support corn bunting populations post-development.
- 2.1.6 The off-site mitigation sites will remain as working farms. The mitigation proposals are designed to enhance the current condition of these sites to increase the number of breeding corn bunting and improve breeding success. The mitigation measures can be implemented alongside normal agricultural practices.

3. RESULTS OF PREVIOUS BREEDING BIRD SURVEYS

3.1.1 WYG have undertaken breeding bird surveys of the mitigation sites in 2017 and 2019. Table 3.1 sets out the results of the breeding bird surveys from 2017 and 2019 for the three sites resurveyed in 2023.

Table 3.1 Results of 2017 and 2019 breeding bird surveys (surveys undertaken by WYG).

	Potential Park 2017	Potential Park 2019	Ashwell End 2017	Ashwell End 2019	Hinxworth 2017	Hinxworth 2019
Corn bunting territories	12	5	4	7	3	6
Dunnock territories	NR	0	NR	0	NR	3
Grey partridge territories	NR	1	NR	0	NR	0
Linnet territories	NR	2	NR	1	NR	3
Meadow pipit territories	NR	2	NR	0	NR	0
Reed bunting territories	NR	1	NR	0	NR	1
Skylark territories	NR	6	NR	7	NR	4
Yellowhammer	NR		NR	11	NR	6
Yellow wagtail	NR	1	NR		NR	

3.1.2 The 2019 surveys comprised three survey visits (once a month) between May and July. The WYG report sets out the number of corn bunting territories based on the territorial activity recorded during the three field visits. The surveyors also recorded territorial activity of other scarce farmland birds during the surveys.

4. SURVEY METHODOLOGY FOR 2023 SURVEYS

4.1.1 The 2023 survey comprised two visits to each site undertaken on consecutive mornings on the 26th and 27th June 2023. The sites were visited in reverse order on the second day to ensure the site survey latest on the morning of 26th June was surveyed first on the 27th June. The transect route was also reversed for each survey to vary the time the day each part of the site was visited. All the surveys were concluded before 12:00 except for Ashwell End on 26th June.

4.1.2 The sites were surveyed following a transect that broadly followed the edge of the fields that bounded the sites as during the 2019 WYG surveys. Where access into parts of the site via roads, farm tracks or public rights of way was possible these routes were used at the discretion of the surveyor to ensure the sites were adequately covered. Table 4.1 sets out the dates, times and weather conditions for the surveys undertaken in June 2023.

Table 4.1 Dates, times and weather conditions of corn bunting surveys undertaken in June 2023.

	Potential Park	Potential Park	Ashwell End	Ashwell End	Hinxworth	Hinxworth
Survey date	26/06/23	27/06/23	26/06/23	27/06/23	26/06/23	27/06/23
Survey time	04:55-06:30	10:05-11:20	09:45-12:30	04:45-07:30	07:00-09:30	07:30-09:30
Weather conditions	Sunny throughout survey.	Hazy sunshine becoming overcast	Sunny spells and warm.	Sunny at start becoming overcast. Increasingly warm.	Sunny and warm. High cloud	Sunny spells becoming increasingly warm
Cloud cover	0/8 throughout	6/8 at start, 8/8 by finish	5/8-6/8	3/8 at start increasing to 7/8 by finish.	2/8 increasing to 6/8	6/8-7/8
Wind direction	W-NW	WSW-W	NW	WSW	W-NW	WSW-W
Wind speed	BF4-5	BF3-4	BF4	BF0-2	BF4	BF2-3

4.1.3 All corn buntings encountered were identified either visually or from vocalisations. A record of other amber and red list farmland birds was also taken during the surveys. Behaviour was recorded on maps of the site that were later assessed to allow breeding territories to be determined. Activity indicative of breeding behaviour such as singing males, alarm calling, birds carrying food or nesting material was mapped during the field surveys. Direct searches for nests were not undertaken unless the surveyor considered a brief search would not cause undue disturbance and may allow breeding to be confirmed.

5. ASSESSMENT OF 2023 SURVEY FINDINGS

- 5.1.1 The 2023 survey provides a 'snapshot' of the status of breeding corn bunting on the three potential mitigation sites surveyed. Corn bunting breed late in the season compared to some other passerine species and the survey was timed to coincide with a period of the year when birds were likely to be feeding young and breeding could be confirmed.
- 5.1.2 Accurately determining the number of breeding corn bunting on a site is complicated by the complex breeding behaviour of this species. Studies of the breeding ecology of corn bunting have found that the proportion of unmated males in a breeding population can range between 9 and 23% and first year males will hold territory for part of the breeding season. Although a significant proportion of male corn buntings are monogamous a proportion of the population is polygynous, with some males having 2 or 3 nesting females within their territory.
- 5.1.3 The location of singing males was plotted on both survey days, in addition to any other behaviour. Male corn bunting singing from the same part of the site on both days were recorded as confirmed territories. Males recorded singing from the site on one day only were recorded as potential territories. Where singing males were recorded in close proximity to each other, concurrent singing was used to define territories and ensure that birds moving between song posts were not erroneously recorded as different birds.
- 5.1.4 Due to the limited nature of the 2023 survey the number of territorial males recorded can only be treated as an approximate number of birds present. Some territorial birds may have been missed, particularly those where only part of the territory overlaps with the mitigation site. Birds recorded using song posts on the periphery of the site may have the bulk of their territory off-site but for the purposes of this assessment they are assumed to be within the site.

Results Of 2023 Survey

- 5.1.5 Table 5.1 sets out the results of the corn bunting survey undertaken in June 2023. The number of singing male corn buntings is shown as follows: (3:1:4). The first number is the number of confirmed territories (singing male recorded in similar area of the site during both surveys); the second number is the number of probable territories (singing male recorded on one survey only); the final number in bold is the total number of corn bunting territories (confirmed and probable). Numbers followed by an asterix indicates species where breeding was confirmed (birds carrying food, fledged juveniles seen etc).

Table 5.1 Results of 2023 breeding corn bunting survey.

	Potential Park 2023	Ashwell End 2023	Hinxworth 2023
Corn bunting territories	5:0:5*	6:2:8*	5:1:6
Duncock territories	1	3	4
Grey partridge territories	1	1	0
Linnet territories	1	1	1

Meadow pipit territories	2	0	0
Reed bunting territories	0	0	0
Skylark territories	4-5*	10	3*
Yellowhammer	0	6*	4-5*
Yellow wagtail	1*	3*	1-2*

5.1.6 Table 5.1 also shows the number of potential territories of other red and amber list farmland birds recorded during the surveys. As with the results of the corn bunting surveys the assessment of territories is based on a 'snapshot' taken during the middle of the breeding season. The results for other farmland species should not be considered definitive but rather as an indication of the range of species present on each site.

5.1.7 In addition to the species included in Table 5.1, the following red and amber list species were recorded displaying territorial activity at Hinxworth: stock dove, common whitethroat, wren, song thrush, greenfinch and a reed bunting just beyond the site boundary. Red and amber list species recorded displaying territorial activity at Ashwell End were: common whitethroat, wren, greenfinch, kestrel and song thrush. Red and amber list species recorded displaying territorial activity at the potential park were: common whitethroat, greenfinch and house sparrow.

5.1.8 Cropping patterns are likely to influence the distribution of corn bunting territories within the sites surveyed. A note of the main crop types was recorded as part of the survey work. Cropping at Ashwell End was a mix of wheat and field beans with small areas of grassland. Cropping at Hinxworth was a mix of wheat, barley, field beans, peas, maize and a small area of set-aside. Cropping at potential park was a mix of field beans, ploughed land, areas of wildflower mixes, barley and wheat.

Assessment Of Survey Results

5.1.9 Table 5.2 below shows the number of corn bunting territories recorded at each of the mitigation sites during the three years of survey. The table shows that the number of corn bunting territories across the three mitigation sites is virtually unchanged between the 2019 and the 2023 surveys.

Table 5.2 Number of corn bunting territories recorded in 2017, 2019 and 2023.

	Potential Park 2017	Potential Park 2019	Potential Park 2023	Ashwell End 2017	Ashwell End 2019	Ashwell End 2023	Hinxworth 2017	Hinxworth 2019	Hinxworth 2023
Corn bunting territories	12	5	5	4	7	8	3	6	6

5.1.10 Cropping at the potential park site was very similar in 2023 to 2019 with the site sown with field beans and barley in 2019 and the areas sown with wildflower mixes recorded in 2019 still present. Cropping at Ashwell End in 2019 was entirely wheat. The situation was similar in 2019 with the

majority of the fields under wheat with the exception of two fields sown with field beans. Cropping at Hinxworth in 2019 was mainly oilseed rape with one field of wheat and one of field beans. Cropping patterns were very different in 2023 at this site with a large part of the site sown with wheat, two areas sown with field beans, two fields of barley and small areas under maize and peas.

- 5.1.11 As shown within Appendix A, the distribution of corn bunting territories in the potential park showed little variation between 2019 and 2023. The location of some of the territories recorded is almost identical between the two surveys suggesting that male corn buntings were using the same song posts to defend territories in both years. The very similar cropping pattern may also have a role to play in influencing the distribution of territories on this site.
- 5.1.12 As shown within Appendix A, the distribution of corn bunting territories at Hinxworth did not vary significantly between the 2019 and 2023 surveys. As with the potential park site the distribution of singing male corn buntings is very similar suggesting that territorial males are selecting similar song posts to defend territories each year. Bird at this site do not appear to have responded to the changes in cropping patterns. The territory on Hinxworth Road noted in 2023 is the only significant change in territory distribution noted between 2019 and 2023.
- 5.1.13 As shown within Appendix A, the significant change in the distribution of corn bunting territories at Ashwell End between 2019 and 2023. In 2019 corn bunting territories were distributed fairly evenly across the site with four territories recorded around Ashwell End and three to the north. In 2023 all the corn bunting territories were recorded in a concentrated area north of Ashwell End along Love Lane up to New Barn. The birds were utilising a field of wheat and a field of field beans with male corn bunting singing from the overhead wires that cross the fields and run along Love Lane and well as from the hedgerow to the north-east of Abtree Farmhouse. Only one potential corn bunting territory was recorded to the south of Ashwell End on Hinxworth Road.
- 5.1.14 Cropping patterns were not significantly different between the 2019 and 2023 surveys at Ashwell End, with two fields of field beans replacing wheat in 2023. The corn bunting territories in 2023 were concentrated around a single field of wheat.
- 5.1.15 The 2023 surveys demonstrated that the number of corn bunting territories across the three potential mitigation sites have remained largely unchanged since the 2019 WYG survey. The only significant change recorded was a noticeable concentration in the distribution of corn bunting territories at Ashwell End in 2023 compared to the distribution of territories recorded in 2019. This change in the distribution of territories is assumed to relate to specific habitat conditions making the fields adjacent to Love Lane particularly attractive to corn bunting in 2023. As the rest of the Ashwell End site appears to remain suitable for breeding corn bunting there must be some subtle factors influencing territory selection that are not immediately apparent during surveys.

6. MITIGATION PROPOSALS

- 6.1.1 The following section sets out the mitigation and enhancement measures set out in the 2019 WYG report and review these against the findings of the 2023 survey to determine if these remain appropriate. The assessment of mitigation proposals also considers published research relating to successful habitat management techniques or breeding behaviour that may inform the development of a mitigation package.

Mitigation proposals – WYG report 2019

- 6.1.2 The 2019 mitigation report produced by WYG recommended the sowing of wildflower mixes along the eastern and western site boundaries to provide suitable nesting and foraging opportunities for corn bunting. At Ashwell End it recommended providing field margins around the edges of the two largest fields within the site to provide foraging and nesting opportunities for corn bunting. A similar recommendation of the provision of field margins, particularly around the edge of the largest field, is provided for Hinxworth.
- 6.1.3 The report recommends that field margins are at least 5 metres wide and planted with a wildflower mix, with beetle banks established within the margins. Hedgerows adjoining field margins should be reduced to a height of less than 5 metres.
- 6.1.4 The WYG report also identifies a number of crop management measures that could be provided to bolster the breeding corn bunting population. These include treating crops with pesticides only when crop damage reaches economically unacceptable levels, harvesting crops as late as possible in the year, leaving stubble as an over-wintering food source for corn bunting and double-drilling strips of crops through the middle of cereal fields.

Potential mitigation measures

- 6.1.5 Research by Setchfield and Peach (2016) has found that the density of crop tillers (the part of the plant bearing the reproductive stem) is a strong predictor of corn bunting nest selection. The research also identified that due to the current method of sowing seed, overlaps (termed operational double-drilling) occur close to field margins (15-30m) and these areas are disproportionately favoured by nesting corn bunting. Nest survival is subject to a strong crop edge effect and re-nesting rates increased with mean tiller density in the surrounding crop. The research found that because operational double drilling creates areas of high tiller density close to field edges, corn buntings select areas within the fields where nest survival is low.
- 6.1.6 The lack of invertebrate food to enable adult corn bunting to feed young has been identified as a major factor leading to the collapse of the Schleswig-Holstein population in Germany. Studies in England have shown that invertebrates fed to corn bunting nestlings in southern England have declined in abundance on lowland farms (Aebischer and Ward, 1997). Studies of foraging corn buntings in southern England found birds preferentially selected grassy field margins, spring-sown barley, unintensified grassland or set aside (Brickle, Harper, Aebischer and Cockayne, 2001). The same study found that insect densities (of the four main invertebrate groups fed to corn bunting chicks) were highest in unintensified grassland and field margins.

- 6.1.7 The study also found that the mean foraging distance from nests was 115m with only 10% of distances over 230m. A study on North Uist found 95% of foraging trips were within 100m of the nest for males and 120m for females (Hartley and Shepherd, 1997).
- 6.1.8 A variety of crop types appears to be important to nesting corn bunting as nesting preferences vary within the breeding season (Perkins, Maggs and Wilson, 2015). This study found that during May and early June almost two-thirds of nests were in forage grasses and autumn-sown cereals, but by mid-July to August two-thirds of nesting attempts were initiated in spring cereal fields. Nesting attempts in rough grassland did not vary seasonally. As with Setchfield and Peach fields with tall, dense sward were selected for nesting, with birds favouring high sward density over sward height. The study also found female corn buntings nested in cereal fields with an abundance of weed species.
- 6.1.9 Winter food sources are also important to corn bunting survival with adults feeding in mainly on cereal grains during winter, supplemented by seeds from Polygonaceae and wild grasses (Brickle and Harper). Although over-wintered stubbles can provide some of the cereal grain increased efficiency of seed collection during harvest significantly reduces the availability of seeds across the winter period. Other sources of grains such as cattle feeders and game feeders can be used over the winter period by corn bunting.
- 6.1.10 It is recommended that the mitigation proposals identified by WYG in 2019 are adapted to provide greater emphasis on the provision of double-drilled lengths of crops within the centre of fields across the three mitigation sites. These double sown strips should be provided in fields of both autumn and spring sown cereals and positioned towards the centre of the fields selected. Assessment of the fields within the mitigation areas shows that there are four fields at Ashwell End, three at Hinxworth and two at the potential park which would easily accommodate such measures. Some smaller fields could also accommodate short lengths of double sown cereals towards the centre of the fields.
- 6.1.11 The WYG suggestion of sowing wildflower mixes around field margins appears to be targeted at providing increased habitat for invertebrates, the abundance of which is a key element influencing chick survival. The research by Setchfield and Peach highlights the risk of establishing suitable nesting habitat for corn bunting around the margins of fields i.e. wildflower strips creating an ecological trap where corn buntings are attracted to nest in edge habitats where nest failure rates are higher.
- 6.1.12 In practice it is considered that this could be avoided by keeping the maximum width of the sown areas to 5m wide, meaning the areas sown with grassland strips around the margins would be too small to provide suitable nesting habitat but would be sufficiently close to optimal nesting sites provided through double-drilling of crops to be used by foraging adults. It is recommended that wildflower margins are provided in fields where double-drilling is undertaken to maximise benefits.
- 6.1.13 To ensure over-wintering food sources are available it is recommended that small areas of cereal within each field are left uncut and remain as a standing crop over the winter. These uncut areas will provide a sources of grains for winter corn bunting. The average UK wheat yield in the UK

was 7 tonnes per ha in 2020, the average yield from barley during 2020 was 5.9 tonnes per ha (DEFRA statistics). As these yield figures show providing a sacrificial area of 0.5ha to leave unharvested with each mitigation area would provide around 3-3.5 tonnes of cereal grain as an overwintering food source.

- 6.1.14 A post-harvest visit to the mitigation sites was undertaken in early August (8-9 August) 2022. Corn bunting were only recorded at Ashwell End during this survey and only a single bird was noted. Although the duration of the survey in 2022 was limited and did not cover the main winter period, the findings may indicate that the mitigation sites do not support over-wintering corn bunting and the provision of habitat that provides food sources over the winter may encourage birds to remain on site.
- 6.1.15 The option of leaving the double-drilled sections of the fields unharvested could also be implemented. These areas would be providing tillers at a higher density than the surrounding crop meaning a higher yield could be produced using a smaller area of land. These areas could also be left untreated with herbicides during the growing season, reducing management costs and provide alternative seed sources for breeding and wintering corn bunting.
- 6.1.16 Double sown strips in cereal crops are likely to harbour active corn bunting nests (due to crop tiller density) at the time harvesting is due to take place. The retention of these strips to provide a source of grain over the winter would also reduce the risk of active nest or young birds being destroyed by harvesting operations. The provision of double-drilled sections within fields is not likely to be effective in bolstering corn bunting numbers through increased breeding productivity unless harvesting is delayed to allow breeding to be completed.

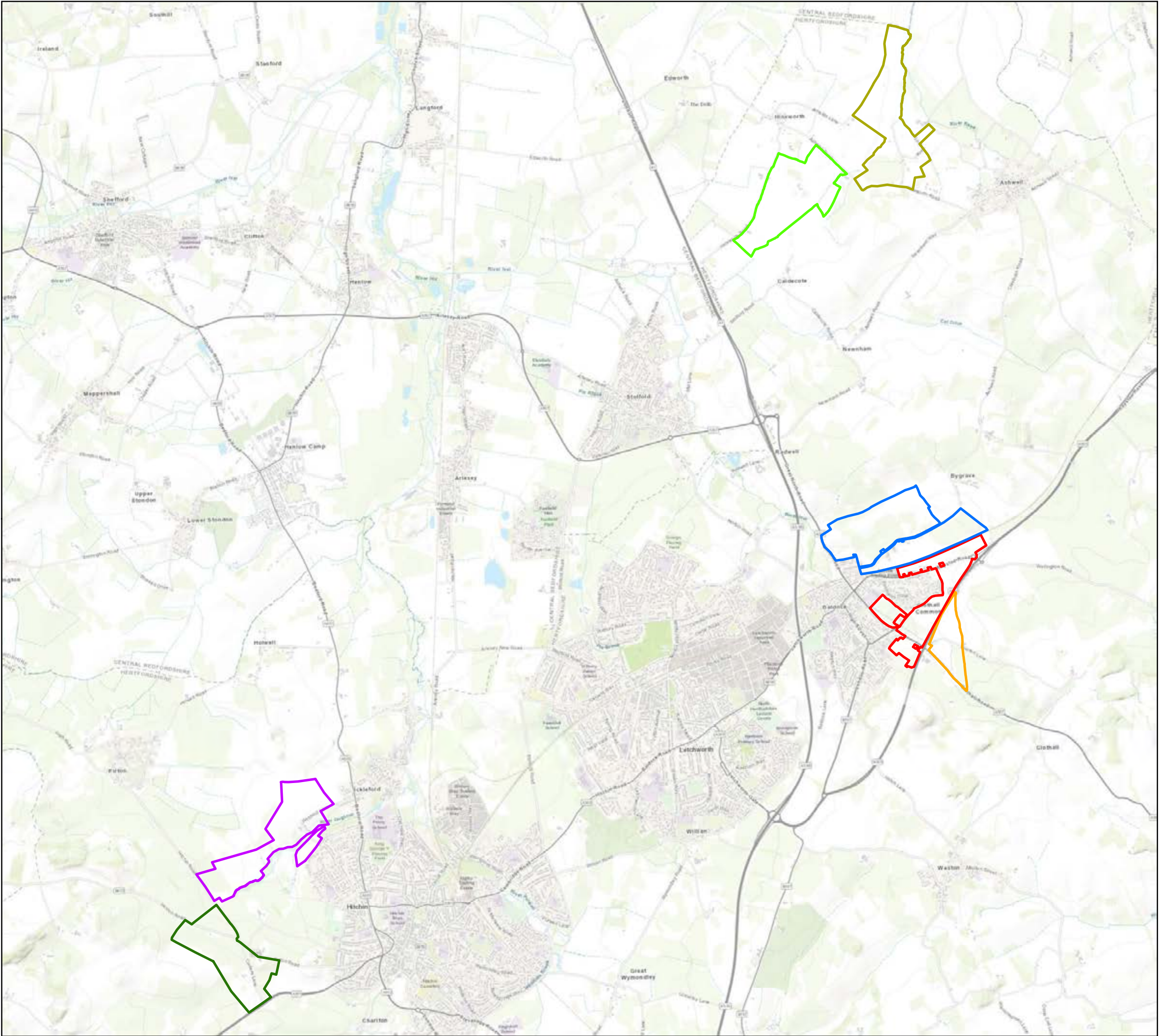
7. CONCLUSIONS

- 7.1.1 The 2023 corn bunting survey of three of the potential mitigation sites has shown that all three continue to support a similar number of territorial males to when the last survey was undertaken in 2019. With the exception of Ashwell End, where the distribution of territorial males was concentrated to a small section of the site, the distribution of territorial corn buntings across the sites was similar in both 2019 and 2023.
- 7.1.2 It is recommended that, based on published research, mitigation measures aimed at increasing the number of breeding corn bunting on the mitigation sites and enhancing breeding success are focussed on the provision of double drilled strips of cereals in the centre of fields. It is also recommended that over-winter food sources are provided in the form of areas of sacrificial cereal crops are provided to enhance over-wintering survival rates and provide a stable food source for the post-breeding corn bunting population.
- 7.1.3 To minimise the financial burden and operational impacts on the farmers of these measures it is recommended that the double-sown strips are treated as the sacrificial element of the crop and do not have any herbicides applied to them post sowing. This will limited the area of land that needs to be removed from convential arable cultivation to provide mitigation and also benefit corn buntings by allowing weeds to establish in these double sown strips.
- 7.1.4 It is also recommended that in fields where double sown strips are provided that strips of grassland 5 metres wide are provided around the margins of the fields. These strips will provide foraging habitat for provisioning corn buntings and should support higher densities of the main invertebrate groups corn bunting provision young with than the surrounding arable crop. These strips will also be within the typical foraging zone around nest sites for used by adult corn buntings with young.
- 7.1.5 Although underpinned by published research, it is recognised that the suggested mitigation measures are unproven in terms of their effectiveness and there will be a requirement for monitoring to evaluate the success of the mitigation package

8. REFERENCES AND BIBLIOGRAPHY

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- WYG, (2020b), Bat Activity Report, Baldock North, Report on behalf of Hertfordshire County Council, Project number A090700-171-2
- WYG, (2020d), Baldock Mitigation Sites, Report on behalf of Hertfordshire County Council, Project number A090700-171-2

A. PLANS



Rev	Date	Notes
A	07/10/20	Initial map production

Legend

- North site boundary
- Southeast site boundary
- Potential play area site boundary
- S17 Offley site boundary
- S18 Westmill Farm site boundary
- S25 Hinxworth site boundary
- S22 Ashwell End site boundary

0 500 1,000 2,000 Metres



Mitigation Sites

Baldock
Hertfordshire County Council

Scale at A3: 1:50,000	Project No: A090070-171-2	Drawing No: Figure 1	Revision: A
Drawn by: Ben Blowers	Drawn date: 08/10/2020	Approved by: Marc Anderton	

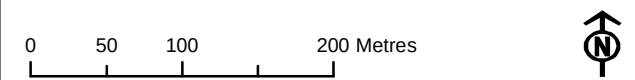
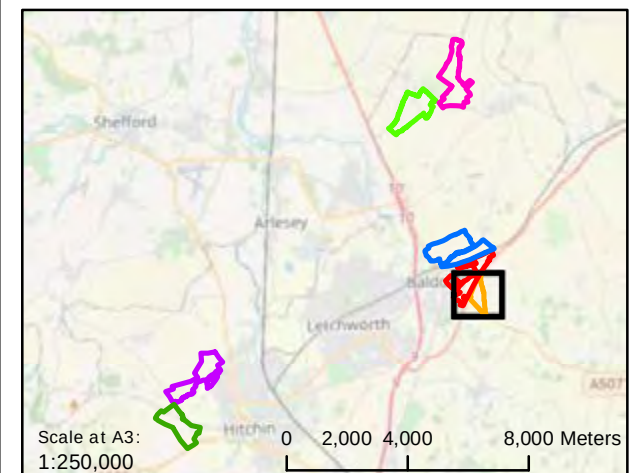
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Rev A	Date 08/10/20	Notes Initial map production
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Legend

-  Potential park area site boundary
 Southeast site boundary
 Corn bunting territory

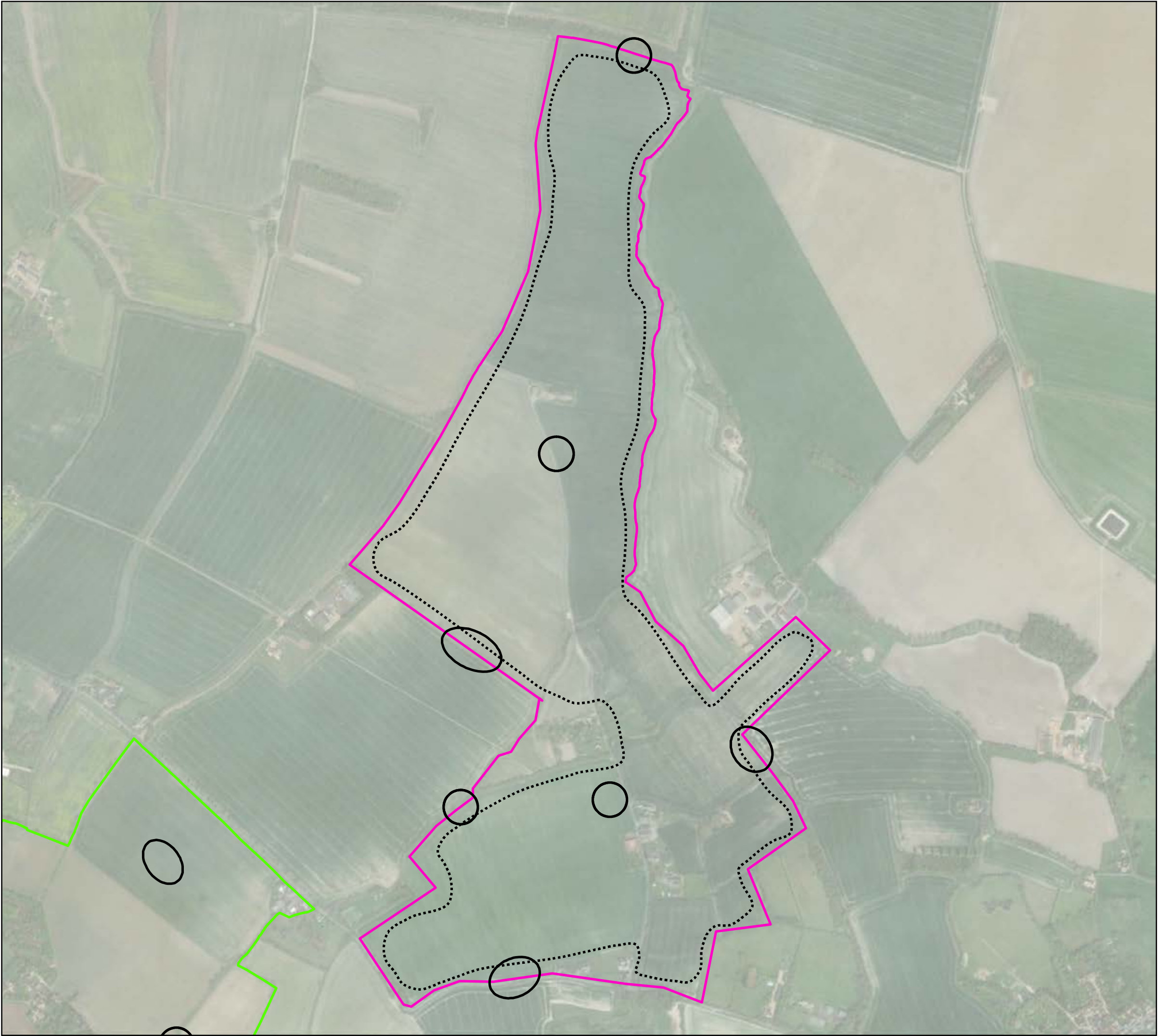


Corn Bunting Territories in Potential Park Mitigation Area

Baldock
Herefordshire County Council

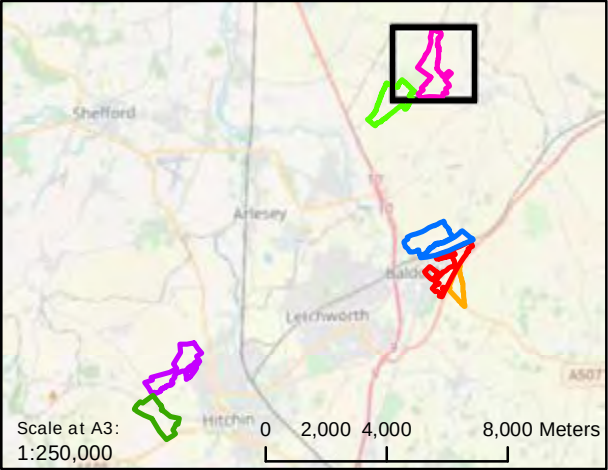
Scale at A3: 1:5,000	Project No: A090070-171-2	Drawing No: Figure 2	Revision: A
Drawn by: Maddie Errington	Drawn date: 08/10/2020	Approved by: Marc Anderton	

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Rev	Date	Notes
A	07/10/20	Initial map production

- Legend
- S22 Ashwell End site boundary
 - S25 Hinxworth site boundary
 - Corn bunting territory
 - Transect route



Corn Bunting Territories in
Ashwell End Mitigation Area

Baldock
Hertfordshire County Council

Scale at A3: 1:8,500	Project No: A090070-171-2	Drawing No: Figure 5	Revision: A
Drawn by: Maddie Errington	Drawn date: 07/10/2020	Approved by: Marc Anderton	

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Application boundary

Mitigation site

Corn bunting territory 2023

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Rev	Description	--

Purpose of Issue

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Client

URBAN & CIVIC

Project

BALDOCK

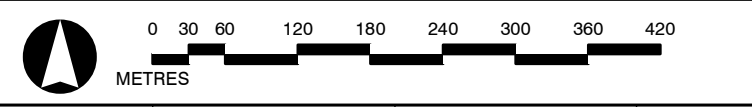
Drawing Title

CORN BUNTING MITIGATION SITE - PARK, TERRITORIES 2023

Drawn MP	Checked LMB	Approved JP	Date 18/09/25
Job No. 21.0045	Scale 1:5,000	Sheet Size A3	Revision B

Drawing Number

BMD.21.0045.DRE.911



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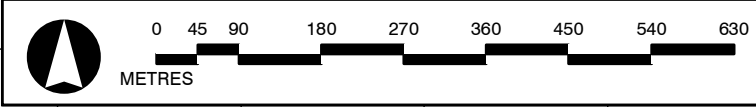
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Application boundary

Mitigation site

Corn bunting territory 2023

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Rev	Description	--
Purpose of Issue		
INFORMATION		
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BALDOCK		
Drawing Title		
CORN BUNTING MITIGATION SITE - HINXWORTH, TERRITORIES 2023		
Drawn	Checked	Approved
MP	LMB	JP
Job No.	Scale	Sheet Size
21.0045	1:6,250	A3
Drawing Number		Revision
BMD.21.0045.DRE.912		



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Application boundary

Mitigation site

Corn bunting territory 2023

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Rev	Description	--	
Purpose of Issue			
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Client			
URBAN & CIVIC			
Project			
BALDOCK			
Drawing Title			
CORN BUNTING MITIGATION SITE - ASHWELL, TERRITORIES 2023			
Drawn	Checked	Approved	Date
MP	LMB	JP	18/09/25
Job No.	Scale	Sheet Size	Revision
21.0045	1:8,250	A3	B
Drawing Number			
BMD.21.0045.DRE.913			

B. METADATA, SURVEY CONDITIONS AND LIMITATIONS

B.1 Metadata

Factor	Detail
Data	Number of territorial corn buntings
Reason for collection	Assessment of potential mitigation sites
Location	Land to the east and south of Baldock, Hertfordshire
Date	26th and 27th June 2023
Method of collection	Walkover assessment
Who collected	Jeff Picksley MCIEEM

Survey Conditions

Date	Start Time	Preceding days	Cloud (%)	Sun	Temp. (°C)	Precipitation
26/06/2023	04:55	Warm and dry	Upto 80%	Sunny spells	N/R	None
27/06/2023	04:45	Warm and dry	Upto 90%	Sunny spells	N/R	None

Limitations Review

Consideration	Comment
Survey & data	
Personal competence, i.e. qualifications, training, skills, understanding, experience	All survey works were undertaken by or directly supervised by personnel experienced in ecological surveying (see meta data above). <u>Jeff Picksley MCIEEM</u> : An experienced ornithologist with over 20 years' experience in bird surveys and assessment. Jeff has undertaken surveys for a wide range of protected bird species including woodlark, Dartford warbler, European nightjar, little ringed plover, hen harrier, kingfisher, curl bunting, firecrest, red kite, black redstart and Cetti's warbler.
Resources (equipment and/or personnel)	Appropriate resources and suitably qualified personnel were used.
Time spent surveying	Sufficient time was spent on site to undertake all surveys. No surveys were 'cut short'.
Data (e.g. arising from incomplete or inappropriate surveys)	The data collected were sufficient for the purpose of the works.
Lack of statistical robustness and higher uncertainties	Statistical analysis of data was not deemed necessary for the purpose of the current works.
Old and out of date data	No old or out of date data were used in this assessment.
Timing or seasonal constraints and suboptimal survey periods	None identified for the habitat suitability assessment approach.
Partial use of and/or departures from good practice guidelines	All surveys accorded with the relevant best practice guidelines.
Site conditions & other factors	
Adverse weather conditions	No significantly adverse weather conditions were encountered during the survey work undertaken at the Site that would be considered to have significantly adversely impacted the reliability and accuracy of data collected.
Restricted access to site or part of site	Access to all fields was available during the surveys.

Consideration	Comment
Unrealistic deadlines	No restrictions on survey data collected or analysed to date are as a result of unrealistic deadlines.
Unproven or untested measures for mitigation and compensation	N/A
Evaluation of conservation value and impacts	The evaluation of the conservation value of habitats and species associated (or potentially associated) with the site and impacts of the development, are based on the current information available. This evaluation will need to be reviewed and updated as necessary should a considerable period of time (24 months) elapse.

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