MKA

Breeding Bird Survey Report

Land off Hogshaw Road, Granborough

Site	*Land off Hogshaw Road, Granborough*
Project number	*130322*
Client name / Address	*Statera Energy Limited, 1st floor, 145 Kensington Church Street, London, W8 7LP*

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Declaration of compliance

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

MKA Ecology Ltd is a CIEEM Registered Practice. This means that MKA Ecology Ltd are formally recognised for high professional standards, working at the forefront of our profession.

Validity of data

Unless stated otherwise the information provided within this report is valid for a maximum period of 24 months from the date of survey. If works at the site have not progressed by this time an updated site visit may be required in order to determine any changes in site composition and ecological constraints.

CONFIDENTIAL INFORMATION ON THE NESTING LOCATIONS OF SCHEDULE 1 SPECIES IS PRESENTED IN THIS REPORT. THIS REPORT SHALL NOT BE DISTRIBUTED INTO THE PUBLIC DOMAIN.

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1. EXECUTIVE SUMMARY

In March 2023 MKA Ecology Limited was commissioned to undertake a breeding bird survey at Land off Hogshaw Road, Granborough in order to establish the potential impacts of a Battery Energy Storage Scheme (BESS) facility on the bird assemblage at the Site. The assessment was completed between March-July 2023 and comprised six visits. Priority bird species, their numbers and behaviours were recorded during the surveys.

The Site consists of arable fields with field margins, surrounded by hedgerows, with a stream running along the north-western boundary. The proposed development is for a potential 500MW Battery Energy Storage System (BESS) site.

A total of 50 species were recorded during the breeding bird surveys of which 20 species were confirmed or probably breeding. The assemblage is typical of farmland and hedgerow habitats. Of the species recorded at the Site, a total of 28 met the assessment criteria as species of conservation concern. Two of these species were confirmed breeding (red kite and yellowhammer), eight species were probably breeding and a further nine species were possibly breeding. Species confirmed or probably breeding include species listed under Schedule 1 of the Wildlife and Countryside Act (1981) (red kite), five Species of Principal Importance (skylark, dunnock, song thrush, linnet and yellowhammer) and species on the Birds of Conservation Concern Red and Amber lists (mallard, woodpigeon, skylark, whitethroat, wren, song thrush, dunnock, linnet and yellowhammer). No significant breeding populations (at a county level or higher) were recorded.

The majority of the breeding assemblage was associated with the hedgerows, line of trees and adjacent woodland copses. These habitats are predicted to be retained within the site design (with the exception of a very short length of hedgerow removal), which will avoid potential impacts upon these species. The BESS footprint will require the removal of arable farmland, which will likely lead to the loss of some individual skylark territories, but not in significant numbers. It is recommended skylark plots are included within areas of retained grassland within the site boundary to compensate for the loss of any territories.

Active birds' nests are protected by law and therefore it is recommended that any vegetation clearance works associated with the development are completed outside the breeding bird season (March to August inclusive). Particular care will need to be taken to avoid disturbance of red kite, however as the BESS facility will be situated over 90m from the closest nest, disturbance is not considered likely if works commence outside the breeding season. Any vegetation clearance work (including removal of arable habitats) undertaken during the breeding season would require nesting bird checks, which could lead to substantial delays in the works schedule if (as is likely) nests are located.

The inclusion of scrub, woodland and species-rich grassland within the design scheme are considered likely to benefit the current breeding assemblage, as well as species of conservation concern which

were only considered to be possibly breeding (cuckoo, stock dove, tawny owl, rook, willow warbler, starling, greenfinch). Long-term, and if managed appropriately, these habitats would provide suitable habitat for , such as spotted flycatcher and sedge warbler.

It is recommended a Landscape and Ecology Management Plan is developed to ensure these enhancements are realised. In addition to detailing methods for habitat creation and management, the plan should include details of a bird box scheme to provide further opportunities for nesting birds.

2. INTRODUCTION

2.1. Aims and scope of bird survey

In March 2023 MKA Ecology Limited was commissioned by Stratera Energy Limited to undertake a breeding bird survey at Land off Hogshaw Road, Granborough in order to support a planning application for a 500MW Battery Energy Storage System (BESS) facility. The survey was commissioned in accordance with recommendations of a previous Preliminary Ecological Appraisal (PEA) survey commissioned and undertaken in June 2022 (MKA Ecology Ltd, 2023).

The aims of the bird survey were to:

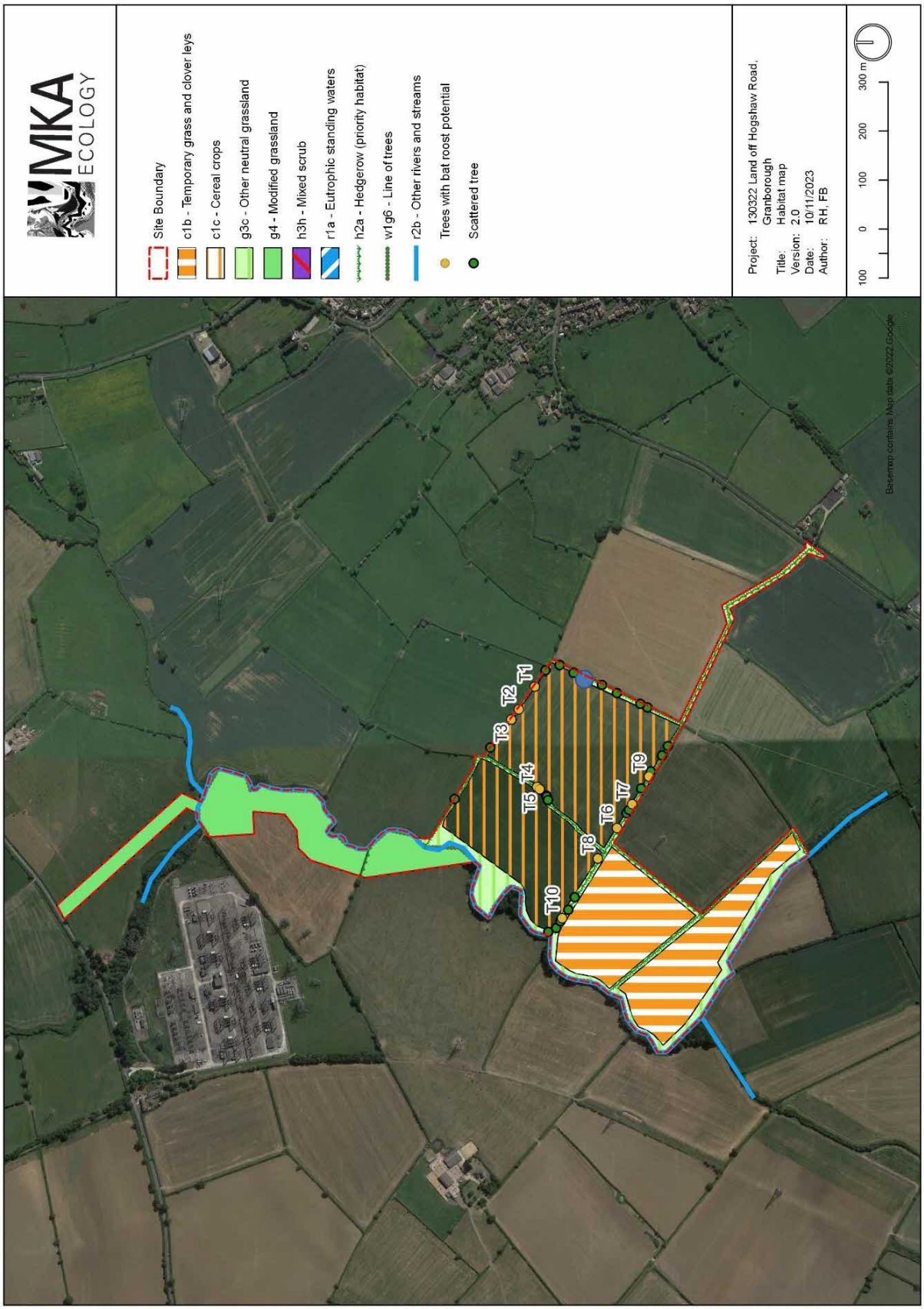
Record the bird species present onsite, and immediate surrounds, and any signs of breeding activity;
Assess the breeding bird community present on Site;
Detail recommendations for mitigation where required; and
Detail recommendations for biodiversity enhancements with regard to breeding birds.

This report must be read in conjunction with the Preliminary Ecological Appraisal (MKA Ecology Ltd, 2023). With respect to birds, this report supersedes the findings and recommendations given in the Preliminary Ecological Appraisal, and in other previous reports (detailed below in Section 2.4).

2.2. Site description and context

The survey area is shown on the map in Figure 1. Within this report this area is referred to as the Site or Land off Hogshaw Road, Granborough. It is centred at grid reference (SP 75515 25296) and falls under the authority of Buckinghamshire Council. The Site consists of agricultural fields with narrow neutral grassland margins, surrounded by hedgerows, with a stream running along the north, west and south-west boundaries of the Site.

Figure 1: UK Habitats Classification Map of Land off Hogshaw Road, Granborough



2.3. Proposed development

The proposed development comprises a 500MW Battery Energy Storage System (BESS) facility. The proposal involves the installation of 1,204 battery containers, 38 inverter buildings, seven control rooms and an attenuation pond. These will be constructed on the agricultural land.

The proposed soft landscaping also includes areas of wildflower grassland, new woodland, scrub and pond creation. The BESS will require a cable connecting itself to the nearby existing National Grid East Claydon Sub-Station via a tunnel dug underneath the brook. In addition, a temporary haul route from the north will require two crossings over the stream. The bridges' design will span both banks, avoiding impacts to their profiles. The bridges will be removed on completion of the development.

A field within the south of the site boundary will be used to provide benefits for biodiversity. This will include the creation of species-rich grassland, woodland, ponds and scrub habitats.

2.4. Previous survey effort

The first PEA survey was commissioned and undertaken in June 2022 (MKA Ecology Ltd, 2022) with Recommendation 19 detailing the need for breeding bird surveys. A subsequent update to the PEA was also commissioned and undertaken in September 2023, for a change to the Site Boundary.

2.5. Legislation and planning policy

This breeding bird survey has been undertaken with reference to relevant wildlife legislation and planning policy. Relevant legislation considered within the scope of this document includes the following:

EU Birds Directive (2009/147/EC);
The Wildlife and Countryside Act 1981 (as amended);
The Conservation of Habitats and Species Regulations 2017;
Natural Environment and Rural Communities (NERC) Act 2006;
The Countryside and Rights of Way (CRoW) Act 2000;

Further information is provided in Appendix 1.

In addition to obligations under wildlife legislation, a revised National Planning Policy Framework (NPPF) updated in 2023 requires planning decisions to contribute to conserving and enhancing the local environment. Further details are provided in Appendix 1. Other policies and guidance are also taken into consideration including the Birds of Conservation Concern (BoCC, Stanbury *et al.*, 2021) which identifies bird species which have shown, or are showing, significant population declines.

Buckinghamshire Council has adopted a Local Plan for the Vale of Aylesbury area (Buckinghamshire Council, 2021) which covers a number of policies relating to biodiversity and habitat conservation, including:

NE1 Biodiversity and Geodiversity;
NE2 River and stream corridors; and
NE8 Trees, hedgerows and woodland

Where relevant these are discussed in further detail in Section 5.

3. METHODOLOGIES

3.1. Desktop study

Prior to the field survey a desktop study was carried out to inform the survey design and whether additional targeted surveys may be required for bird species not well covered by the standard approach. The desktop study used information within the data search previously undertaken as part of the Preliminary Ecological Appraisal (MKA Ecology Ltd, 2023).

3.2. Breeding bird survey

For territorial and semi-colonial species, the method used in this survey was based on the British Trust for Ornithology's (BTO) reduced-effort Common Birds Census (CBC) territory mapping technique (Marchant, 1983 and Bibby *et al.* 2000). The territory mapping method allows the distribution of bird territories across the survey area to be determined, and from this a count of the number of breeding pairs for each species can be derived. This technique allows the relative importance of different parts of the survey area to be evaluated by comparing species densities across the survey area.

The Site was walked at a slow pace, stopping to scan priority habitats and features where appropriate and covering the entirety of the site to a minimum distance of 50m (subject to access constraints and conscious of avoiding excessive disturbance to species and habitats) in order to locate and identify all individual birds. Surveys avoided heavy rain, strong winds (Beaufort force >5) and other conditions where visibility was significantly reduced (eg, dense fog). Any inaccessible areas were surveyed as effectively as possible from accessible viewpoints, with the extent of any likely impacts discussed within the constraints section. Bearing in mind that bird territories may overlap boundaries, and that impacts of developments can extend outside of a Red Line boundary, birds within immediately surrounding habitats were also recorded on the survey.

Registrations of priority birds were recorded digitally using standard British Trust for Ornithology (BTO) two letter species codes onto an appropriate field map on a tablet device. Specific codes were used for singing, calling, and movements between areas, flying, carrying food, nest building, aggressive encounters and other behaviour.

A total of six visits were carried out, in line with recommended methodology (Bird Survey & Assessment Steering Group, 2022). Survey visits were spread evenly between late March and early July in order to ensure that the surveys covered resident breeders which start breeding early, as well as migrant breeders which arrive later. Five of the visits took place early in the morning (commencing within 30 mins of sunrise), with these visits concluding by mid-morning when activity levels tail off. One visit took place in the evening, prior to and until an hour after sunset in order identify species such as song thrush

Turdus philomelos and tawny owl *Strix aluco*. The whole survey area was covered in each visit, using suitable optical equipment (binoculars and a telescope) to observe bird behaviour.

Following the final survey visit, the records of birds made on each visit were imported and collated digitally within QGIS to allow determination of the approximate location and numbers of breeding pairs for territorial and semi-colonial species and to give an indicative total for the survey area as a whole for non-territorial and non-breeding species. This process was undertaken only for priority species (Bird Survey & Assessment Steering Group, 2022), defined here as species listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), species listed under Section 41 of the Natural Environment and Rural Communities Act 2006, Red and Amber listed Birds of Conservation Concern, and any species additionally listed on the relevant local Biodiversity Action Plan.

The territorial analysis was based on a standard technique (Marchant, 1983 and Bibby *et al*. 2000) although modified to take account of the fact that six rather than ten visits were undertaken. In this case, at least two registrations of breeding behaviour are required to determine a territory cluster when eight or fewer surveys visits are undertaken. It is also required that at least two registrations from a territory cluster must be recorded at least 10 days apart. However, a single record of a nest with eggs or young can be counted as a cluster even in the event of adult birds not being recorded at the appropriate qualifying level (Bibby *et al*., 2000).

Breeding status was divided into four categories with species assigned as follows:

Table 1: Breeding status

Not breeding	
F	Flying over
O	Species observed off-site only
M	Species observed but suspected to still be on migration
U	Species observed but suspected to be summering non-breeder
Possible breeder	
H	Species observed in breeding season in suitable nesting habitat
S	Singing male present (or breeding calls heard) in breeding season in suitable breeding habitat
Probable breeding	
P	Pair observed in suitable nesting habitat in breeding season
T	Permanent territory presumed through registration of territorial behaviour (song etc) on at least two different days a week or more apart at the same place, or many individuals on one day
D	Courtship and display (judged to be in or near potential breeding habitat)

N	Visiting probable nest site
A	Agitated behaviour or anxiety calls from adults, suggesting probable presence of nest or young nearby
I	Brood patch on adult examined in the hand, suggesting incubation
B	Nest building or excavating a nest hole
Confirmed breeding	
DD	Distraction-display or injury feigning
UN	Used nest or eggshells found (occupied or laid within period of survey)
FL	Recently fledged young (nidicolous species) or downy young (nidifugous species).
NE	Adults entering or leaving nest-site in circumstances indicating an occupied nest or adults seen incubating
NY	Adult carrying faecal sac or food for young

3.3. Survey dates, times and weather conditions

Six separate survey visits were completed for the breeding bird survey (March to July 2023). Table 2 provides details on the date, time and weather conditions recorded during the Site visits.

Table 2: Date, time and weather conditions of survey visits*

Date	Start time	End time	Start Temp.	Cloud	Rain	Wind
16/03/2023	06:10	09:30	8°C	8/8	Light	4, S
18/04/2023	06:30	10:00	6°C	4/8	None	3, NE
03/05/2023	05:30	09:00	5°C	1/8	None	2, E
26/05/2023	05:15	08:30	8°C	1/8	None	2, E
07/06/2023	04:47	08:15	8°C	8/8	None	2, NE
06/07/2023	19:40	22:27	18°C	4/8	None	3, S

*Temperature in °C; Wind as per Beaufort Scale; Cloud cover given in Oktas.

3.4. Surveyor, author and reviewer

Breeding bird surveys were undertaken by Felix Bird, Senior Ecologist at MKA Ecology Ltd. Felix has five years' experience in undertaking breeding bird surveys. The report was drafted by Henry Wyn-Jones, Graduate Ecologist at MKA Ecology Ltd, and reviewed by Felix Bird.

3.5. Assessment methodology

An assessment of the ornithological importance of the site was made by evaluating the species recorded against the following conservation status criteria:

Annex 1 of the EU Birds Directive (2009/147/EC);

Schedule 1 of the Wildlife and Countryside Act (1981, amended 1985);

Species listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act, 2006;

Buckinghamshire and Milton Keynes Biodiversity Action Plan Priority Species (**Error! Reference source not found.**); and

Birds of Conservation Concern (BoCC) Red and Amber Lists (Stanbury *et al.*, 2021).

The common and scientific names of all bird species referred to in this report follow British Ornithologists' Union (BOU) taxonomy (BOU, 2022).

3.6. Survey constraints

Following the breeding bird survey effort, the site boundary was extended north of Claydon Brook to provide access for a temporary haul route. The additional area comprises modified grassland, regularly grazed by livestock. No evidence of ground nesting species, such as skylark *Alauda arvensis*, was noted during a walkover of this area. Due to the small size, type of habitat present and current land use it is considered highly unlikely this additional land would support significant numbers of notable species and therefore alter the conclusions of this assessment. The absence of data from this area is therefore not considered a significant constraint.

Active red kite nests, a species listed under Schedule 1 of the Wildlife and Countryside Act (1981), were identified onsite. It is an offense to disturb these nesting attempts and therefore a buffer zone was established within which the surveyors did not enter. Surveyors used binoculars and a telescope to survey these areas from a distance. No impacts are predicted within these areas, as these will be retained within the site design. Due to the absence of direct impacts and use of a telescope, the reduced coverage in these areas is not considered a significant constraint.

No other constraints encountered during the survey effort.

4. RESULTS

4.1. Desktop study

The desktop study returned a number of protected bird species that have been identified within 2km of Land of Hogshaw Road, Granborough. Records of red kite *Milvus milvus and* barn owl *Tyto alba*, both Schedule 1 species, were returned. The data search also returned a number of records for species listed on BoCC such as skylark*,* grey partridge *Perdix perdix* and lapwing *Vanellus vanellus.* The Site contains suitable breeding habitat for all of these species and thus particular care was taken to determine the status of these species at the Site.

4.2. Breeding bird survey

A total of 50 species were recorded during the breeding bird survey; three species were confirmed breeding, 17 were considered to be probably breeding, 19 possibly breeding and 11 non-breeding. Out of the 50 species recorded, 28 of these were classified as notable species on the basis of their local or national designations.

The most numerous of the breeding notable species were wren (13 territories), followed by yellowhammer (eight territories), woodpigeon (five territories), song thrush (five territories), skylark (four territories), dunnock (three territories), red kite (three territories), whitethroat (one territory) and linnet (one territory). The species assemblage represented generalists associated with arable habitat as well as hedgerows and woodland habitats.

Species accounts for protected and notable species are given in Section 4.3, and territory maps are provided for protected and notable species which were found to be breeding in Appendix 2. A full list of species recorded during the breeding bird survey and their breeding status is provided in Table 3. Territory numbers are provided only for Wildlife and Countryside Act 1981 Schedule 1 species, Birds of Conservation Concern Red and Amber listed species and Annex 1 of EU Birds Directive listed species.

Table 3: All species recorded during the breeding bird survey at Land of Hogshaw Road, Granborough and their breeding status.

Species	Systematic name	Breeding status	Description	Territories (priority species)*	Peak Count (Visit)
Red-legged partridge	*Alectoris rufa*	Possible	Individuals recorded using the Site for feeding on visits 4 and 5. Suitable habitat is present, however no nests or signs of breeding were identified.	-	3(4)
Pheasant	*Phasianus colchicus*	Possible	Recorded on all visits, no nests or signs of breeding were identified. The arable field margins, hedgerows and small woodland corpses provide suitable nesting habitat.	-	5(1)
Canada goose	*Branta canadensis*	Non-breeding	Pair seen flying over Site on visit 1, 2, 4 and 5. No nests or signs of breeding were identified.	-	2(1,2,5)
Mallard	*Anas platyrhynchos*	Probable	Three males were seen together on visit 1. A pair was observed on visits 1,2 and 3.	0	5(1)
Cuckoo	*Cuculus canorus*	Possible	Seen flying over the Site on visit 4.	0	1(4)
Feral pigeon	*Columba livia*	Non-breeding	Seen flying high over the Site on visit 2.	-	1(2)
Stock dove	*Columba oenas*	Possible	Observed at the Site on visit 1, 2, 3 and 4. The arable fields provide suitable foraging habitat and trees within the hedgerow and along the brook have cavities which would provide suitable nesting habitat however no signs of breeding were identified	0	3(1)
Woodpigeon	*Columba palumbus*	Probable	Observed on every visit with a mixture of sedentary birds and birds seen flying high over the site only. Five territories are estimated at the Site.	5	18(6)
Common gull	*Larus canus*	Non-breeding	Observed as part of large mixed gull flock loafing on fields north of Site on visit 1.	0	2(1)
Herring gull	*Larus argentatus*	Non-breeding	Flock of eight observed on visit 1 within a mixed gull flock north of the Site. No signs of breeding were identified.	0	8(1)
Lesser black-backed gull	*Larus fuscus*	Non-breeding	Large flock of 65 seen on visit 1. Seen flying over Site on visits 2,3 and 6. No signs of breeding were identified.	0	65(1)

Species	Systematic name	Breeding status	Description	Territories (priority species)*	Peak Count (Visit)
Little egret	*Egretta garzetta*	Non-breeding	Seen flying north over the Site on visit 5.	-	1(5)
Osprey	*Pandion haliaetus*	Non-breeding	Seen flying high over the Site on visit 2.	0	1(2)
Red kite	*Milvus milvus*	Confirmed	Three territories with two confirmed nests, two young in both nests.	3	5(1,2)
Buzzard	*Buteo buteo*	Possible	Seen flying north over the Site on visit 4. Suitable trees for nesting are present, however no further sightings or evidence of breeding was recorded.	-	1(4)
Tawny owl	*Strix aluco*	Possible	Heard calling during the dusk survey (visit 6).	0	1(6)
Great spotted woodpecker	*Dendrocopos major*	Possible	Single individual observed on visit 2.	-	1(2)
Green woodpecker	*Picus viridis*	Possible	Recorded calling on visits 1, 4 and 6 to the south of the Site.	-	1(1,4,6)
Peregrine	*Falco peregrinus*	Non-breeding	Single individual observed north of to the Site on visit 5 at the National Grid substation. No records onsite or suitable nesting habitat onsite.	0	1(4)
Jay	*Garrulus glandarius*	Possible	Single individual observed on visit 6.	-	1(6)
Magpie	*Pica pica*	Probable	A pair was recorded in suitable habitat on visits 1 and 6.	-	3(6)
Jackdaw	*Corvus monedula*	Confirmed	A large flock of 60 individuals were seen on visit one. Pairs were identified in suitable habitat on subsequent visits and a nest was identified on visit 5.	-	60(1)
Rook	*Corvus frugilegus*	Possible	Seen on 3 of the 6 visits, foraging on the fields including with juveniles on visit 4 (when the fields had been recently cut). The trees and adjacent woodland provide suitable nesting habitat however the number of suitable trees within the site boundary is limited and no evidence of rookeries was recorded.	0	16(4)

Species	Systematic name	Breeding status	Description	Territories (priority species)*	Peak Count (Visit)
Carrion crow	*Corvus corone*	Possible	Observed on all six visits. No territorial behaviour was recorded or nests identified.	-	4(1)
Raven	*Corvus corax*	Possible	Pair observed to the north of the Site, occasionally having territorial disputes with the nesting red kite. No evidence of breeding onsite and considered likely to be breeding to the north of the Site.	-	2(4)
Blue tit	*Cyanistes caeruleus*	Probable	Recorded on all visits, territories were identified along the hedgerows and edges of woodland.	-	21(1)
Great tit	*Parus major*	Probable	Recorded on all visits, territories were identified along the hedgerows and edges of woodland.	-	6(1)
Skylark	*Alauda arvensis*	Probable	Present on all visits, four territories identified within the arable fields at the site. A further 14 territories were identified in close proximity to the site within adjacent fields.	4	15(1)
Willow warbler	*Phylloscopus trochilus*	Possible	Singing individual observed on visit 3, no other individuals were recorded across the survey effort.	0	1(3)
Chiffchaff	*Phylloscopus collybita*	Probable	Recorded on visits 2,3,4 and 5. Territories were identified within the line of trees adjacent to the brook.	-	7(3)
Blackcap	*Sylvia atricapilla*	Probable	Signing males recorded on visits 4 and 5, single territory identified.	-	4(4)
Lesser whitethroat	*Sylvia curruca*	Probable	Singing males recorded on visits 3,4 and 5. Single territory identified	-	1(3,4,5)
Whitethroat	*Sylvia communis*	Probable	Territorial behaviour was observed on visits 3,4, and 5. Single territory identified	1	3(3)
Wren	*Troglodytes troglodytes*	Probable	Observed on all visits, 13 territories present within the hedgerows and line of trees across the Site. A further territory identified in close proximity to the Site boundary.	13	15(2)
Treecreeper	*Certhia familiaris*	Possible	Single individual observed on visit 1.	-	1(1)
Starling	*Sturnus vulgaris*	Possible	Observed on three visits, no territories were identified at the site.	0	5(1)

Species	Systematic name	Breeding status	Description	Territories (priority species)*	Peak Count (Visit)
Blackbird	*Turdus merula*	Possible	Observed on visits 1, 3 and 4. A singing male was recorded on visit 4, however no further breeding evidence was recorded.	-	2(4)
Fieldfare	*Turdus pilaris*	Non-breeding	Observed on visit 1, winter visitor only.	0	4(1)
Redwing	*Turdus iliacus*	Non-breeding	Observed on visit 1, winter visitor only.	0	79(1)
Song thrush	*Turdus philomelos*	Probable	Observed on all visits, five territories present at the Site.	5	4(2)
Robin	*Erithacus rubecula*	Probable	Observed on all but visit 6, territories present at the Site.	-	6(1)
Wheatear	*Oenanthe oenanthe*	Non-breeding	Male and female observed on visits 2 and 3, passage migrant only.	0	2(2)
Dunnock	*Prunella modularis*	Probable	Seen on all visits, three territories present.	3	7(2)
Grey wagtail	*Motacilla cinerea*	Possible	Observed only on visit 1, calling near the brook. No further observations or territorial behaviour was recorded.	0	1(1)
Meadow pipit	*Anthus pratensis*	Possible	A large flock of 33 individuals were observed on visit 2. A singing male was recorded on visit 2 outside the Site boundary however no further breeding evidence was recorded.	0	33 (2)
Chaffinch	*Fringilla coelebs*	Probable	Observed on all visits, territories present at the Site.	-	5(1)
Greenfinch	*Chloris chloris*	Possible	One singing bird observed during visit 3, no other individuals were recorded across the survey effort.	0	1(3)
Linnet	*Linaria cannabina*	Probable	Seen on three visits, one territory identified.	1	3(2)
Goldfinch	*Carduelis carduelis*	Confirmed	Observed on all visits, one territory identified with pair visiting nest.	-	6(1)

Species	Systematic name	Breeding status	Description	Territories (priority species)*	Peak Count (Visit)
Yellowhammer	*Emberiza citrinella*	Confirmed	Observed on all visits, eight territories were identified within the Site boundary, including an adult carrying food to a nest site. A further territory was identified in close proximity to the Site.	8	8(4)

* Territories estimated only for priority species, as per best practice methodology (Bird Survey & Assessment Steering Group, 2022)

Table 4: Priority species recorded at Land of Hogshaw Road, Granborough during the breeding bird survey and their conservation designations

Species	Systematic name	Breeding status onsite	Schedule 1 [1]	BOCC 4 [2]	Section 41 [3]	Annex 1 [4]
Mallard	*Anas platyrhynchos*	**Probable**	-	Amber	-	-
Cuckoo	*Cuculus canorus*	**Possible**	-	Red	Yes	-
Stock dove	*Columba oenas*	**Possible**	-	Amber	-	-
Woodpigeon	*Columba palumbus*	**Probable**	-	Amber	-	-
Common gull	*Larus canus*	**Non-breeding**	-	Amber	-	-
Herring gull	*Larus argentatus*	**Non-breeding**		Red	Yes	-
Lesser black-backed gull	*Larus fuscus*	**Non-breeding**	-	Amber	-	-
Little egret	*Egretta garzetta*	**Non-breeding**	-	Green	-	Yes
Red kite	*Milvus milvus*	**Confirmed**	Yes	Green	-	Yes
Osprey	*Pandion haliaetus*	**Non-breeding**	Yes	Amber	-	Yes
Tawny owl	*Strix aluco*	**Possible**	-	Amber	-	-
Peregrine	*Falco peregrinus*	**Non-breeding**	Yes	Green	-	Yes
Rook	*Corvus frugilegus*	**Possible**	-	Amber	-	-
Skylark	*Alauda arvensis*	**Probable**	-	Red	Yes	-
Willow warbler	*Phylloscopus trochilus*	**Possible**	-	Amber	-	-
Whitethroat	*Sylvia communis*	**Probable**	-	Amber	-	-
Wren	*Troglodytes troglodytes*	**Probable**	-	Amber	-	-
Starling	*Sturnus vulgaris*	**Possible**	-	Red	Yes	-
Fieldfare	*Turdus pilaris*	**Non-breeding**	Yes	Red	-	-
Redwing	*Turdus iliacus*	**Non-breeding**	Yes	Amber	-	-

Species	Systematic name	Breeding status onsite	Schedule 1 [1]	BOCC 4 [2]	Section 41 [3]	Annex 1[4]
Song thrush	*Turdus philomelos*	**Probable**	-	Amber	Yes	-
Wheatear	*Oenanthe oenanthe*	**Non-breeding**	-	Amber	-	-
Dunnock	*Prunella modularis*	**Probable**	-	Amber	Yes	-
Grey wagtail	*Motacilla cinerea*	**Possible**	-	Amber	-	-
Meadow pipit	*Anthus pratensis*	**Possible**	-	Amber	-	-
Greenfinch	*Chloris chloris*	**Possible**	-	Red	-	-
Linnet	*Linaria cannabina*	**Probable**	-	Red	Yes	-
Yellowhammer	*Emberiza citrinella*	**Confirmed**	-	Red	Yes	-

[1] Schedule 1 of The Wildlife and Countryside Act 1981 (see Appendix 1)
[2] Birds of Conservation Concern (see Appendix 1
[3] Section 41 (NERC Act 2006) 'Species of Principal Importance' (see Appendix 1)
[4]Annex 1 of EU Birds Directive (see Appendix 1)

4.3. Species accounts

Ten of the priority species recorded (mallard, woodpigeon, red kite, skylark, whitethroat, wren, song thrush, dunnock, linnet and yellowhammer) were classified as Confirmed and Probably breeding, these notable species are discussed below.

Mallard

Mallard is a common breeding duck that is widespread across the UK; it was recorded in 90% of stretches surveyed during the 2022 waterbird breeding bird survey (Heywood *et al*., 2023). The wintering population appears to be steady decline, which is reflected in a population decrease of 8% between 1995 and 2021, however the breeding population for mallard remains stable. Mallard is on the Amber list on account of the decline in the immigration of mallards to the UK in winter (Stanbury *et al.,* 2021).

Three mallards were observed on several survey visits, including a pair from a similar location along the brook on visits 1 and 3. The brook and riparian habitat provides suitable nesting habitat and it is considered probable this species bred onsite.

Woodpigeon

Woodpigeon is one of the most common and widespread species in the UK; it was recorded in 91% of squares surveyed during the 2022 breeding bird survey (Heywood *et al*., 2023). Furthermore the population has increased by 32% between 1995 and 2021. Despite the recent population increases, woodpigeon has recently been moved from the BoCC Green list to the Amber list on account of the UK supporting over 20% of the European population (Stanbury *et al.,* 2021).

Woodpigeon were recorded on all visits with a maximum count of 18 individuals on visit 6. Woodpigeon is a species which is non-territorial. Therefore, standard territory mapping techniques are not suitable for this species. Instead, registrations were divided into clusters, the clusters were then assigned a number of pairs, which is based on the second highest number of males present on any single visit for the cluster; unsexed birds were totalled and halved between the sexes, with any excess birds being treated as males. Using this technique, it is possible to estimate that there are five woodpigeon territories at the Site.

Red kite

Formerly a very rare vagrant within Buckinghamshire, since the re-introduction scheme in the late 1980s, the species has become very common in some areas (Buckinghamshire Bird Club, 2022). This population trend is reflected in the results from the BTO Breeding Bird Survey (BBS) which indicate numbers have risen by over 25,000% in England between 1995 and 2021 (Heywood *et al.* 2023). This success has led to the species being moved to the BoCC Green list. It nevertheless retains its fully protected status as a Schedule 1 species (Wildlife and Countryside Act, 1981) and is also listed on Annex 1 of the European Birds Directive.

Three territories of this Schedule 1 species were recorded onsite, with two of these territories holding confirmed nesting locations. Two chicks were observed in each of the nests in the mature trees at the along the brook. Territories for this species is shown in Figure 2, Appendix 2.

Skylark

The English population of skylark underwent a steep decline between 1975 and 1985 (Massimo et al., 2022) and is accordingly listed on the Birds of Conservation Concern Red List and as a Section 41 Species of Principal Importance (NERC Act, 2006). Recent trends indicate a more gradual decline (-16%, 1995-2021 (Heywood *et al*., 2022)), although it remains a common resident throughout Buckinghamshire (Buckinghamshire Bird Club, 2022).

Skylark was recorded on all visits with four territories identified on site and a further 14 territories present in the adjacent fields. The onsite territories were located within one field, furthest from the mature line of trees adjacent to the brook. No territories were present within the fields directly adjacent to the brook. Territories for this species is shown in Figure 3, Appendix 2.

Whitethroat

Whitethroat is a numerous summer visitor to hedgerows, scrub and heathland, with all individuals wintering in West Africa. It was recently moved from Green to Amber in the BoCC Amber List (Stanbury *et al.*, 2021) due an increasing rate of population decline.

Low numbers of singing whitethroat were recorded on visits 3,4 and 5. A single territory was identified within a hedgerow on the eastern boundary, shown in Figure 4, Appendix 2.

Wren

Wren is the UK's most common breeding bird and breeds widely across country in woodland, farmland, heathland, and urban habitats. Whilst the English population of wren has experienced population growth (Heywood *et al*., 2023), wren is now Amber listed under the BoCC on account of the UK holding over 20% of the European population (Stanbury *et al*., 2021).

Recorded to be the second most numerous breeding bird at the Site, a total of 13 wren territories were identified across the Site within the hedgerows and line of trees. It is very likely that wrens are breeding in these locations. Mapping of the confirmed wren territories at the Site are shown in Figure 5, Appendix 2.

Song thrush

Song thrush is a widespread and common resident breeding species which has undergone a large decline in its breeding population between 1965 and 1995 (Massimo *et al*.,2022). However, more recent trends have shown signs of recovery (23% increase between 1995 and 2021, Heywood *et al*., 2023), which has resulted in this species moving from the Red to Amber list on the fifth review of the BoCC list.

This species was observed singing on all visits with total of five territories identified across the Site within the line of trees and adjacent woodland copses. It is very likely that song thrush are breeding in these locations. Mapping of the five song thrush territories is shown in Figure 6, Appendix 2.

Dunnock

Dunnock is a resident and highly sedentary species in the UK (Balmer *et al.*, 2013). The species occupies a range of habitats and tends to nest in hedgerows. Dunnock is listed on the Birds of Conservation Concern Amber List due to a moderate decline of the breeding population over the longer term (Stanbury *et al*., 2021), and it is also listed as a Species of Principal Importance (NERC Act, 2006).

Three singing males were identified holding territory at the Site in the line of trees and the hedgerows. Mapping of the dunnock territories is shown in Figure 7, Appendix 2.

Linnet

Linnet is a widespread and numerous species in Britain. The species has undergone long-term declines in breeding population since the mid-1970s, a trend which has been reflected across Europe. In recent years, this species has seen declines of 23% in England between 1995 and 2021 (Heywood *et al*., 2023). Linnet is a Species of Principal Importance and is on the BoCC Red list.

Linnet is a species which is non-territorial. Therefore, standard territory mapping techniques are not suitable for this species. Instead, registrations were divided into clusters, the clusters were then assigned a number of pairs, which is based on the second highest number of males present on any single visit for the cluster; unsexed birds were totalled and halved between the sexes, with any excess birds being treated as males. Using this technique, it is possible to estimate that there is one linnet territory present.

Yellowhammer

Yellowhammer is a widespread and numerous species in Britain. The species has undergone long-term declines in breeding population since the mid-1980s, a trend which has been reflected across Europe. In recent years, this species has seen declines of 28% in England between 1995 and 2021 (Heywood *et al*., 2023). Linnet is a Species of Principal Importance and is on the BoCC Red list.

Yellowhammer was recorded on all visits with eight territories being identified within the hedgerows at the Site and a further territory identified in close proximity. Several pairs were observed and an adult was seen carrying food to a nest site on Visit 4, confirming breeding on site. Mapping of the yellowhammer territories is shown in Figure 8, Appendix 2.

5. EVALUATION AND RECOMMENDATIONS

This section outlines key ecological issues for consideration and ecological enhancements where appropriate.

5.1. Evaluation of breeding bird assemblage

A total of 50 species were recorded during the breeding bird survey; four species were confirmed breeding, 16 were considered to be probably breeding, 19 possibly breeding and 11 non-breeding. Out of the 50 species recorded, 28 of these were classified as notable species on the basis of their local or national designations.

Species of conservation priority confirmed or probably breeding onsite were: mallard, woodpigeon, red kite, skylark, whitethroat, wren, song thrush, dunnock, linnet and yellowhammer. The most numerous of the breeding notable species was wren (13 territories), followed by yellowhammer (eight territories), woodpigeon (five territories), song thrush (five territories), skylark (four territories), dunnock (three territories), red kite (three territories), whitethroat (one territory), linnet (one territory) and mallard (one territory). The inclusion of wren and woodpigeon as notable species is a result of their Amber listing, which for these species is solely based on the fact that the UK holds a significant proportion of the European population. These species are very common habitat generalists which are not subject to significant population declines, and consequently their presence onsite is not treated as being of ecological significance. Mallard are also very common and widespread, and their presence onsite is not considered of ecological significance.

Three red kite territories were identified, with two confirmed nests. Whilst listed on Schedule 1 of the Wildlife and Countryside Act (1981), red kite is common within Buckinghamshire and their population is rapidly increasing. As a result, the presence of breeding red kite is not considered to be greater than local significance.

A further ten priority species were considered to be possible breeding (cuckoo, stock dove, tawny owl, rook, willow warbler, starling, grey wagtail, meadow pipit and greenfinch), however these species were only registered on a single occasion or were not showing any evidence of breeding onsite. A further nine priority species were recorded but not considered to be breeding onsite (common gull, herring gull, lesser black-backed gull, little egret, osprey, peregrine, fieldfare, redwing, and wheatear). Redwing and fieldfare are winter visitors only in the vast majority of the UK, with localised breeding only taking place in Scotland. Common gull, herring gull and lesser black-backed gull were only recorded loafing in the fields or flying over the Site. Osprey and wheatear are passage migrants and are unlikely to breed at the Site. Little egret and peregrine were both seen flying over the Site or in proximity to the Site only. The Site does not provide suitable nesting habitat for these species.

The majority of the Site area comprises arable crops and grassland, however this habitat was found to only support four skylark territories. This species is common within Buckinghamshire and the surrounding area- a further 14 territories were identified outside the Site boundary. The vast majority of breeding activity was restricted to the hedgerows and line of trees on the field boundary of the Site, particularly where small woodland copses were present adjacent to the Site.

No evidence of farmland indicator generalist species, including kestrel *Falco tinunculus*, reed bunting *Emberiza schoeniclus* and yellow wagtail *Motacilla flava*, or farmland indicator specialist species, such as grey partridge, lapwing, tree sparrow *Passer montanus* and turtle dove *Streptopelia turtur*, were recorded during the survey effort.

Overall, the assemblage is considered to be typical of generalist species associated with farmland and hedgerow habitats, however due the low density of territories and absence of numerous specialist indicator species, the community is not considered to be greater than local significance.

5.2. Evaluation of impacts

The scheme proposes the construction of a BESS facility with associated access and soft landscaping.

Impacts upon the overall breeding bird community are anticipated as a result of the development, in particular, habitat clearance works during the construction phase will likely involve the removal of a significant area of the arable field.

Species that nest and/or forage in arable and grassland will be impacted by the proposed development. Skylark are the most notable species found breeding within the arable fields on the site and four territories will be lost. The loss of four pairs is not considered highly significant as it is still a common local species.

The majority of breeding bird territories were found within the hedgerows and line of trees at the Site. These habitats are retained within the design scheme, avoiding direct impacts upon these species. The proposed soft landscaping includes significant wildflower meadow, woodland and scrub creation. All of these habitats have the potential to enhance the local assemblage and this is discussed further below.

5.3. Recommendations

To compensate for the likely loss of skylark territories, it is recommended at least four skylark plots are included within retained temporary grassland within the north of the Site, or within arable fields in the wider land ownership. Ideally the plots would be positioned at least 50m from field boundaries. Each plot should be at least 3m wide with a minimum area of 16 square metres.

Recommendation 1

Incorporate skylark plots into the retained grassland, or arable land within the wider land ownership.

Red kite is listed on Schedule 1 of the Wildlife and Countryside Act (1981), as amended, and are therefore subject to the provisions of Section 1, which makes it an offense to: intentionally or recklessly disturb a red kite, while it is building a nest or is in, on or near a nest containing eggs or young; or disturb the dependent young of such a bird.

No direct loss of breeding territories is expected due to the construction of the proposed development as the confirmed nest areas are either located outside the site boundary or within areas which will be retained. However, negative impacts in the form of disturbance during the breeding period of red kite are possible during the construction of the proposed development.

A review of the limited research available on red kite disturbance by Ruddock et al. (2007), included a survey of expert opinion which suggested a tolerance range of 10m - 300m.This indicates red kite show a variable response to disturbance and potential working solutions should be assessed individually.

The adjacent land use is agricultural fields and a public footpath runs across the north of the Site, suggesting the area is subject to occasional pedestrian and recreational disturbance. The indicative masterplans show the areas immediately surrounding the red kite nests will be retained and planted with soft landscaping. The BESS facility will be situated over 90m from the closest nest, reducing the risk of disturbance. It is nevertheless recommended that works commence outside the nesting bird season (March to August inclusive) to avoid delays.

It is also recommended a check for red kite nests is undertaken in March to pro-actively identify if the nests are active, identify any new nesting sites, and inform any mitigation measures required to minimise impact upon the construction programme. If works are scheduled to commence during the breeding season, this check should be undertaken beforehand.

Recommendation 2

Schedule construction works to commence outside the breeding season to minimise the risk of disturbance to red kite. A further check for nesting red kite should be undertaken in March to confirm the status of the nests, identify any new nest sites and inform any further mitigation measures required.

All wild birds, their active nests and eggs are protected under The Wildlife and Countryside Act 1981 (as amended), which makes it an offence deliberately, or recklessly, to kill or injure any wild bird or damage or destroy any active birds' nest or eggs.

Any vegetation removal should take place between September and February inclusive (i.e. outside of the bird season), which would avoid impacts on breeding birds and eliminate the need for nesting bird checks.

Where vegetation removal is required during the breeding bird season (between the months of March and August inclusive), such works can only proceed following the completion of a nesting bird check undertaken by an experienced ornithologist. Any active birds' nest identified during this check must be protected from harm until the nesting attempt is complete. This will require a buffer to be left around the nest, the size of which will depend upon the species involved (as a general rule, this will be 10m in all directions around the nest, although species listed under Schedule 1 will likely require a much greater buffer). Any buffers established as a result of the initial nesting bird check must be subjected to a second check after the original nesting attempt is completed, before such areas can be removed during the breeding bird season.

Recommendation 3

Schedule vegetation removal between the months of September and February inclusive to avoid impacts on nesting birds. Where this timing is not feasible works should be preceded by a nesting bird check.

The National Planning Policy Framework (NPPF) state that all planning decisions should aim to maintain and enhance, restore or add to biodiversity and geological conservation interests. The following recommendations are measures that should be undertaken to maintain and enhance the biodiversity of the site in line with the policies contained within the NPPF and local policies.

The indicative landscape masterplan includes areas of wildflower grassland, woodland, scrub and pond creation, as well as additional hedgerow and tree planting. The majority of breeding territories identified during the survey visits were associated with the existing hedgerows and line of trees. As these habitats will be retained, the addition of hedgerows, scrub and woodland offer the potential to significantly enhance these populations. If managed appropriately, these habitats could offer suitable habitat for colonists not currently breeding at the site, such as spotted flycatcher.

It is recommended the proposed ponds are designed to include areas of marginal vegetation. Whilst providing ecological value for a wide range of taxa, these areas would offer suitable habitat to potentially support notable species such sedge warbler *Acrocephalus schoenobaenus*.

To ensure the proposed habitats are created and managed appropriately it is recommended a Landscape and Ecology Management Plan is produced. This document should include details of the species composition and target structure of the proposed soft landscaping to ensure these potential benefits are maximised for the bird assemblage, whilst meeting wider ecological targets for the Site.

Recommendation 4

Develop a Landscape and Ecology Management Plan to maximise the potential benefit of the proposed soft landscaping for the breeding bird assemblage.

It is recommended the LEMP includes a bird box scheme to provide enhanced nesting opportunities. It is recommended the scheme includes provisions for tawny owl and generalist species should be incorporated into the development at the Site. Provision of boxes for tawny owl is recommended, with tawny owl confirmed present at the Site. Examples of suitable boxes are shown in Appendix 3 together with information concerning the correct siting of these boxes. These boxes should be installed upon existing mature trees.

Recommendation 5

Erect nest boxes in suitable locations for tawny owl and generalist species. The bird box scheme should be fully detailed within the LEMP.

6. CONCLUSIONS

In March 2023 MKA Ecology Limited was commissioned to undertake a breeding bird survey at Land off Hogshaw Road, Granborough in order to establish the potential impacts of a Battery Energy Storage Scheme (BESS) facility on the bird assemblage at the Site. The assessment comprised a standardised Common Bird Census of six visits.

A total of 50 species were recorded during the breeding bird surveys. This is considered to be to be typical of generalist species associated with farmland and hedgerow habitats. 28 of these species met the assessment criteria as species of conservation concern, although only ten of these were confirmed or probably breeding at the Site (mallard, woodpigeon, red kite, skylark, whitethroat, wren, song thrush, dunnock, linnet and yellowhammer).

The development will likely lead to the loss of individual skylark territories, however this species is common in the surrounding area. Skylark plots have been recommended to further increase the carrying capacity of the area as compensation.

Red kite was confirmed breeding onsite and sensitive working measures will be required to avoid disturbance of this Schedule 1 listed species. It is recommended works commence outside the breeding season and a further check is undertaken in March to assess the status of the nests onsite and any further mitigation measures required. Undertaking vegetation clearance outside the breeding season will also avoid impacts upon other nesting species. Where this timing is not feasible nesting bird checks will need to be completed before work is commenced.

The majority of the breeding bird assemblage was associated with the hedgerows and line of trees. The development provides a potentially significant enhancement for these species, by proposing the creation of additional hedgerow, scrub, woodland and species-rich grassland. A LEMP is recommended to ensure the successful creation and long-term management of these features and it should be supported by a nest box scheme to make additional provision for species of local importance.

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8. APPENDICES

8.1. Appendix 1: Relevant wildlife legislation and planning policy

Please note that the following is not an exhaustive list, and is solely intended to cover the most relevant legislation pertaining to species commonly associated with development sites.

Subject	Legislation (England)	Relevant prohibited actions
Birds		
All wild birds	Wildlife and Countryside Act 1981 (as amended)	Intentionally kill, injure, or take any wild bird or their eggs or nests.
'Schedule 1' Birds	Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)	Disturb any wild bird listed on Schedule 1 whilst it is building a nest or is in, on, or near a nest containing eggs or young; or Disturb the dependent young of any wild bird listed on Schedule 1.

The Birds Directive (Directive 2009/147/EC)

Full legislation text available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0147

lists 193 species and sub-species which are in danger of extinction; vulnerable to specific changes in their habitat; considered rare because of small populations or restricted local distribution; requiring particular attention for reasons of the specific nature of habitat. For these species Member States must conserve their most suitable territories in number and size as Special Protection Areas.

The Conservation of Habitats and Species 2017 (as amended)

Full legislation text available at: The Conservation of Habitats and Species Regulations 2017 (legislation.gov.uk)

The Wildlife and Countryside Act 1981 (as amended)

Full legislation text available at: http://www.legislation.gov.uk/ukpga/1981/69/contents.

Countryside and Rights of Way Act 2000

Full legislation text available at: http://www.legislation.gov.uk/ukpga/2000/37/contents

Section 41 of Natural Environments and Rural Communities (NERC) Act 2006

Full legislation text available at: http://www.legislation.gov.uk/ukpga/2006/16/section/41

Many of the species above, along with a host of others not afforded additional protection, are listed on Section 41 of the NERC Act 2006.

Section 41 (S41) of the Natural Environment and Rural Communities (NERC Act 2006) requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. The list (including 56 habitats and 56 species of birds) has been drawn up in consultation with Natural England and draws upon the UK Biodiversity Action Plan (BAP) List of Priority Species and Habitats.

The S41 list should be used to guide decision-makers such as local and regional authorities to have regard to the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006. The duty applies to all local authorities and extends beyond just conserving what is already there, to carrying out, supporting and requiring actions that may also restore or enhance biodiversity.

Birds of Conservation Concern (BoCC)

This is a quantitative assessment of the status of populations of bird species which regularly occur in the UK, undertaken by the UK's leading bird conservation organisations. It assesses a total of 245 species against a set of objective criteria to place each on one of three lists – Green, Amber and Red – indicating an increasing level of conservation concern. There are currently 70 species on the Red list, 103 on the Amber list and 72 on the Green list. The classifications described have no statutory implications, and are used merely as a tool for assessing scarcity and conservation value of a given species.

National Planning Policy Framework (NPPF)

Full text is available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2

The revised NPPF was updated on 5 September 2023 setting out the Government's planning policies for England and the process by which these should be applied. The policies within the NPPF are a material consideration in the planning process. The key principle of the NPPF is a presumption in favour of sustainable development, with sustainable development defined as a balance between economic, social and environmental needs.

Policies 174 to 188 of the NPPF address conserving and enhancing the natural environment, stating that the planning system should:

Contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes;

Recognise the wider benefits of ecosystem services; and

Minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

Furthermore, there is a focus on re-use of existing brownfield sites or sites of low environmental value as a priority, and discouraging development in National Parks, Sites of Specific Scientific Interest, the Broads or Areas of Outstanding Natural Beauty other than in exceptional circumstances.

Where possible, planning policies should also:

"promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity".

8.2. Appendix 2: Breeding territories of priority species

Figure 2: Confirmed red kite territories

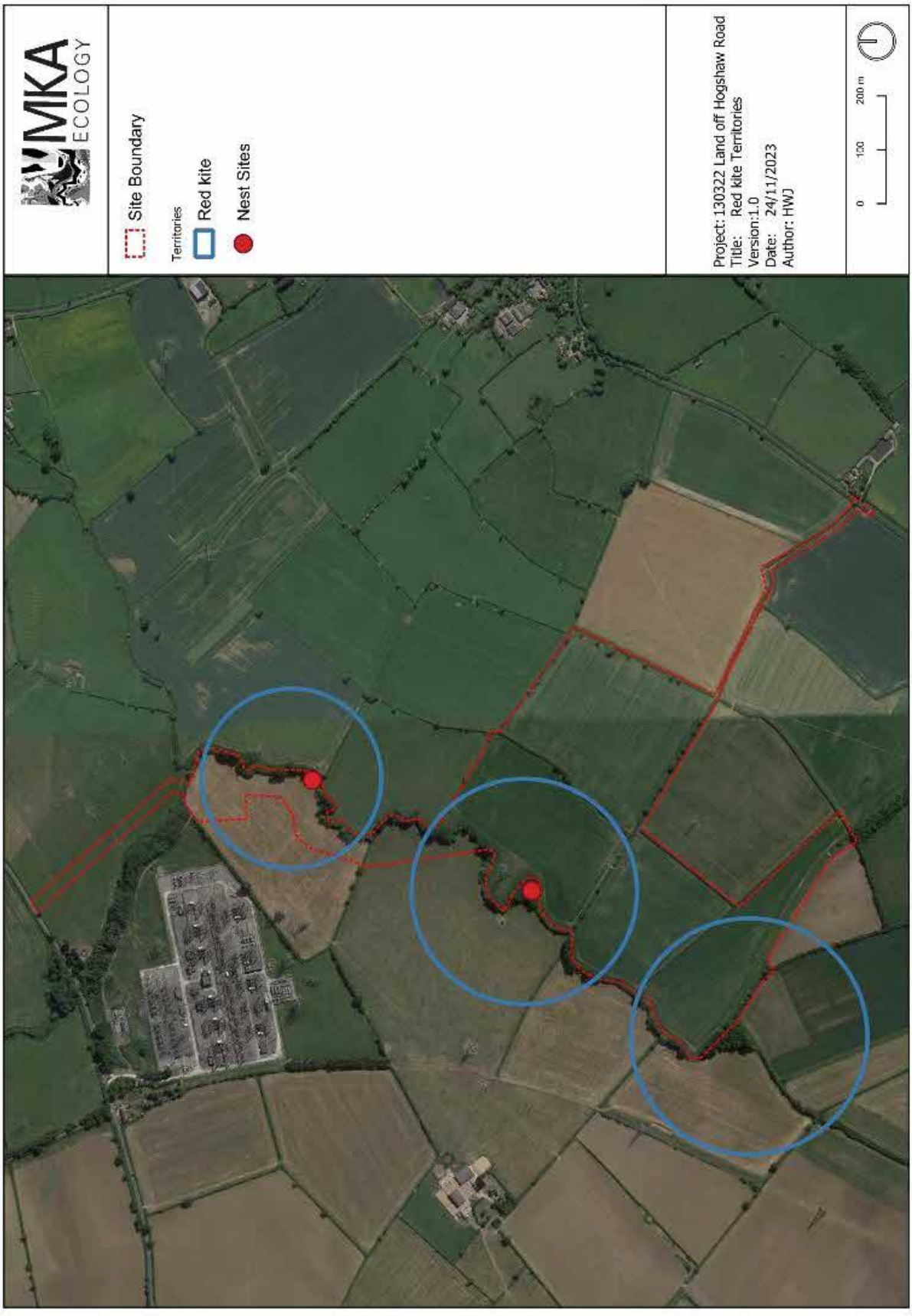


Figure 3: Confirmed skylark territories

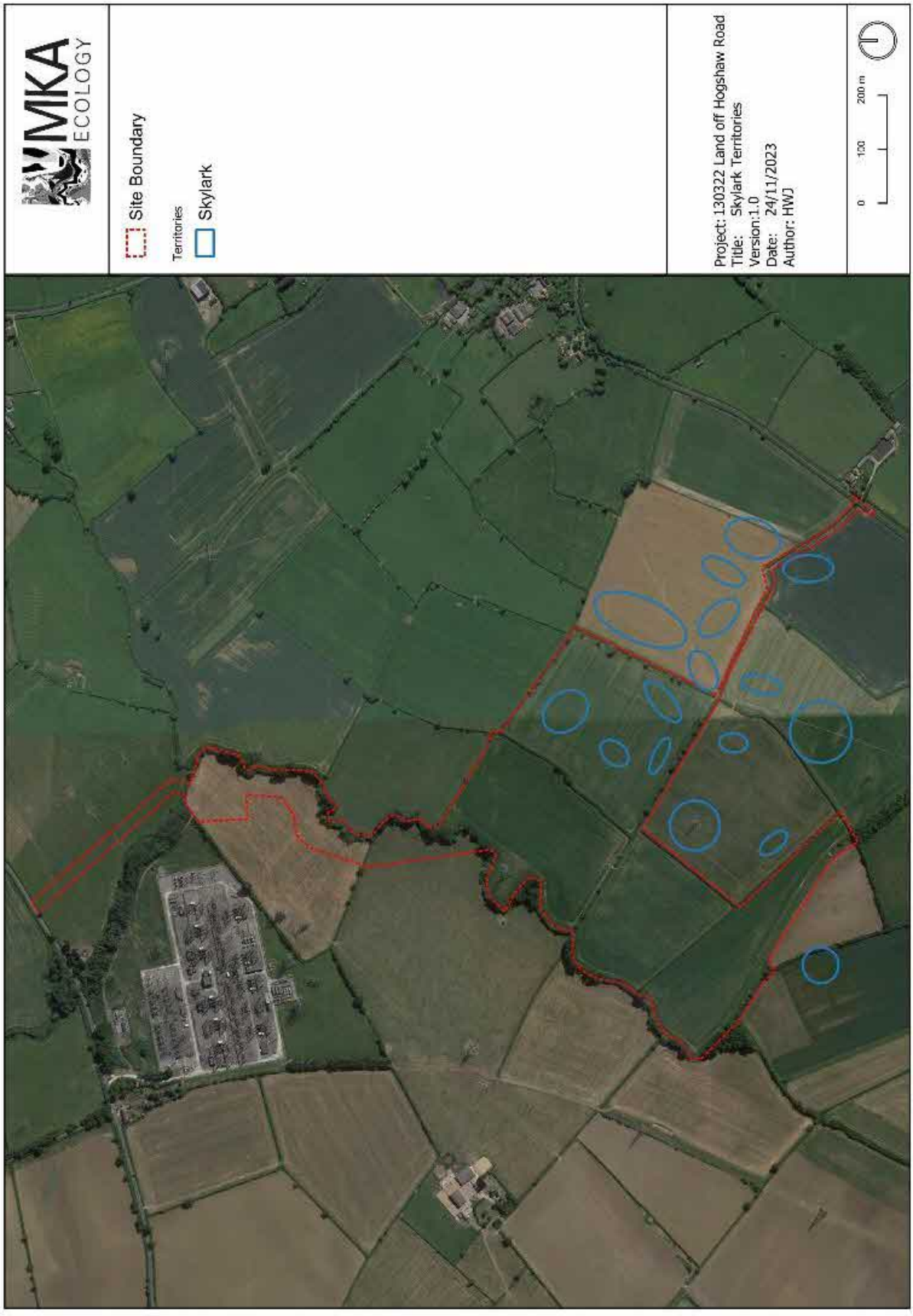


Figure 4: Confirmed whitethroat territories

Figure 5: Confirmed wren territories

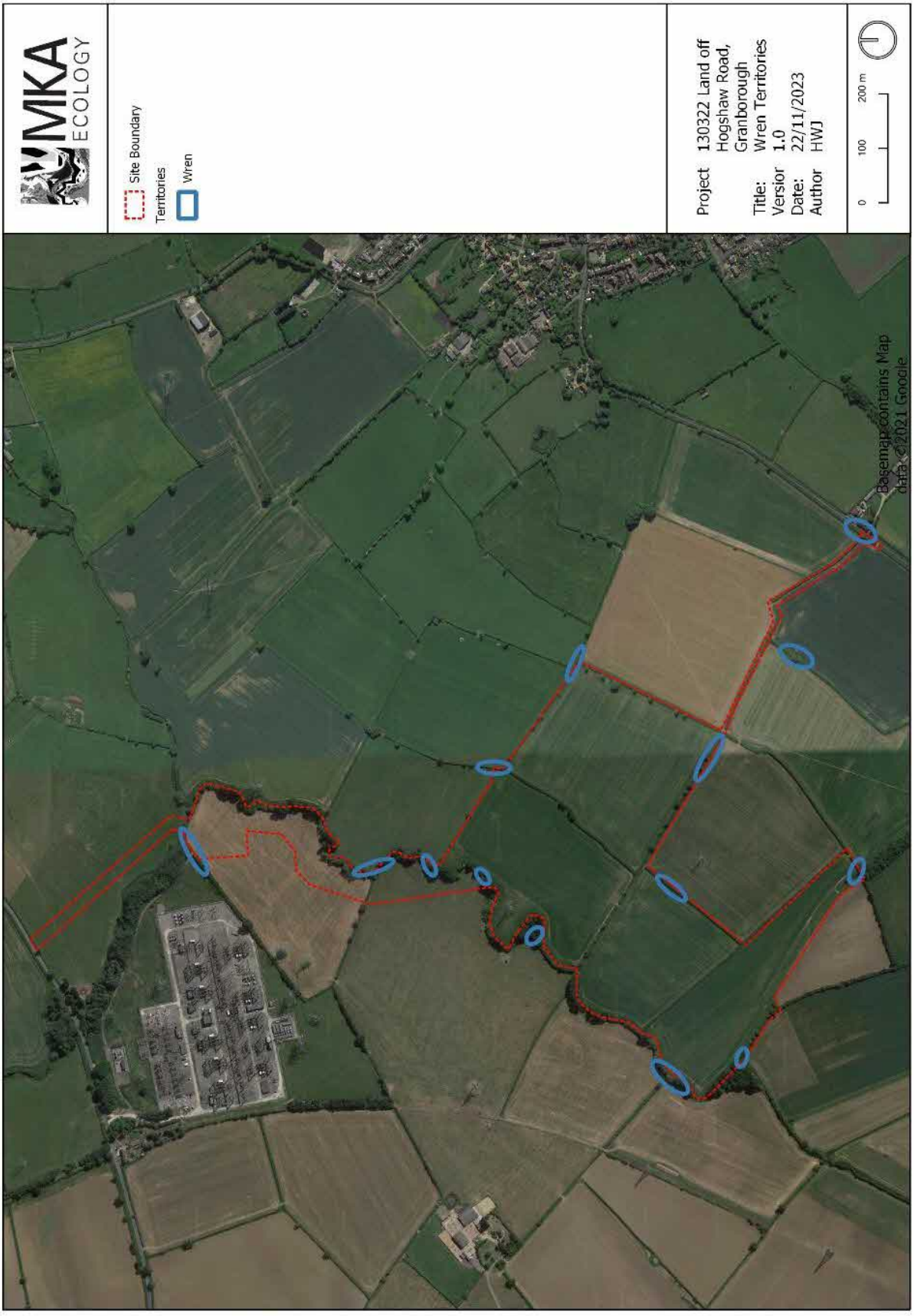


Figure 6: Confirmed song thrush territories

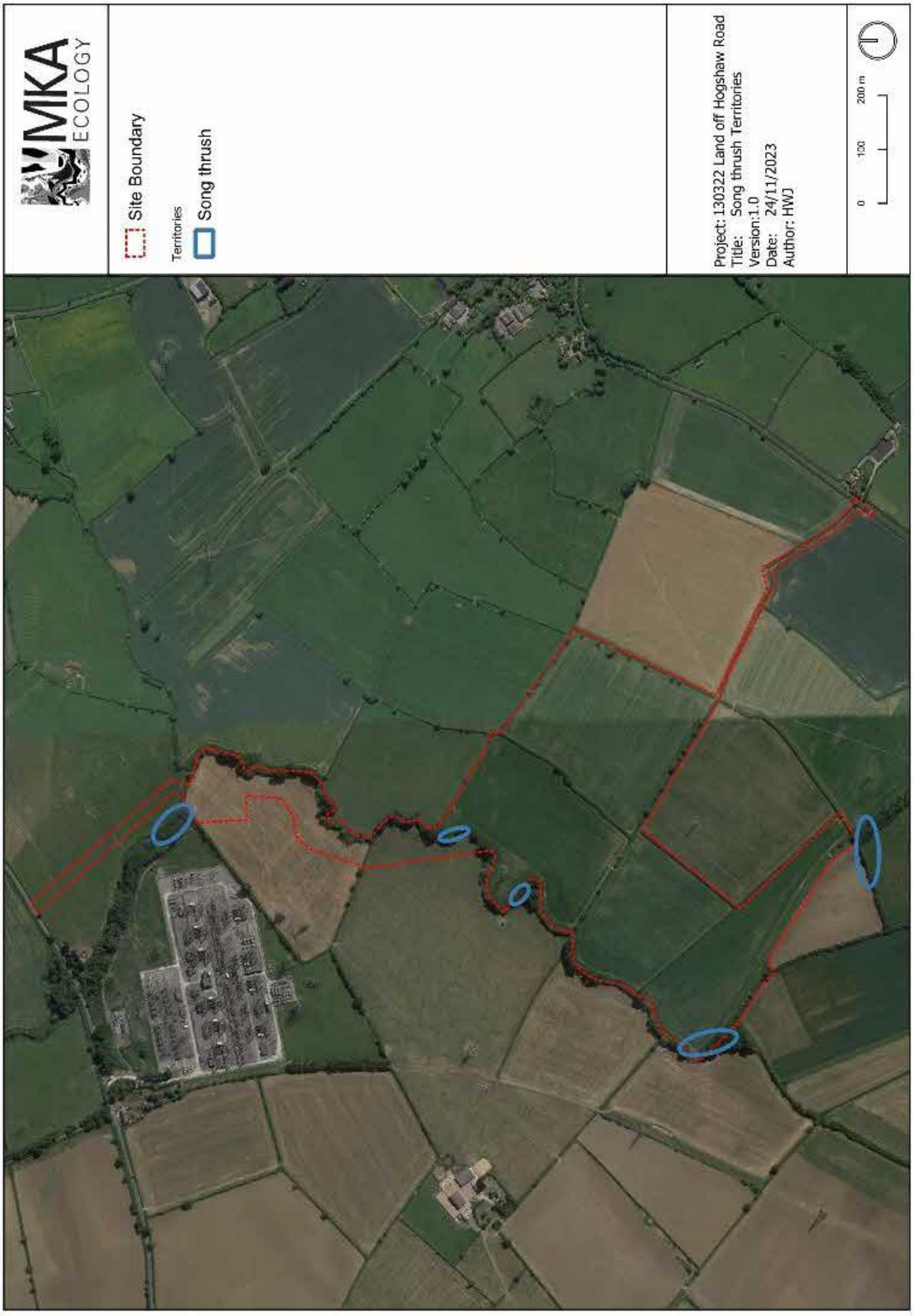
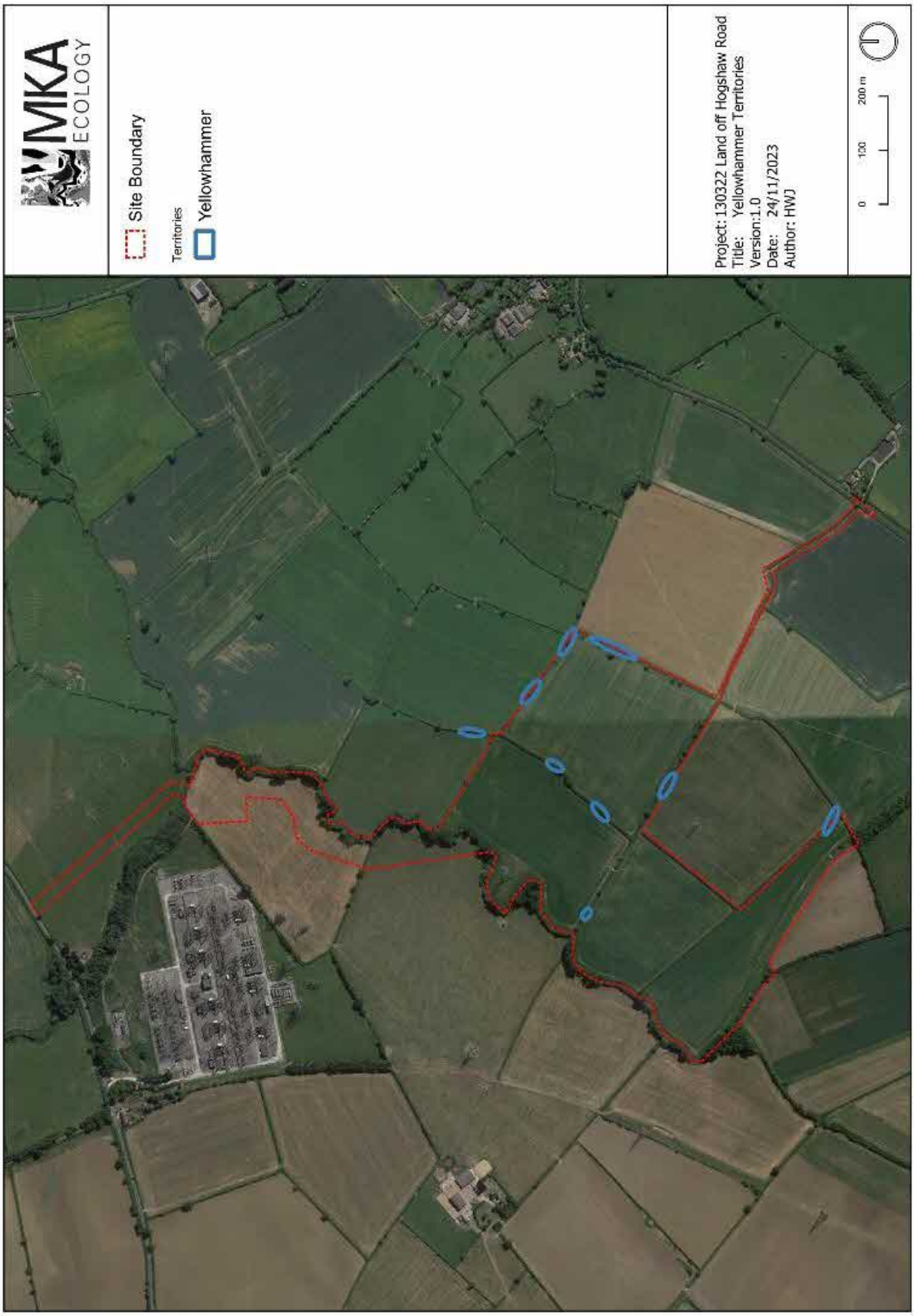


Figure 7: Dunnock territories

Figure 8: Yellowhammer territories



8.3. Appendix 3: Nest box recommendations

Nest boxes should be cleaned at the end of each bird breeding season. All nesting material and other debris should be removed from the box. It should then be scrubbed clean with boiling water to kill any parasites (avoid using any chemicals). Once the box is clean, it should be left to dry out thoroughly. Under the Wildlife and Countryside Act 1981 it is an offence to disturb breeding birds and therefore annual cleaning is best undertaken from October to January when there is no risk of disturbing breeding birds.

Tawny owl boxes

Tawny owls prefer to nest in areas of woodland or well-wooded parks, squares and large gardens with tall, mature trees and whilst will forage in this habitat, will also forage in areas of grassland, and scrub habitat. Tawny owls have several roost sites which they will use at different times of the year.
The best box is a chimney-style box made to mimic the hollow, rotten end of a broken branch with internal dimensions of approximately 795mm x 230mm x 230mm, open at the upper end.

The nest box can be fixed at an angle of 45° in a large tree fork, or slung beneath a sloping branch, or fixed by an angled strip of wood to a vertical trunk. Drainage holes should be present in the bottom with wood chips or stone chippings inside.

Tawny owl		
Example	**Description**	**Picture**
Schwegler Tawny Owl Box No 5	www.schwegler-nature.com https://www.nhbs.com/no-5-schwegler-owl-box The front panel can be removed for inspection and cleaning purposes. The floor should be covered by a layer of sawdust or similar material.	
Tawny owl wooden nest box	https://www.vinehousefarm.co.uk/wooden-nest-boxes-tawny-owl/ The Tawny Owl Nest Box is made to order with FSC timber, felt roof and eco friendly preservative. There is a ledge to provide a	

Tawny owl		
Example	**Description**	**Picture**
	safe area for the chicks when they first emerge as well as a door to the side to allow for cleaning and inspection. Built based on BTO guidelines.	
Tawny owl nest box	https://www.nhbs.com/tawny-owl-nest-box The Tawny Owl Nest Box is made from plywood and should be mounted to the underside of a branch at an angle of 45° or less to the vertical (see image). It is recommended that ratchet straps or polypropylene rope (not included) are used to secure the box as these will cause minimal damage to the tree. In populated areas the box should be sited at a minimum of 3.7m from the ground. In quieter or more remote locations, it may be placed at a height of 3m. Always ensure that the entrance of the box is facing away from the prevailing wind.	

Generalist boxes

Boxes to attract garden birds and woodland breeding species such as tits, nuthatch, redstart and pied flycatcher can be placed in gardens, orchards, woodlands and a wide variety of other habitats. The species of birds attracted to the box will depend upon the size of the entrance hole (see table below).

Boxes should be fixed two to five metres up a tree or wall, out of the reach of predators such as domestic cats. Unless there are trees or buildings, which give permanent shelter, it is best facing between north and east.

General		
Schwegler No. 1B General Purpose Nest box	www.schwegler-nature.com Suitable for various garden and woodland birds, created with different sized entrance holes to avoid competition between species. Other variations (e.g. 2M) can be free hanging, to deter predators.	
Entrance Hole	**Species**	
26 mm	Blue tit and coal tit, possibly wren. All other species are prevented from using the nest box due to this smaller entrance hole	
32 mm	Great-, blue-, and coal tit, nuthatch, house sparrow	
Oval	Redstart; also used by species that nest in the diameter 32 mm boxes. However, because more light enters the brood chamber, it is preferred by redstarts.	

MKA

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