FIVE ESTUARIES
OFFSHORE WIND FARM

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MKA ECOLOGY

Breeding Bird Survey Baseline Report

Five Estuaries Offshore Wind Farm, Essex

Site	*Five Estuaries Offshore Wind Farm, Essex*
Project number	*121421*
Client name / Address	*SLR Consulting Ltd*

Version number	**Date of issue**	**Revisions**
1.1	*01/02/2023*	*Original*
1.2	***10/05/2023***	***Incorporating territory maps and clarification of methodology for semi-colonial species***

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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 (BARN OWL AND HOBBY) IS PRESENTED IN A SEPARATE APPENDIX**

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1. EXECUTIVE SUMMARY

In April 2022 MKA Ecology Limited was commissioned by SLR Consulting Ltd to undertake a breeding bird survey at land in Essex forming part of the potential corridor for cabling from a new offshore wind farm. Baseline data are reported here for one section of this proposed corridor. Surveys initially covered a larger area, however following clarification of route options the final area was reduced in size. Data from the original survey extent have been provided as raw survey sheets and have not been subject to further analysis. Analysis within this report relates solely to the final, reduced survey area. Four survey visits were completed between April-July 2022, with additional surveys subsequently undertaken for barn owl and hobby and targeted effort to ascertain whether turtle doves were present.

81 species were recorded within the final survey area during the breeding bird survey. 47 of these were breeding, and a further ten were possibly breeding. The remaining 24 were not considered to be breeding onsite. 47 species met the criteria as priority species, either being listed on the Red or Amber lists of species of conservation concern, listed as UK priority species Section 41 of the NERC Act 2006, or listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).

The species assemblage was primarily those associated with arable farmland and hedgerows, with the farm reservoirs also supporting small numbers of waterbirds. Priority species confirmed to be breeding onsite were: greylag goose, mallard, stock dove, woodpigeon, moorhen, sparrowhawk, barn owl, kestrel, hobby, skylark, whitethroat, wren, starling, song thrush, house sparrow, dunnock, yellow wagtail, greenfinch, linnet, corn bunting, yellowhammer and reed bunting. In addition, grey partridge, quail, marsh harrier, red kite, house martin and mistle thrush were possibly breeding. The most numerous of the breeding priority species were skylark (76 territories), woodpigeon (53 territories), wren (47 territories), corn bunting (30 territories), linnet (23 territories), whitethroat (21 territories), dunnock (16 territories), and yellowhammer (12 territories). The high Site-wide numbers of skylark, and high densities of corn bunting in the central part of the Site, were perhaps the most conspicuous feature of the surveys.

The survey did not locate turtle doves onsite despite targeted effort focusing on areas of suitable habitat. Hobby and barn owl surveys confirmed breeding by both species (one barn owl nest and two hobby nests), and when the cabling route is confirmed, further survey effort may be required ahead of construction to ensure there is no risk of disturbance to these Schedule 1 protected species.

Recommendations for mitigation and enhancements are not provided here and will be detailed separately and holistically across the corridor once the proposed route has been confirmed.

2. INTRODUCTION

2.1. Aims and scope of bird surveys

In April 2022 MKA Ecology Limited was commissioned by SLR Consulting Ltd to undertake a breeding bird survey of a corridor of land east of Colchester, Essex as part of work to identify an onshore cabling route for a new offshore windfarm.

The aims of the bird surveys were to:

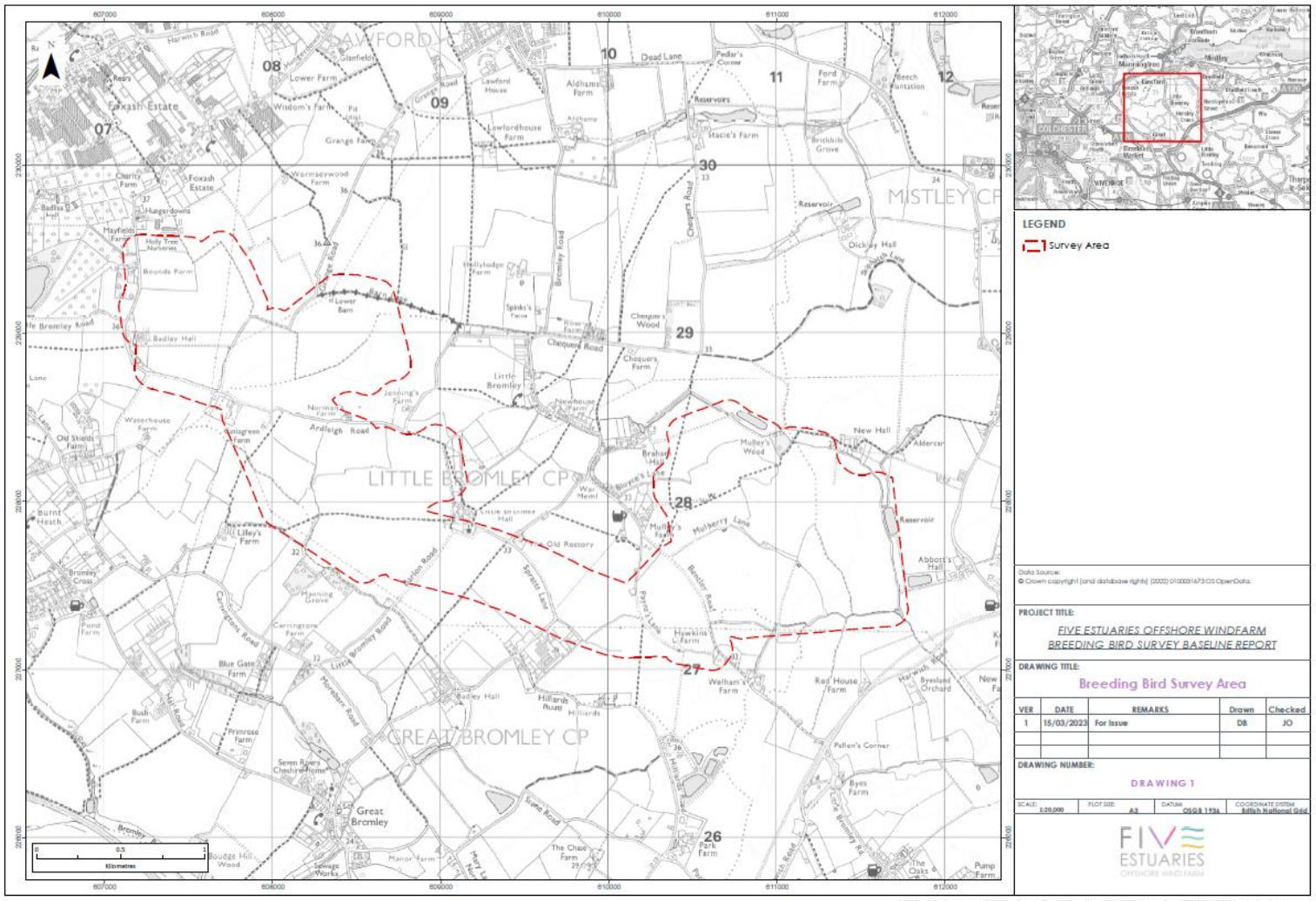
- Record the bird species present on site, and immediate surrounds, and any signs of breeding activity;
- Identify evidence of protected bird species/ bird species of conservation concern at the Site;
- Assess the number of breeding territories of priority species within the potential corridor routes.

2.2. Site description and context

The survey area is shown by the solid red line on the map in Figure 1. Within this report this area is referred to as the Site. Surveys initially covered a larger area; data from this wider extent have been provided as raw survey sheets and have not been subject to further analysis - they are not discussed within this report. The final survey extent, shown by the dotted red line in Figure 1, forms the area covered within this report, with all further discussion relating to this area.

The survey area is c478ha and is located between the villages of Great Bromley and Little Bromley between the A120 and A137 roads east of Colchester, Essex. It falls under the authority of Tendring District Council. Land within the survey area is primarily arable farmland, crossed by several minor roads and hedgerows. There is very limited woodland and wetland within the Site, with the c1ha Mulley's Wood being the largest wooded area; there are two farm reservoirs at the eastern end and several small ponds.

Figure 1: Survey area



2.3. Proposed development

The Five Estuaries windfarm is proposed for construction offshore from Holland-on-Sea, with cabling proposed to come onshore between Frinton-on-Sea and Holland-on-Sea. The area described by this report comprises a section of the potential corridor for cabling to bring power from the windfarm to the grid.

2.4. Previous survey effort

Surveys within the Site area for other taxa have been coordinated by SLR Consulting Ltd. Offsite winter bird surveys were undertaken by MKA Ecology Ltd in 2021-22 at two coastal locations between Frinton-on-Sea and Holland-on-Sea, focusing on waterbirds, with field data provided to SLR Consulting Ltd.

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) reissued in 2021 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.

3. METHODOLOGIES

3.1. 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 in appropriate weather conditions in order to locate and identify all individual birds. All field boundaries and suitable breeding habitats were surveyed. Registrations of birds, using standard British Trust for Ornithology (BTO) two letter species codes, were recorded onto field maps on tablet devices. Specific codes were used for singing, calling, and movements between areas, flying, carrying food or faecal sac, nest building, aggressive encounters and other behaviour.

A total of four visits were undertaken. Although recently updated guidance on breeding bird survey methodology (Bird Survey & Assessment Steering Group, 2022) recommends six visits, given the large extent of the survey area and limited, largely temporary impact of the construction four visits were considered sufficient. Visits took place early in the morning (commencing within 30 mins of sunrise), with the survey area divided into five sections such that each section could be completed before mid-morning, in accordance with best practice guidelines. On each visit individual sections were either surveyed simultaneously by different observers or were surveyed on consecutive days.

Following the final survey visit, the records of birds made on each visit were collated to determine 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 four 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).

For non-breeding species, the territory mapping technique is not appropriate. For non-breeding birds, peak counts for the survey area as a whole were derived from the survey. The peak count for a species was taken as the highest number of individuals recorded on a visit out of the four visits made. For non-territorial species or species which defend a small territory as part of a larger home range, such as woodpigeon and linnet, registrations were divided into clusters (omitting any flocks of non-breeding birds on early visits). Each cluster was then assigned a number of pairs, which is taken as the highest number of confirmed males (second highest number of males present on any single visit); unsexed birds were totalled and halved between the sexes, with any excess birds being treated as males.

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

Breeding: At least two registrations during the survey visits forming a natural cluster. Single records of a nest with eggs would also be considered sufficient evidence.
Possible: Territorial behaviour observed, but only on a single visit or observed in suitable habitat (e.g., corvids)
Not breeding: Seen only flying over, no territorial behaviour recorded or absence of suitable habitat (e.g., wildfowl, gulls).

3.1. Hobby vantage point survey

Additional survey effort was undertaken to determine breeding locations of the Schedule 1-listed hobby *Falco subbuteo*, corresponding to the recommended 'visit 4' in the survey methodology for this species (Hardey *et al.,* 2013). This recommends watches over suitable habitat in mid-August to late September, at which point young birds which are recently fledged or close to fledging and are often highly vocal; this can therefore be a good time for locating territories which may have been missed earlier in the season. Observations made during the breeding bird survey of hobbies and potentially suitable nesting habitat were used to inform the locations for additional survey effort in August 2022. Three areas of potential nesting habitat were identified, with two visits (or a single visit if successful breeding is confirmed on the first visit) made by two observers stationed to allow maximum visibility around the potential nesting areas. These vantage points were undertaken for 2-3 hours at each location from mid-morning and were followed by a walkaround. Since successful nesting was confirmed at two locations on the first visit a second visit was not required at these locations. At the third survey location no hobbies were observed on the first visit and a second visit was undertaken a week later. No licences were needed as observers remained at an appropriate distance to avoid any risk of disturbance.

3.2. Barn owl nest/roost survey

Potential nesting and roosting sites for barn owl *Tyto alba* were identified by surveyors carrying out the main breeding bird survey. A full survey of these sites, which included trees, buildings and nest boxes, was subsequently undertaken in August 2022 by surveyors working under a Schedule 1 licence for barn owls. The survey was undertaken using a ladder, binoculars, camera and torch. Evidence of the presence of barn owls, such as pellets, eggs, nesting material and feathers, was recorded and photographed at each potential site, along with evidence of other species such as kestrel *Falco tinnunculus* and little owl *Athene noctua*. Where evidence of barn owls was recorded, an attempt was made to estimate the age of the material and whether it represented breeding, regular roosting or occasional roosting or feeding perch.

3.3. Turtle dove survey

Consideration was given to the potential need for separate turtle dove *Streptopelia turtur* surveys, with the Site falling within the remaining range of this rapidly-declining Red Listed species and containing potentially suitable habitat. Methodology for the 2021 UK National Turtle Dove Survey required surveyors to make two visits between mid-May and the end of July, with each survey being undertaken between sunrise and 9am (after which time vocal activity decreases markedly). Surveyors were required to listen within 200m of suitable habitat where accessible, to maximise the chance of hearing calling birds.

On the first breeding bird survey visit in April, surveyors were asked to note potential areas of turtle dove habitat. On the May, June and July breeding bird survey visits, surveyors were asked to ensure that marked areas of suitable habitat were covered prior to 9am where at all possible. This ensured that areas were surveyed in accordance with best practice for turtle doves without separate visits being required.

3.4. Survey dates, times and weather conditions

Four survey visits were completed for the breeding bird survey (April 2022 to July 2022), with additional visits in August to survey for hobby and barn owl. Table 1 provides details on the date, time and weather conditions recorded during the Site visits.

Table 1: Date, time and weather conditions of survey visits*

Visit	Date	Start time	End time	Start Temp.	Cloud	Rain	Wind
1	12 April 2022	06:45	10:25	10°c	5/8	None	SE 2-3
1	12 April 2022	07:15	11:00	10°c	7/8	None	SE 1
1	14 April 2022	09:30	10:30	14°c	1/8	None	S 0-1

Visit	Date	Start time	End time	Start Temp.	Cloud	Rain	Wind
1	14 April 2022	06:40	11:00	9°c	2/8	None	S 1-2
1	14 April 2022	06:30	09:00	8°c	0/8	None	0
2	10 May 2022	05:40	10:30	12°c	8/8	Light rain from 9am	SW 3-4
2	11 May 2022	05:30	07:55	12°c	7/8	None	SW 3-4
2	11 May 2022	05:35	10:32	12°c	6/8	None	SW 3
2	12 May 2022	05:35	09:50	8°c	0/8	None	W 1-2
2	12 May 2022	05:40	09:15	6°c	1/8	None	W 2-3
3	15 Jun 2022	04:25	08:50	12°c	0/8	None	SE 0-1
3	15 Jun 2022	05:00	08:20	11°c	0/8	None	E 0-1
3	16 Jun 2022	05:30	09:20	10°c	2/8	None	0
3	16 Jun 2022	04:45	08:50	9°c	1/8	None	SE 1
3	17 Jun 2022	05:00	09:30	17°c	6/8	None	SE 1
4	13 Jul 2022	05:20	08:25	18°c	3/8	None	0
4	13 Jul 2022	05:10	08:40	18°c	4/8	None	0
4	14 Jul 2022	05:15	08:24	14°c	2/8	None	NW 0-1
4	14 Jul 2022	05:15	08:39	14°c	2/8	None	NW 1
4	14 Jul 2022	05:15	09:50	12°c	0/8	None	NW 0-1
Hobby 1	19 Aug 2022	08:50	14:05	22°c	2/8	None	W 2
Hobby 2	23 Aug 2022	13:30	15:00	25°c	2/8	None	SW 2
Barn owl	23 Aug 2022	08:30	14:00	21°c	2/8	None	SW 2

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

3.5. Surveyor, author and reviewer

Breeding bird surveys were undertaken by Andy Symes ACIEEM, Consultant Ecologist at MKA Ecology Ltd, Evan Burdett, Graduate Ecologist at MKA Ecology Ltd, Jack Morris, Graduate Ecologist at MKA Ecology Ltd, Marcus Kohler, Director and Founder at MKA Ecology Ltd, Patrick Safford, Graduate Ecologist at MKA Ecology Ltd, and Stuart Elsom, freelance ornithologist and subcontractor at MKA Ecology Ltd. The hobby survey was undertaken by Evan Burdett, Jack Morris, Andy Symes and Stuart Elsom. The barn owl survey was undertaken by Stuart Elsom and Andy Symes.

Andy has five years' experience undertaking commercial ornithological surveys and Evan, Patrick and Jack have one year's experience. Marcus has over thirty years' experience of commercial ornithological work and Stuart has over ten years' experience and holds a Natural England Schedule 1 licence for barn owl. The report was written by Andy Symes and was reviewed by Marcus Kohler.

3.6. Assessment methodology

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

- 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;
- Essex Biodiversity Action Plan Priority Species; 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, 2019).

3.7. Survey constraints

Access requests were made to all landowners/managers with land falling within the Site boundary. Where access was granted, the only constraints to surveyors usually related to avoiding trampling crops and keeping away from livestock, and these constraints did not preclude effective coverage of the Site. Where access was refused, or no response received, surveyors were only able to view from public rights of way, or from adjacent land where access had been granted. In some cases areas that were accessible on one visit were not accessible on another, and vice versa. Overall, the open nature of the majority of the Site, and the characteristic species present, meant that even where areas were inaccessible on a given visit it was not felt that coverage was significantly constrained, with birds generally visible or audible from adjacent areas.

There were no other constraints encountered in terms of coverage of the site, timings or weather conditions.

4. RESULTS

4.1. Breeding bird survey

A total of 81 species were recorded during the breeding bird survey; 48 species were considered to be breeding, nine possibly breeding and 24 not breeding. Out of the 81 species recorded, 47 of these were classified as priority species on the basis of their local or national designations.

The most numerous of the breeding priority species were skylark *Alauda arvensis* (76 territories onsite), woodpigeon *Columba palumbus* (53 territories), wren *Troglodytes troglodytes* (47 territories), corn bunting *Emberiza calandra* (30 territories), linnet *Linaria cannabina* (23 pairs), whitethroat *Sylvia communis* (21 territories), dunnock *Prunella modularis* (16 territories), and yellowhammer *Emberiza citrinella* (12 territories).

The species assemblage represented a mixture of those associated with arable farmland, hedgerows and woodland, and generally consisted of species widespread in farmed lowland habitats in the UK.

Species accounts for priority species which were breeding or possibly breeding are given in Section 4.2. A full list of species recorded during the breeding bird survey and their breeding status is provided in Table 2. Territory numbers and peak counts are provided only for Wildlife and Countryside Act 1981 Schedule 1 species, Birds of Conservation Concern Red and Amber listed species, species listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act, and Local Priority Species listed on the Essex Biodiversity Action Plan (Bird Survey & Assessment Steering Group, 2022).

GIS shapefiles of the records for breeding priority species and their territories have been provided separately.

Table 2: All species recorded during the Five Estuaries breeding bird survey (April to July 2022) and their breeding status.

Species	Systematic name	Breeding status onsite	Territories onsite (priority species)*
Red-legged partridge	*Alectoris rufa*	**Breeding**	**-**
Grey partridge	*Perdix perdix*	**Possibly breeding**	**-**
Quail	*Coturnix coturnix*	**Possibly breeding**	**-**
Pheasant	*Phasianus colchicus*	**Breeding**	**-**
Greylag goose	*Anser anser*	**Breeding**	**1**
Mute swan	*Cygnus olor*	**Non-breeding**	**-**
Egyptian goose	*Alopochen aegyptiaca*	**Non-breeding**	**-**
Mallard	*Anas platyrhynchos*	**Breeding**	**3**
Tufted duck	*Aythya fuligula*	**Possibly breeding**	**-**
Swift	*Apus apus*	**Non-breeding**	**-**
Feral pigeon	*Columba livia*	**Possibly breeding**	**-**
Stock dove	*Columba oenas*	**Breeding**	**6 (five breeding clusters. Two additional pairs offsite)**
Woodpigeon	*Columba palumbus*	**Breeding**	**53 (ten breeding clusters. 11 additional pairs offsite)**
Moorhen	*Gallinula chloropus*	**Breeding**	**2**
Coot	*Fulica atra*	**Breeding**	**-**
Little grebe	*Tachybaptus ruficollis*	**Breeding**	**-**
Great crested grebe	*Podiceps cristatus*	**Breeding**	**-**
Whimbrel	*Numenius phaeopus*	**Non-breeding**	**-**
Snipe	*Gallinago gallinago*	**Non-breeding**	**-**
Common sandpiper	*Actitis hypoleucos*	**Non-breeding**	**-**
Green sandpiper	*Tringa ochropus*	**Non-breeding**	**-**
Black-headed gull	*Chroicocephalus ridibundus*	**Non-breeding**	**-**
Mediterranean gull	*Larus melanocephalus*	**Non-breeding**	**-**

Species	Systematic name	Breeding status onsite	Territories onsite (priority species)*
Common gull	*Larus canus*	**Non-breeding**	-
Herring gull	*Larus argentatus*	**Non-breeding**	-
Lesser black-backed gull	*Larus fuscus*	**Non-breeding**	-
Cormorant	*Phalacrocorax carbo*	**Non-breeding**	-
Grey heron	*Ardea cinerea*	**Non-breeding**	-
Little egret	*Egretta garzetta*	**Non-breeding**	-
Sparrowhawk	*Accipiter nisus*	**Breeding**	1
Marsh harrier	*Circus aeruginosus*	**Possibly breeding**	-
Red kite	*Milvus milvus*	**Possibly breeding**	-
Buzzard	*Buteo buteo*	**Breeding**	-
Barn owl	*Tyto alba*	**Breeding**	1
Little owl	*Athene noctua*	**Breeding**	-
Great spotted woodpecker	*Dendrocopos major*	**Breeding**	-
Green woodpecker	*Picus viridis*	**Breeding**	-
Kestrel	*Falco tinnunculus*	**Breeding**	2
Hobby	*Falco subbuteo*	**Breeding**	2
Peregrine	*Falco peregrinus*	**Non-breeding**	-
Magpie	*Pica pica*	**Breeding**	-
Jackdaw	*Corvus monedula*	**Breeding**	-
Rook	*Corvus frugilegus*	**Non-breeding**	-
Carrion crow	*Corvus corone*	**Breeding**	-
Raven	*Corvus corax*	**Possibly breeding**	-
Coal tit	*Periparus ater*	**Breeding**	-
Blue tit	*Cyanistes caeruleus*	**Breeding**	-

Species	Systematic name	Breeding status onsite	Territories onsite (priority species)*
Great tit	*Parus major*	**Breeding**	**-**
Skylark	*Alauda arvensis*	**Breeding**	**76**
Swallow	*Hirundo rustica*	**Breeding**	**-**
House martin	*Delichon urbicum*	**Possibly breeding**	**-**
Long-tailed tit	*Aegithalos caudatus*	**Breeding**	**-**
Willow warbler	*Phylloscopus trochilus*	**Non-breeding**	**-**
Chiffchaff	*Phylloscopus collybita*	**Breeding**	**-**
Sedge warbler	*Acrocephalus schoenobaenus*	**Non-breeding**	**-**
Blackcap	*Sylvia atricapilla*	**Breeding**	**-**
Garden warbler	*Sylvia borin*	**Non-breeding**	**-**
Lesser whitethroat	*Sylvia curruca*	**Breeding**	**-**
Whitethroat	*Sylvia communis*	**Breeding**	**21 (seven additional pairs offsite)**
Goldcrest	*Regulus regulus*	**Breeding**	**-**
Wren	*Troglodytes troglodytes*	**Breeding**	**47 (five additional pairs offsite)**
Starling	*Sturnus vulgaris*	**Breeding**	**1**
Ring ouzel	*Turdus torquatus*	**Non-breeding**	**-**
Blackbird	*Turdus merula*	**Breeding**	**-**
Redwing	*Turdus iliacus*	**Non-breeding**	**-**
Song thrush	*Turdus philomelos*	**Breeding**	**6 (one additional pairs offsite)**
Mistle thrush	*Turdus viscivorus*	**Possibly breeding**	**-**
Robin	*Erithacus rubecula*	**Breeding**	**-**
House sparrow	*Passer domesticus*	**Breeding**	**7 (four breeding clusters)**
Dunnock	*Prunella modularis*	**Breeding**	**16 (two additional pairs offsite)**
Yellow wagtail	*Motacilla flava*	**Breeding**	**4**

Species	Systematic name	Breeding status onsite	Territories onsite (priority species)*
Pied wagtail	*Motacilla alba*	**Breeding**	**-**
Meadow pipit	*Anthus pratensis*	**Non-breeding**	**-**
Chaffinch	*Fringilla coelebs*	**Breeding**	**-**
Brambling	*Fringilla montifringilla*	**Non-breeding**	**-**
Greenfinch	*Chloris chloris*	**Breeding**	**2**
Linnet	*Linaria cannabina*	**Breeding**	**23 (eight breeding clusters. Three additional pairs offsite)**
Goldfinch	*Carduelis carduelis*	**Breeding**	**-**
Corn bunting	*Emberiza calandra*	**Breeding**	**30 (two additional pairs offsite)**
Yellowhammer	*Emberiza citrinella*	**Breeding**	**12 (five additional pairs offsite)**
Reed bunting	*Emberiza schoeniclus*	**Breeding**	**- (one additional pair offsite)**

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

Table 3: Priority species recorded on the Five Estuaries breeding bird surveys and their conservation status

Common name	Scientific name	Breeding status onsite	Annex 1	Schedule 1 [1]	BOCC 4 [2]	Section 41 [3]	Local Priority Species [4]
Grey partridge	*Perdix perdix*	Possibly breeding	-	-	Red	Yes	Yes
Quail	*Anser anser*	Possibly breeding	-	Yes	Amber	-	-
Greylag goose	*Anser anser*	Breeding	-	-	Amber	-	-
Mallard	*Anas platyrhynchos*	Breeding	-	-	Amber	-	-
Swift	*Apus apus*	Non-breeding	-	-	Red	-	-

Common name	Scientific name	Breeding status onsite	Annex 1	Schedule 1 [1]	BOCC 4 [2]	Section 41 [3]	Local Priority Species [4]
Stock dove	*Columba oenas*	Breeding	-	-	Amber	-	-
Woodpigeon	*Columba palumbus*	Breeding	-	-	Amber	-	-
Moorhen	*Gallinula chloropus*	Breeding	-	-	Amber	-	-
Whimbrel	*Numenius phaeopus*	Non-breeding	-	Yes	Red	-	-
Snipe	*Gallinago gallinago*	Non-breeding	-	-	Amber	-	-
Common sandpiper	*Actitis hypoleucos*	Non-breeding	-	-	Amber	-	-
Green sandpiper	*Tringa ochropus*	Non-breeding	-	Yes	Amber	-	-
Black-headed gull	*Larus ridibundus*	Non-breeding	-	-	Amber	-	-
Mediterranean gull	*Larus melanocephalus*	Non-breeding	Yes	Yes	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	Yes	-	Green	-	-
Sparrowhawk	*Accipiter nisus*	Breeding	-	-	Amber	-	-
Marsh harrier	*Circus aeruginosus*	Possibly breeding	Yes	Yes	Amber	-	-
Red kite	*Milvus milvus*	Possibly breeding	Yes	Yes	Green	-	-
Barn owl	*Tyto alba*	Breeding	-	Yes	Green	-	-
Kestrel	*Falco tinnunculus*	Breeding	-	-	Amber	-	-

Common name	Scientific name	Breeding status onsite	Annex 1	Schedule 1 [1]	BOCC 4 [2]	Section 41 [3]	Local Priority Species [4]
Hobby	*Falco subbuteo*	Breeding	-	Yes	Green	-	-
Peregrine	*Falco peregrinus*	Non-breeding	Yes	Yes	Green	-	-
Rook	*Corvus frugilegus*	Non-breeding	-	-	Amber	-	-
Skylark	*Alauda arvensis*	Breeding	-	-	Red	Yes	Yes
House martin	*Delichon urbicum*	Possibly breeding	-	-	Red	-	-
Willow warbler	*Phylloscopus trochilus*	Non-breeding	-	-	Amber	-	-
Sedge warbler	*Acrocephalus schoenobaenus*	Non-breeding	-	-	Amber	-	-
Whitethroat	*Sylvia communis*	Breeding	-	-	Amber	-	-
Wren	*Troglodytes troglodytes*	Breeding	-	-	Amber	-	-
Starling	*Sturnus vulgaris*	Breeding	-	-	Red	Yes	-
Ring ouzel	*Turdus torquatus*	Non-breeding	-	-	Red	Yes	-
Song thrush	*Turdus philomelos*	Breeding	-	-	Amber	Yes	Yes
Mistle thrush	*Turdus viscivorus*	Possibly breeding	-	-	Red	-	-
House sparrow	*Passer domesticus*	Breeding	-	-	Red	-	-
Dunnock	*Prunella modularis*	Breeding	-	-	Amber	Yes	-
Yellow wagtail	*Motacilla flava*	Breeding	-	-	Red	Yes	-
Meadow pipit	*Anthus pratensis*	Non-breeding	-	-	Amber	-	-
Brambling	*Fringilla montifringilla*	Non-breeding	-	Yes	Green	-	-

Common name	Scientific name	Breeding status onsite	Annex 1	Schedule 1 [1]	BOCC 4 [2]	Section 41 [3]	Local Priority Species [4]
Greenfinch	*Chloris chloris*	Breeding	-	-	Red	-	-
Linnet	*Linaria cannabina*	Breeding	-	-	Red	Yes	-
Corn bunting	*Emberiza calandra*	Breeding	-	-	Red	Yes	-
Yellowhammer	*Emberiza citronella*	Breeding	-	-	Red	Yes	-
Reed bunting	*Emberiza schoeniclus*	Breeding	-	-	Amber	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)
[5] Local Priority Species, Essex Biodiversity Action Plan

4.2. Species accounts

19 of the priority species recorded (swift, whimbrel, snipe, common sandpiper, green sandpiper, black-headed gull, Mediterranean gull, common gull, herring gull, lesser black-backed gull, little egret, peregrine, rook, willow warbler, sedge warbler, ring ouzel, redwing, meadow pipit and brambling) were classified as non-breeding and are not discussed further in the species accounts.

Grey partridge

Whilst widely distributed across lowland farmland in England, grey partridge has undergone substantial population declines since the 1950s and typically occur at low densities. This has led to the species' designation as a Section 41 Species of Principal Importance and as an Essex BAP priority species. Grey partridge is also included on the BoCC Red List. Between the two National Atlases, confirmed breeding records across Essex declined by around 35%, and it remains thinly spread across Essex with reasonable numbers only in coastal regions (Wood, 2007).

The breeding bird survey recorded a single instance of a pair flushed from fields at the western end of the Site on visit 2, suggesting possible breeding onsite (this resident species can be elusive and hard to detect on breeding bird surveys).

Quail

Quail is a scarce summer visitor which occurs in fluctuating numbers in arable crops and grassland, primarily in southern England. It is protected under Schedule 1 of the Wildlife and Countryside Act and is included on the BoCC Amber List. Between 1950 and 2004 breeding was confirmed just four times (Wood, 2007), however further sightings of adults and the presence of birds calling from the same areas in consecutive years suggest that breeding may occur irregularly at a wide number of sites. There has been a very gradual increase in records (perhaps due to increased observer coverage).

Quail were only recorded on visit 3, in June. These were primarily in a large linseed field in the central part of the Site, where a minimum of three, possibly five birds were singing. A further singing bird was recorded on the same visit in a separate field to the east. It is unclear whether the absence of further records meant that these were migrant individuals that did not remain to breed, or whether they quickly stopped calling on settling down to breed, at which point they would have become essentially undetectable.

Greylag goose

Greylag goose is a widespread and abundant species which is included on the BoCC Amber List due to an internationally-important wintering population occurring at ten or fewer sites in the UK. Breeding birds in southern England are generally considered to be of feral origin. Within Essex, there has been a steady expansion of breeding birds in the county since the 1980s. Numbers are almost certainly under-recorded but 86 pairs were recorded in 2002 (Wood, 2007).

Greylag geese were observed in small numbers on the farm reservoirs at the eastern end of the Site, with likely at least one breeding pair, although no young were observed.

Mallard

The mallard is the most widely distributed species of wildfowl in England. Whilst there was no discernible change in numbers for many years, there has been a slow, steady decline in the British totals counted by WeBS population index by 1997/98 and the index actually fell on ten occasions between 1987/88 and 1999/2000 (Brown *et al* 2005). Mallard is included in the BoCC Amber List. In Essex, the population may lie in the region of 1,500-2,000 pairs, with little change in status over the 55 years preceding the Atlas (Wood, 2007).

Mallards were observed in small numbers across the Site, sometimes away from water. A minimum of three pairs bred, with three separate females with dependent young observed on the eastern farm reservoirs.

Stock dove

Stock dove is a widespread and numerous breeding resident in England. England supports 44% of the European population of stock dove and is therefore included on the BoCC Amber List. Significant increases in the English population have been recorded in both the short (41%, 2008-2018) and medium term (26%, 1995-2018; Harris *et al.* 2020), however these trends have been driven by the northern and western regions of England. The bird's favoured habitats are parkland, woodland edge and wooded farmland. Following declines in the first half of the 20th century, numbers recovered from the 1970s, with the local CBC index for Essex showing an 80% increase between 1981-94, with numbers likely stable or increasing since (Wood, 2007).

Stock doves were widespread in low numbers across the majority of the Site, with five breeding clusters identified, a minimum of six breeding pairs present and a confirmed nest in an area of isolated farm buildings. An additional two pairs were estimated offsite.

Woodpigeon

Woodpigeon is one of the most common and widespread species in the UK; it was recorded in 90% of squares surveyed during the 2021 breeding bird survey and the UK population is estimated to be 5,150,000 pairs (Harris et al., 2021). The population appears to have benefited from recent changes in agricultural practice, which is reflected in an increase of 34% between 1995 and 2018. 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). Within Essex, anecdotal evidence suggests that since the 1980s numbers have remained relatively stable despite continuing to sustain heavy shooting losses. Atlas surveys show a 100% or near 100% presence in every 10km square (Wood, 2007).

Woodpigeon were numerous across the Site on all visits, with analysis suggesting at least 53 pairs within ten breeding clusters, plus another 11 pairs just offsite.

Moorhen

Moorhen is a widespread and common resident bird in the UK and is found in a range of freshwater habitats. A recent decline in the breeding population of 28% between 2008 and 2018 (Harris et al., 2020) has resulted in the moorhen being moved to the Amber List (Stanbury et al., 2021). In Essex it has always been an abundant or very common species with little change in status. Breeding was confirmed in 80.4% of tetrads and every 10km square for the Essex Atlas (Wood, 2007).

Single territories were recorded at a pond at the western end of the Site, and on a farm reservoir in the northeast corner, with two additional records of single birds.

Sparrowhawk

This small raptor is a widespread resident across a variety of habitats. A specialist predator of small birds, it was recently moved from Green to the Amber List (Stanbury *et al.,* 2021) due to population declines which have been attributed to disease, spreading from prey species such as greenfinch. Following serious declines linked to organochlorine pesticides, a slow recovery became more marked in the 1980s. The Essex population has been estimated to lie in the region of 475-715 breeding pairs, based on densities recorded in Suffolk (Wood, 2007).

Sparrowhawks were recorded occasionally in widespread occasions across the Site. The observation of a female carrying food just offsite at the eastern end suggests it is highly likely at least one breeding territory extended onto the Site, even if the nest was likely offsite.

Marsh harrier

Marsh harrier is a scarce breeding species predominantly restricted to east and southeast England. It is listed on Annex 1 of the EU Birds Directive, Schedule 1 of the Wildlife and Countryside Act (1981), as amended, and is included on the BoCC Amber List due to its localised breeding population and small wintering population. Reduced to a single breeding female in 1971, it has since increased to c400 pairs in the UK. The first Essex breeding record for around 150 years occurred in 1992. There was a subsequent slow increase to at least nine nests in 2003 (Wood, 2007), and the current total is likely to be significantly higher.

There were two records of a male marsh harrier on the survey, with one seen to catch a skylark. It is possible that the Site forms part of a feeding territory but the low number of records suggests it is very unlikely there was a nest onsite.

Red kite

Formerly persecuted and restricted in distribution to mid-Wales, red kite is now increasingly widespread and has undergone the second highest long-term increase of any bird in the UK. Results from the BTO

Breeding Bird Survey (BBS) indicate numbers have risen by 1,738% in the UK and by over 20,000% in England between 1995 and 2018 (Harris et al. 2020). This success 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. The status according to The Birds of Essex is now out of date due to the exceptional subsequent increase in breeding pairs across southern and eastern England. At the time of publication records had begun to increase with a pair resident at one site in 2004 (Wood, 2007).

There were only two records of red kite on the survey, both towards the eastern end. It is possible that the Site forms part of a feeding territory, but the low number of records suggests it is very unlikely there was a nest onsite.

Barn owl

There are an estimated 4,400 breeding pairs of barn owl in Britain. It is a species of European concern due to breeding population declines, which accelerated in the second half of the twentieth century and are likely to have resulted from agricultural intensification (Shrubb, 2003). As a result, it is listed on Schedule 1 of the Wildlife and Countryside Act (1981). Subsequent increases in population between 1995-2008 have been reported, with factors such as the advent of agricultural set-aside and management of field margins via agri-environmental schemes regarded as important in their recent success (Askew *et al.* 2017, Dadam *et al.* 2011). A survey undertaken between 1981-85 gave rise to an estimate of 120 pairs in Essex, representing a significant decline (Wood, 2007).

During the main breeding bird survey single barn owls were observed in two locations, both of which contained potential nesting or roosting sites. A barn owl survey subsequently undertaken in August inspected 17 locations (including trees, nest boxes and buildings) identified as potential nesting or roosting sites. Only one inspected site was confirmed to have been used for nesting by barn owls, with evidence of roosting or feeding barn owls identified at a further four locations: one well-used roost, two occasional roosts and a barn containing feeding perches (but no suitable nesting locations). The Site forms part of a territory of one confirmed pair, and other areas of the Site were clearly regularly used for feeding and roosting by one or more additional birds. Full details of the locations for this specially protected species are presented separately in a confidential Appendix.

Kestrel

Kestrel is one of England's most numerous and widespread birds of prey. Kestrel numbers fell until the late 1980s and appeared to have stabilised since then, however the British Trust for Ornithology's Breeding Bird Survey (BBS, Harris *et al.,* 2019) found a 17% decline in England between 1995 and 2017, though numbers remained relatively stable over in the East of England this period. The species is included on the BoCC Amber List. The Essex population was estimated to be in the range 600-1,100 pairs and declining (Wood, 2007).

Kestrels were relatively scarce onsite and no nests were located, however the distribution or records suggests at least two breeding territories were present. At one of these territories, kestrel pellets were found at two locations during the barn owl survey.

Hobby

Hobby is a widespread breeding migrant occurring throughout southern and central Britain which is included on Schedule 1 of the Wildlife and Countryside Act (1981), as amended, due to historic vulnerability to disturbance from egg collectors. In Essex, the species resumed breeding in very small numbers in the 1970s and by the end of the 20th century there were 30-50 summering pairs (Wood, 2007).

During the main breeding bird survey hobbies were observed carrying food in two locations, and one nest site was confirmed. Subsequent vantage point surveys in August confirmed successful breeding at this nest with at least one well-grown juvenile calling. A second successful nest was confirmed at another location just outside the final Site area. Here four juveniles were confirmed to have fledged and left the nest. In addition, potential nesting habitat in another area of woodland close to one of the confirmed nests was surveyed on two occasions in August but no hobbies were located. Given the evidence of the nearby nest site, it is likely that an earlier record close to this woodland was of a bird heading for the confirmed nest site nearby. Full details of the locations for this specially protected species are presented separately in a confidential Appendix.

Skylark

Skylark is on the Birds of Conservation Concern Red List, is included on the Section 41 Species of Principal Importance and is listed as a priority species on the Essex Biodiversity Action Plan based on population declines, although it remains very common and widespread throughout lowland England. Although it has undergone a long term decline in the county, it remained present in 97.5% of tetrads for the Essex Atlas (Wood, 2007).

Skylark was the most numerous of the species assessed for the breeding bird survey, with singing birds abundant in arable farmland across the Site, although relatively less abundant at the eastern end. The high density and mobility of singing individuals can make delineation of territories challenging. Nevertheless, a minimum of 76 territories was estimated, representing a density of c0.16 pairs per hectare across the Site as a whole.

House martin

A widespread and abundant summer visitor, house martin is listed on the BoCC Red List due to a rapid breeding population decline in the UK and a wider population decline across Europe. In Essex, declines are also evident although the species remains widespread across the county (Wood, 2007).

House martins were only recorded onsite twice with a maximum of three birds seen. A nest was located on houses offsite to the south but there was no evidence that breeding occurred on or immediately adjacent to the site.

Whitethroat

Whitethroat is a numerous summer visitor to hedgerows, scrub and heathland, with all individuals wintering in West Africa. Following a population crash in 1969 due to a drought in the wintering range, there was a subsequent recovery, however the population remained half the pre-1969 level. It was recently moved from Green to Amber in the BoCC Amber List (Stanbury *et al.*, 2021) due an increasing rate of population decline. Whitethroats were breeding in 94.3% of tetrads for the Essex Atlas, making the species the most widespread warbler in the county (Wood, 2007).

Whitethroats were numerous within the hedgerows throughout, with 21 territories estimated onsite and an additional seven just offsite. Their abundance seemed to be highest in the western portion of the Site.

Wren

Wren is the UK's most common breeding bird and breeds widely across country in woodland, farmland, heathland, and urban habitats. They occasionally experience short term declines following a harsh winter. Wren are now Amber listed under the BoCC on account of the UK holding >20% of the European Population (Stanbury *et al*., 2021). The species was present in 96.6% of tetrads for the Essex Atlas, but the population in the county has not been estimated (Wood, 2007).

Wrens were abundant across the Site wherever there was wooded cover, including the small plantations, large gardens and hedgerows with trees, with an estimated 47 breeding territories onsite and another five just offsite.

Song thrush

Song thrush is a widespread and common resident breeding species which has undergone a steady population decline since the mid-1970s. As a result, song thrush is listed as a Species of Principal Importance (NERC Act, 2006), and is included on the BoCC Red List and as a priority species on the Essex BAP. In Essex it was recorded breeding in 94% of tetrads, with a decline evident since the 1980s (Wood, 2007).

The lack of extensive wooded cover meant that song thrush was not a common species at the Site, although six territories were at least partly within the boundary with an additional territory just offsite.

Mistle thrush

A numerous and widely distributed breeding resident, mistle thrush has undergone a slight population decline in recent years, leading to the species' inclusion on the BoCC Amber List. In Essex it was

recorded in 67.2% of tetrads, at lower densities than blackbird and song thrush, and has suffered an ongoing local decline since the mid-1990s (Wood, 2007).

Mistle thrush was recorded only on visit 3, including a singing bird at the western boundary of the Site. As this species is an early breeder which can be elusive when not singing, it has been classified as possibly breeding despite records coming from only one visit.

House sparrow

House sparrow is a widespread and numerous resident breeder which has undergone severe population declines in recent decades due to changes in agricultural practices. The species is a Section 41 Species of Principal Importance and is included on the BoCC Red List due to severe long-term population declines in both Britain and Europe. In Essex declines have been evident since the 1970s, although it was still breeding in 99.3% of tetrads surveyed for the Essex Atlas (Wood, 2007).

House sparrows were noted in small numbers, especially where there were farm buildings and houses around the perimeter of the Site. There were estimated to be a minimum of seven breeding pairs within four clusters.

Dunnock

Dunnock is on the Birds of Conservation Concern Amber List and a Section 41 Species of Principal Importance, which 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. In Essex the population has generally been considered stable, and the species occurred in 96.8% of tetrads (Wood, 2007).

Dunnocks were frequently recorded in hedgerows, wooded areas and gardens across the Site, with an estimated 16 territories onsite and an additional two just offsite.

Yellow wagtail

The UK population of yellow wagtail has undergone a 72% decline between 1970 and 2010, however, small, though non-statistically significant, increases in population have been recorded since. Almost the entire population of the *flavissima* race breeds within the UK, with only a small proportion present on the near continent. As such it is a Section 41 Species of Principal Importance and is included on the BoCC Red List. In Essex it was found in 50.7% of tetrads, with the distribution concentrated around the coast and along main river valleys and a general absence north and west of Colchester; declines and range contractions, especially inland, have been noted (Wood, 2007).

Yellow wagtails were present in low numbers in the arable fields across the Site, although some fields were clearly more favoured than others. Some of the records earlier in the season may have related to migrant birds that did not stay to breed, however at least four breeding pairs were estimated. Of note was a male of the continental race *flava* holding territory and potentially nesting with a female of the British race.

Greenfinch

Although still a numerous and widespread species of hedgerows, scrub and gardens, greenfinch was recently moved from the Green List to the Red List on BoCC (Stanbury *et al*., 2021) due to rapid recent declines which have primarily been driven by disease. In Essex the species was recorded in 96% of tetrads (Wood, 2007).

Greenfinches were only rarely encountered during the breeding bird survey. Two breeding territories were identified at the far north-western end of the Site.

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 20% in England between 1995 and 2017, and a non-significant decrease of 9% has been found in the East of England over the same period (Harris *et al.* 2021). Linnet is a Section 41 Species of Principal Importance and is on the BoCC Red list. The BBS index graphs (Harris *et al.,* 2021) for England as a whole have been showing a gentle increase since 2007. In Essex there have been declines since at least the 1980s, although the species remained present in 91% of tetrads (Wood, 2007).

Linnets were found to be common in the arable farmland and hedgerows across the Site. Analysis of eight breeding clusters for this semi-colonial species suggests at least 23 breeding pairs were present onsite, and an additional three pairs just offsite.

Corn bunting

Corn bunting is a formerly widespread breeding resident which has undergone a rapid population decline since the early 1980s. Consequently, the species is a Section 41 Species of Principal Importance and is included on the BoCC Red List. Declines in Essex were not evident until the start of the 1990s. Breeding was recorded in 27.3% of tetrads, and by 2000 the range had contracted back to the original stronghold around coast on farmland adjacent to the main estuaries, with a remnant inland population in the northwest (Wood, 2007).

The high density of singing corn buntings in the arable fields in the central part of the Site was one of the most notable features of the breeding bird survey. The species was apparently absent from the north-western end of the Site and was present in much lower abundance in the eastern portion. A minimum of 30 territories was estimated onsite, with an additional two territories just offsite.

Yellowhammer

Yellowhammer distribution and abundance in recent decades has followed a similar pattern to that of linnet, though exacerbated by a rather sharper decline that occurred between 1985 and 1990, with a decline of 24% between 1995 and 2017 in the East of England (Harris *et al.,* 2019). Like other small seed-eating species such as linnet and skylark, yellowhammer have suffered as the availability of food

from spilt grain and seeds of arable weeds have declined, particularly during winter. It is a Section 41 Species of Principal Importance and is included on the BoCC Red List. In Essex, it was breeding in 77% of Atlas tetrads, with long-term declines and perhaps more recent stability (Wood, 2007).

Yellowhammers were relatively frequent across the Site where there were better quality hedgerows, with the greatest abundance towards the northern end. Density was lower in the area where corn buntings were most abundant. At least 12 pairs were present onsite and an additional five pairs just offsite.

Reed bunting

Reed bunting is a widespread breeding resident which has undergone a rapid population decline since the mid-1970s. As a result, the species is a Section 41 Species of Principal Importance and is included on the BoCC Amber List. In Essex it has been recorded breeding in 44% of tetrads, but is absent from large areas of farmland, being commonest along the coast and major river valleys. Trends within the county appear mixed and localised (Wood, 2007).

Reed buntings were recorded from just two locations, with a single breeding territory identified just offsite at the northwest end.

5. EVALUATION

A total of 81 species were recorded at the Site during the breeding bird survey undertaken in April-July 2022. 47 of these were breeding, and a further ten were possibly breeding. The remaining 24 were not considered to be breeding onsite. 47 species met the criteria as priority species, either being listed on the Red or Amber lists of species of conservation concern, listed as UK priority species Section 41 of the NERC Act 2006, or listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). 19 of the priority species recorded were not breeding onsite (swift, whimbrel, snipe, common sandpiper, green sandpiper, black-headed gull, Mediterranean gull, common gull, herring gull, lesser black-backed gull, little egret, peregrine, rook, willow warbler, sedge warbler, ring ouzel, redwing, meadow pipit and brambling).

Priority species confirmed to be breeding onsite were: greylag goose, mallard, stock dove, woodpigeon, moorhen, sparrowhawk, barn owl, kestrel, hobby, skylark, whitethroat, wren, starling, song thrush, house sparrow, dunnock, yellow wagtail, greenfinch, linnet, corn bunting, yellowhammer and reed bunting. In addition, grey partridge, quail, marsh harrier, red kite, house martin and mistle thrush were considered to be possibly breeding. The most numerous of the breeding priority species were skylark (76 territories), woodpigeon (53 territories), wren (47 territories), corn bunting (30 territories), linnet (23 territories), whitethroat (21 territories), dunnock (16 territories), and yellowhammer (12 territories).

The high Site-wide numbers of skylark, and high densities of corn bunting in the central part of the Site, were perhaps the most conspicuous feature of the surveys. Corn buntings were associated with the most open areas of the Site, where extensive expanses of arable farmland was not broken up by woodland or wooded hedgerows. This Red Listed species has undergone extensive range contractions as well as population declines, and Essex is now one of the remaining strongholds. The estimated 30 pairs are likely to be of at least local significance for this species. Skylarks were abundant across the site and strongly associated with the arable fields that dominated the landscape. The density of skylark (76 territories within a 478ha site) equates to c0.16 territories per hectare, which is broadly comparable to average densities observed elsewhere, eg 0.15 territories per hectare on arable farmland in southeast England (Poulsen *et al.* 1998).

A barn owl survey located one recently used nest, and several roosting/feeding sites, suggesting a minimum of one pair is present. Successful breeding of two pairs of hobby was confirmed, while sightings of three other Schedule 1 listed raptors – peregrine, marsh harrier and red kite – suggests regular foraging by these species onsite although nesting is likely to be elsewhere.

The survey did not locate turtle doves onsite despite targeted effort focusing on areas of suitable habitat. Although Essex is now a stronghold for this species, its remaining populations now appear to be concentrated in more extensive areas of habitat, such as the nature reserves at Wrabness and Fingringhoe Wick. The presence of multiple singing quail on the June visit was notable, although the

mobile nature of this species and its highly elusive behaviour when not singing makes it impossible to know whether any remained to breed.

Two of the most abundant priority species (wren and woodpigeon) are included as such due to their recent Amber listing, which for these species is solely based on the fact that the UK holds a significant proportion of the European population. They are very common habitat generalists which are not subject to significant population decline, and consequently their presence onsite is not treated as being of comparable ecological significance to declining species such as skylark and corn bunting.

Overall, the species assemblage represented a mixture of those associated with arable farmland and hedgerows, and to a lesser extent woodland, with the farm reservoirs also supporting small numbers of waterbirds. The majority of species present are widespread in farmed lowland habitats in the UK.

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6. CONCLUSIONS

In April 2022 MKA Ecology Limited was commissioned by SLR Consulting Ltd to undertake a breeding bird survey at land in Essex forming part of the potential corridor for cabling from a new offshore wind farm. Baseline data are reported here for one section of this proposed corridor. Four survey visits were undertaken between April and July 2022, with additional survey effort undertaken for hobby and barn owl, and targeted effort to ascertain whether turtle doves were present.

A total of 81 species were recorded at the Site during the breeding bird survey. 47 of these were breeding, and a further ten were possibly breeding. 47 species met the criteria as priority species, with the most numerous of these being skylark, woodpigeon, wren, corn bunting, linnet, whitethroat, dunnock, and yellowhammer. The species assemblage was primarily those associated with arable farmland and hedgerows, with the farm reservoirs also supporting small numbers of waterbirds. The populations of skylark and corn bunting were particularly high, although the density of skylarks was in line with average densities recorded elsewhere on lowland farmland. Hobby and barn owl surveys confirmed breeding by both species, and when the cabling route is confirmed, further survey effort may be required ahead of construction to ensure there is no risk of disturbance to these Schedule 1 protected species.

Recommendations for mitigation and enhancements are not provided here and will be detailed separately and holistically across the corridor once the proposed route has been confirmed.

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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. The Birds Directive 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. The current BoCC assessment may be found here: https://britishbirds.co.uk/content/status-our-bird-populations

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 20 July 2021 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.

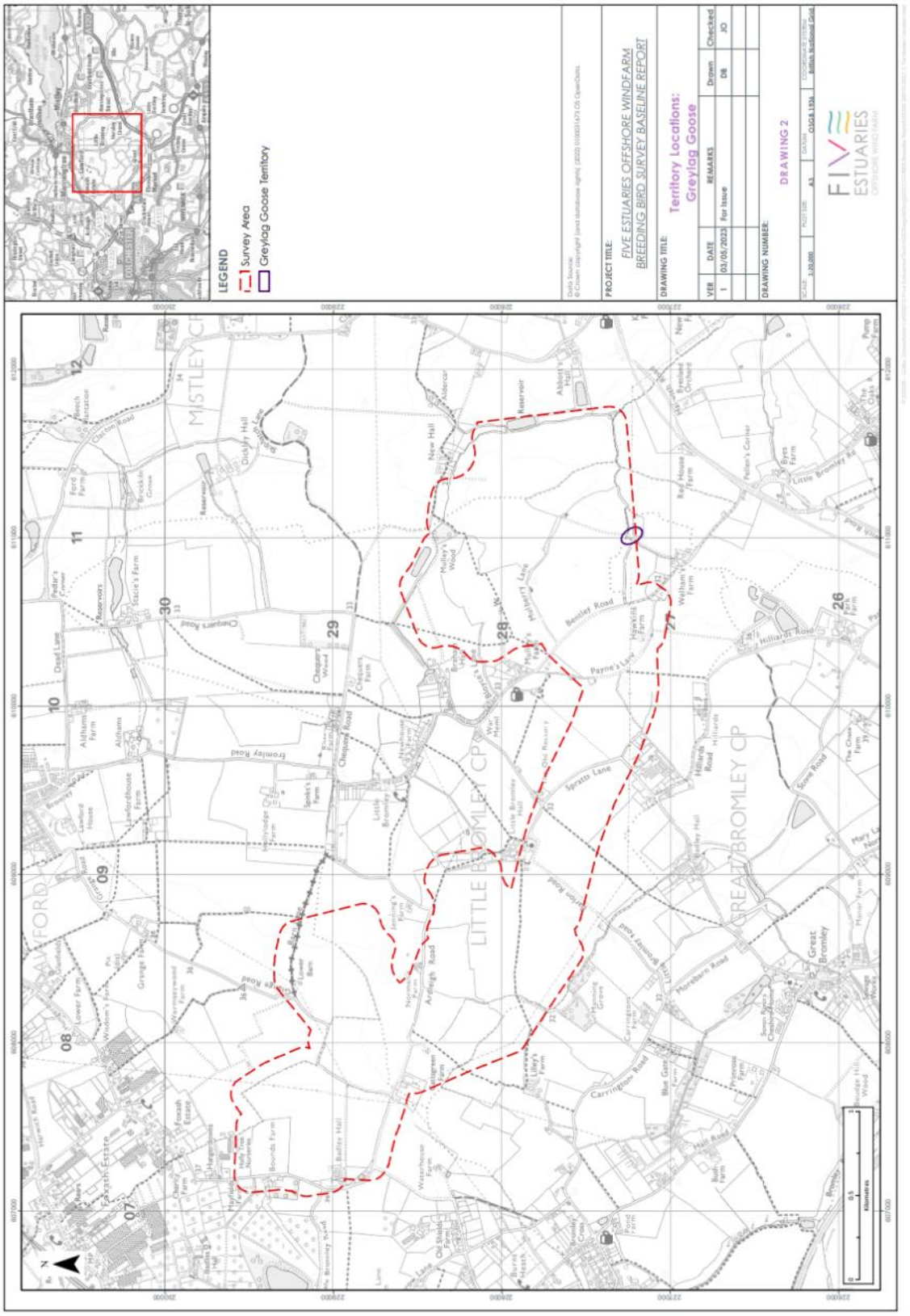
Furthermore, there is a focus on re-use of existing brownfield sites or sites of low environmental value as a priority, and discouraging development in National Parks, Sites of Specific Scientific Interest, the Broads or Areas of Outstanding Natural Beauty other than in exceptional circumstances.

Where possible, planning policies should also

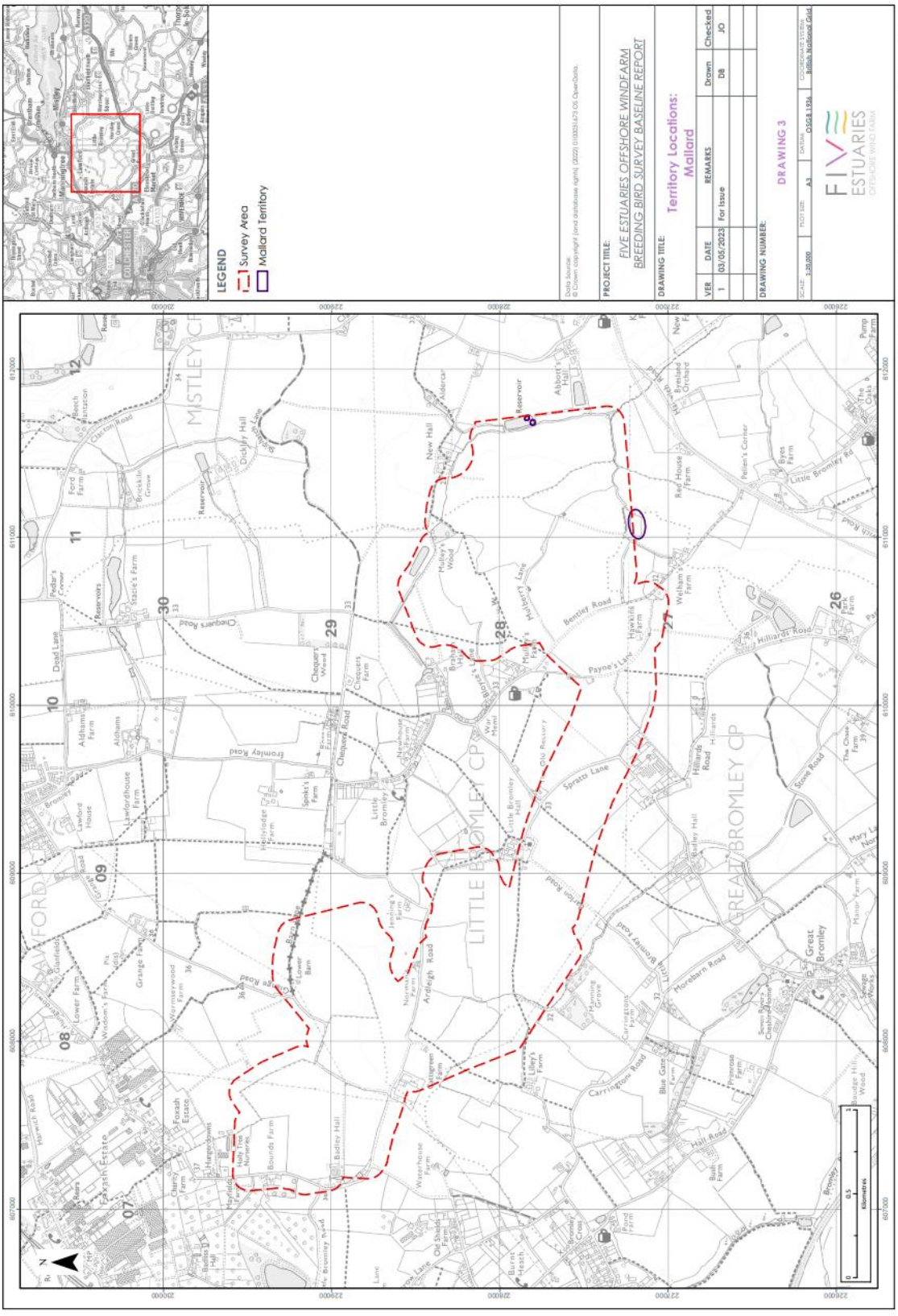
“promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity”.

8.2. Appendix 2: Territory maps/breeding clusters for priority species

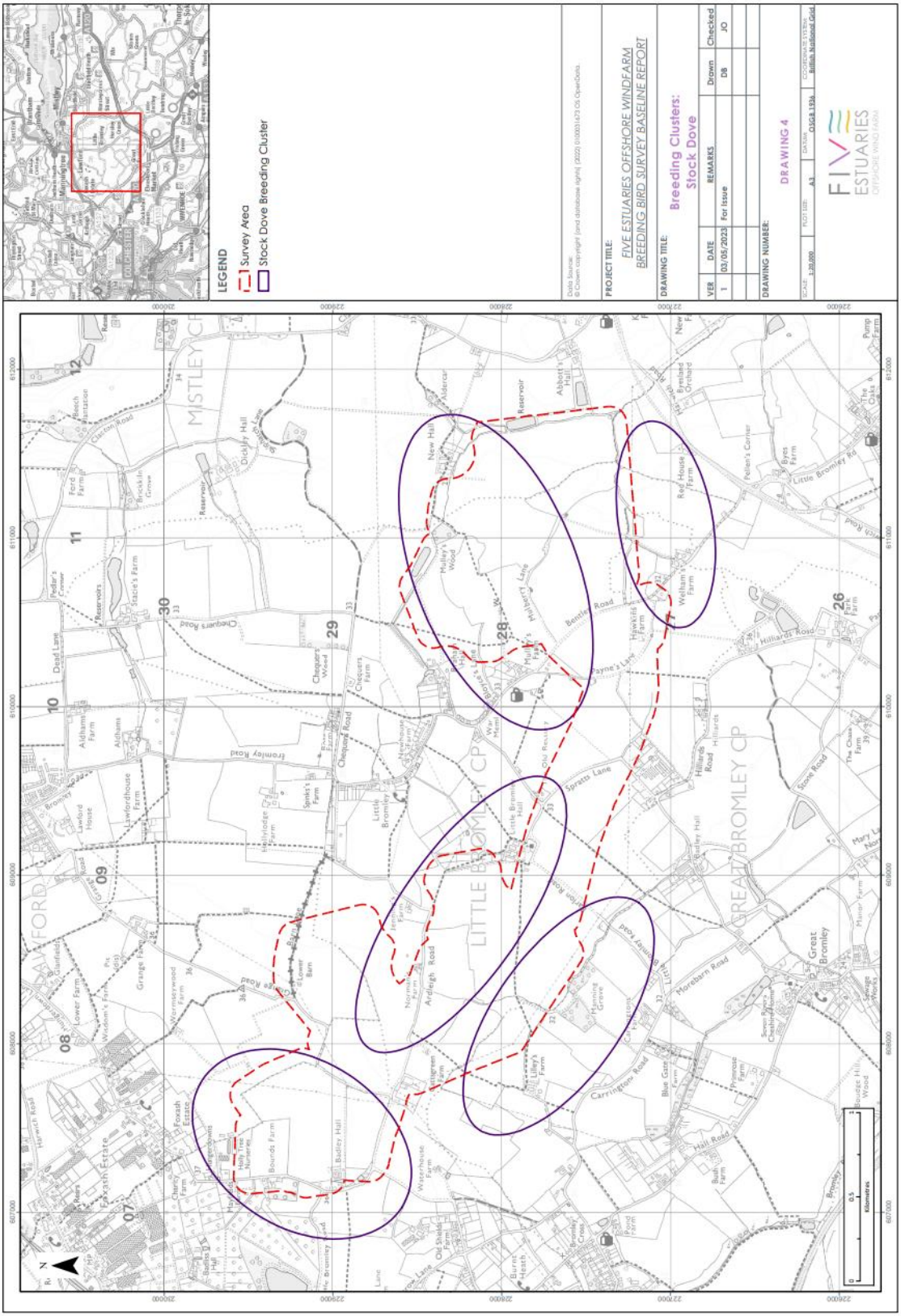
Greylag goose territories



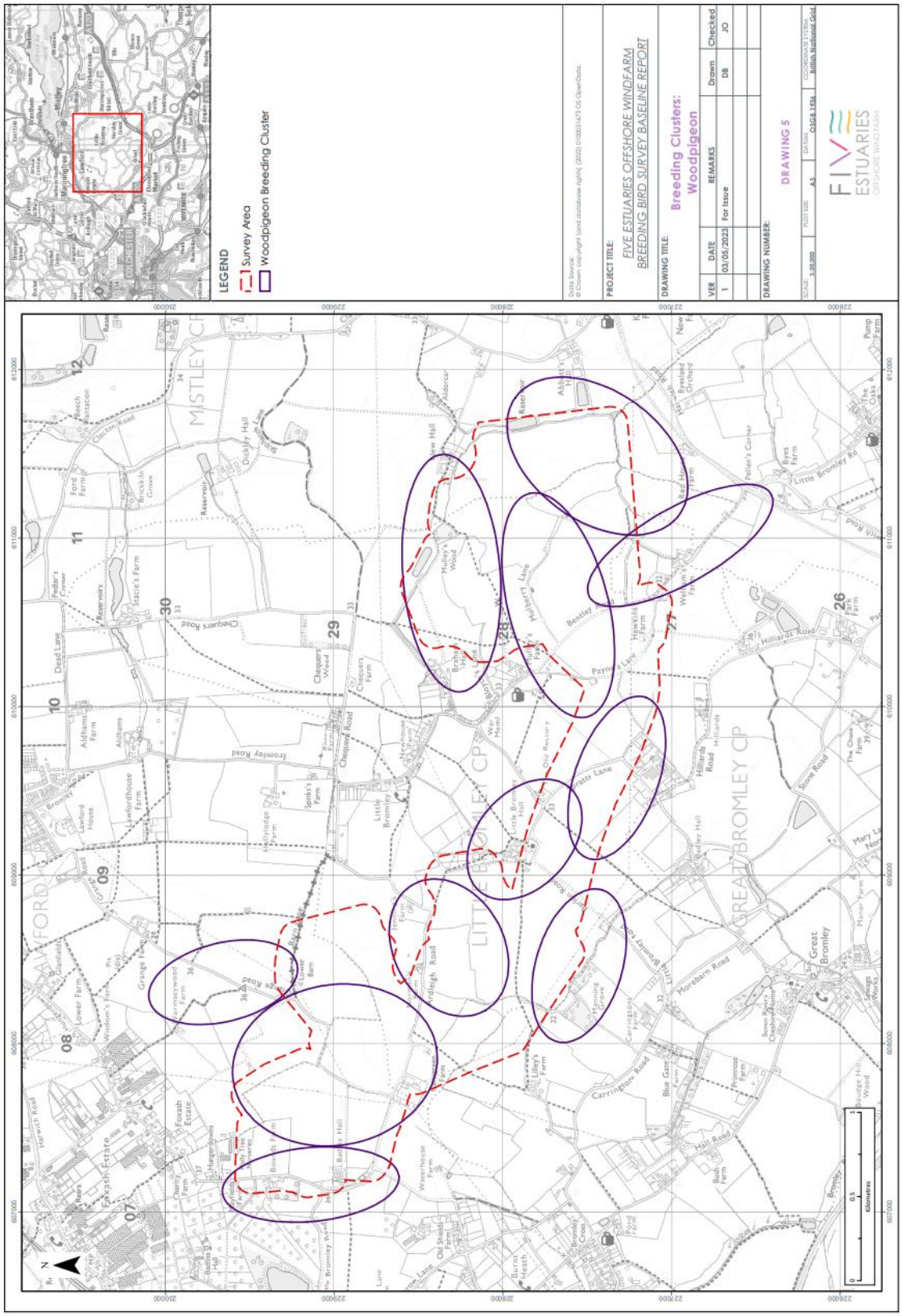
Mallard territories



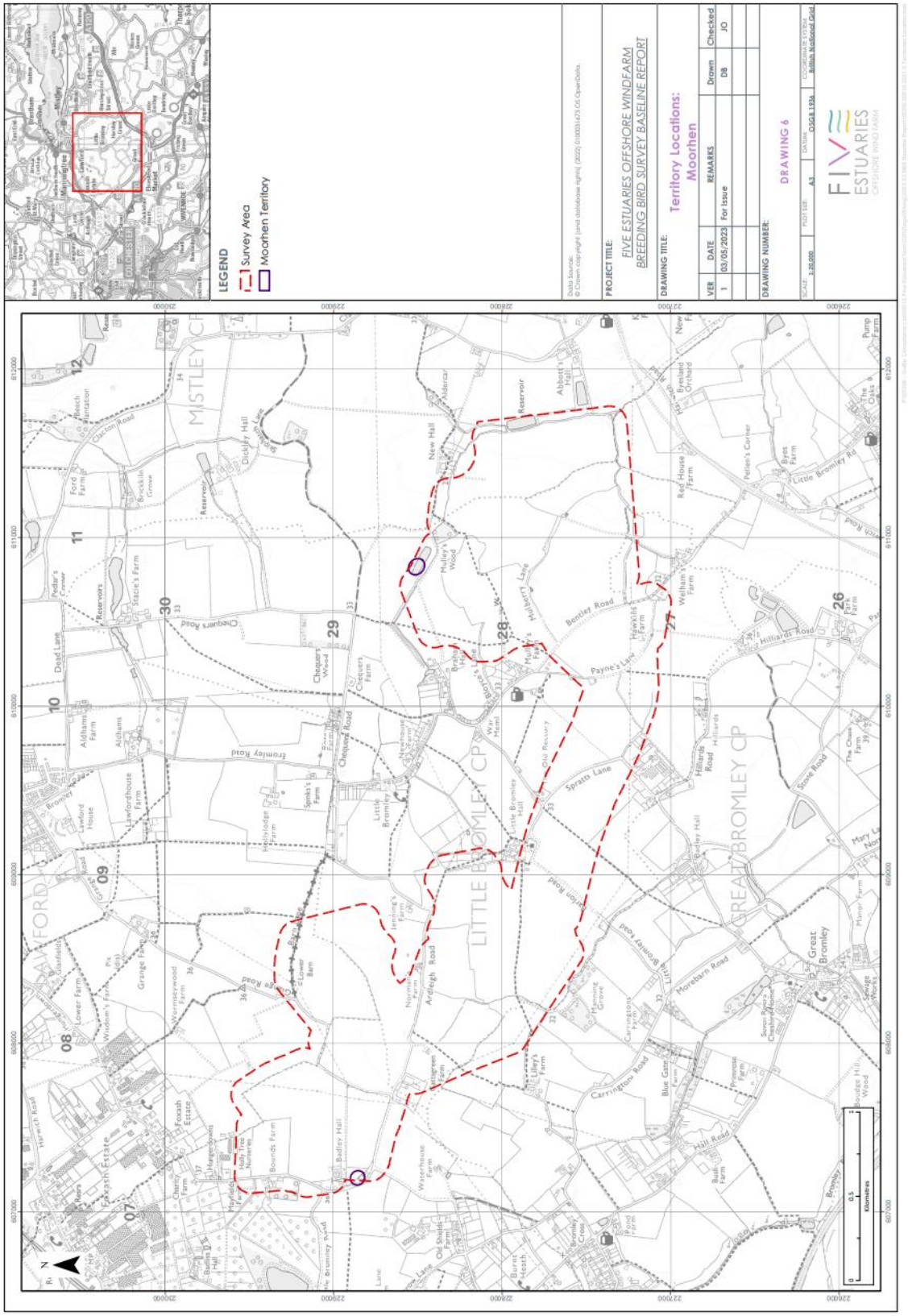
Stock dove clusters



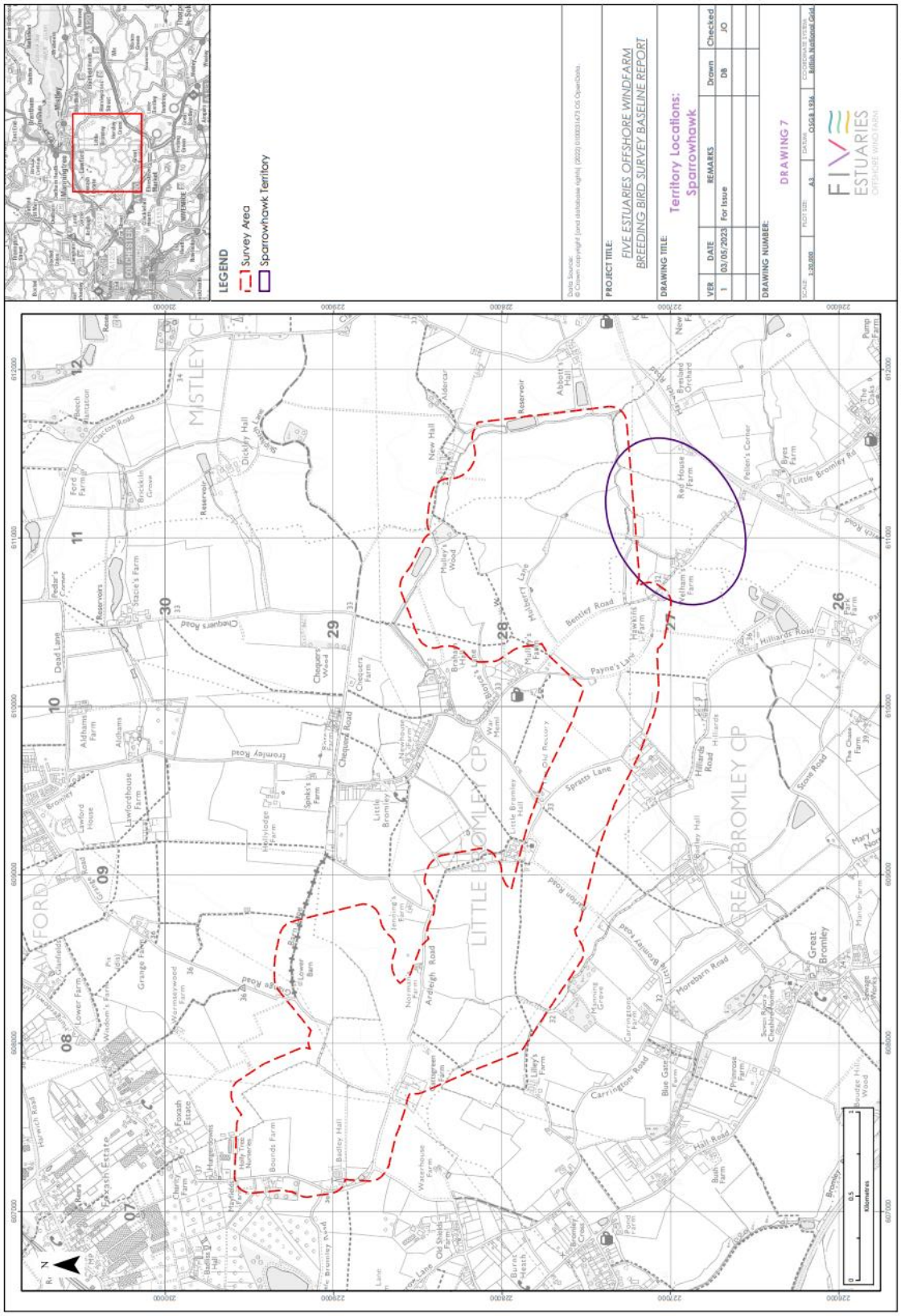
Woodpigeon clusters



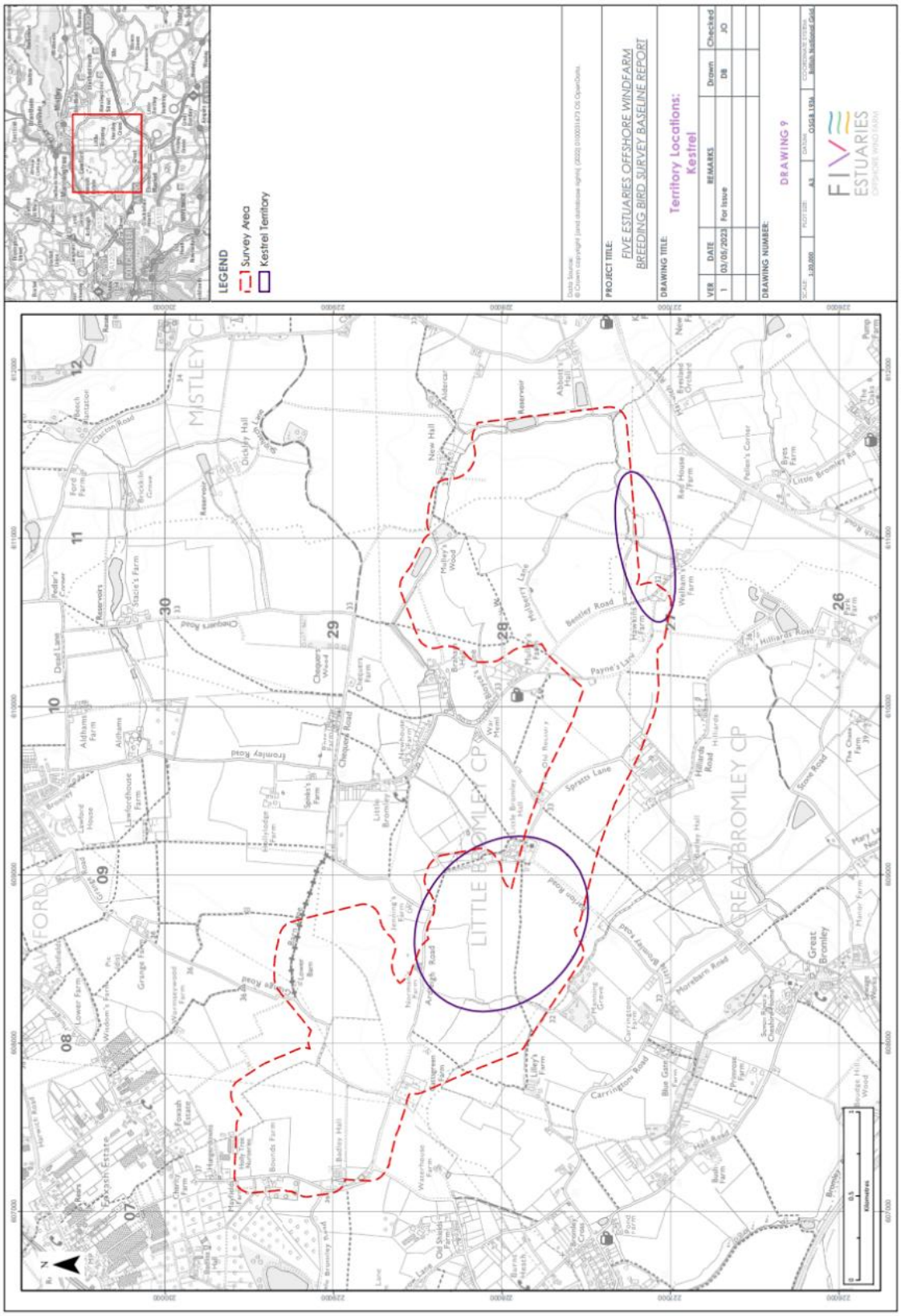
Moorhen territories



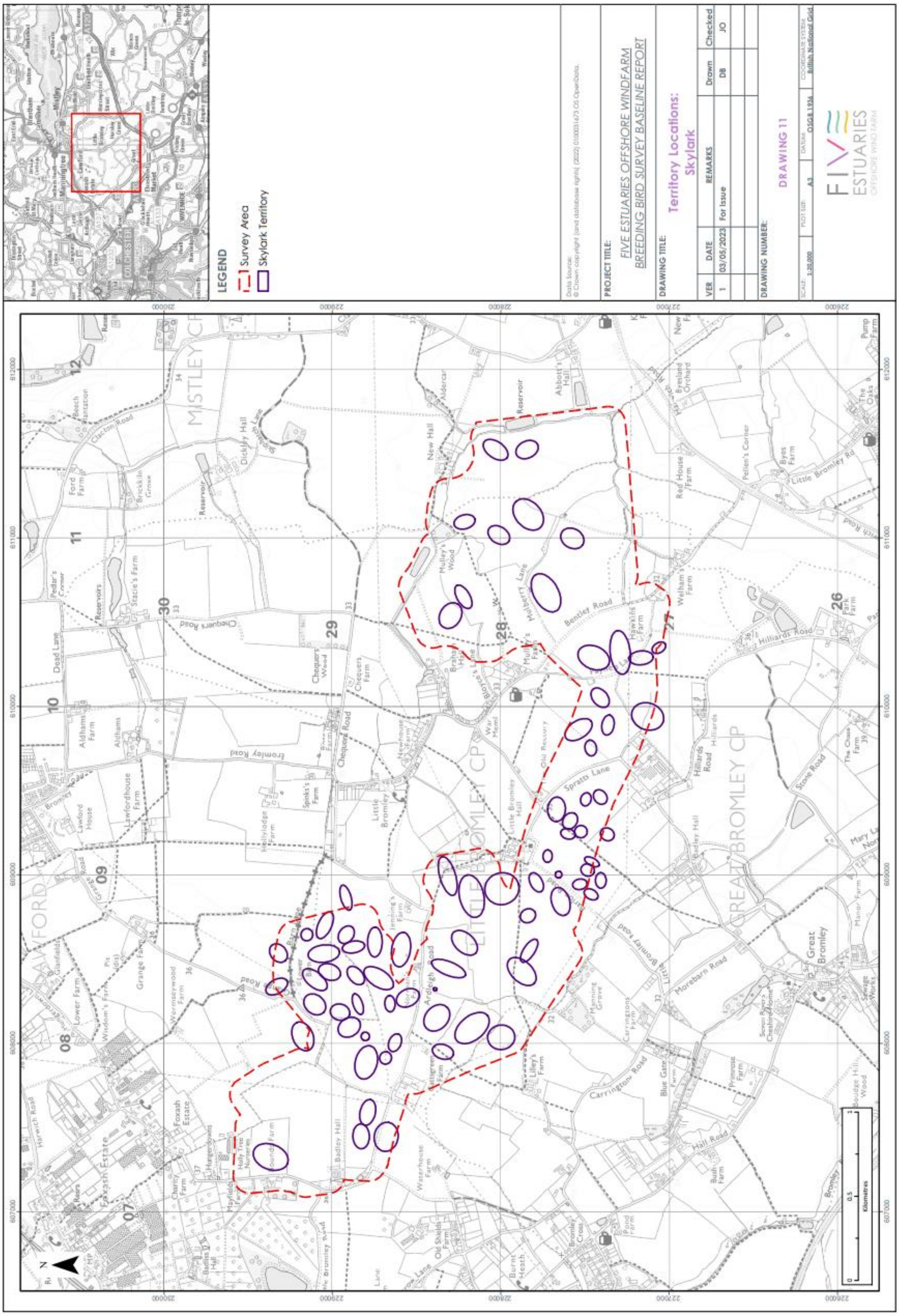
Sparrowhawk territories



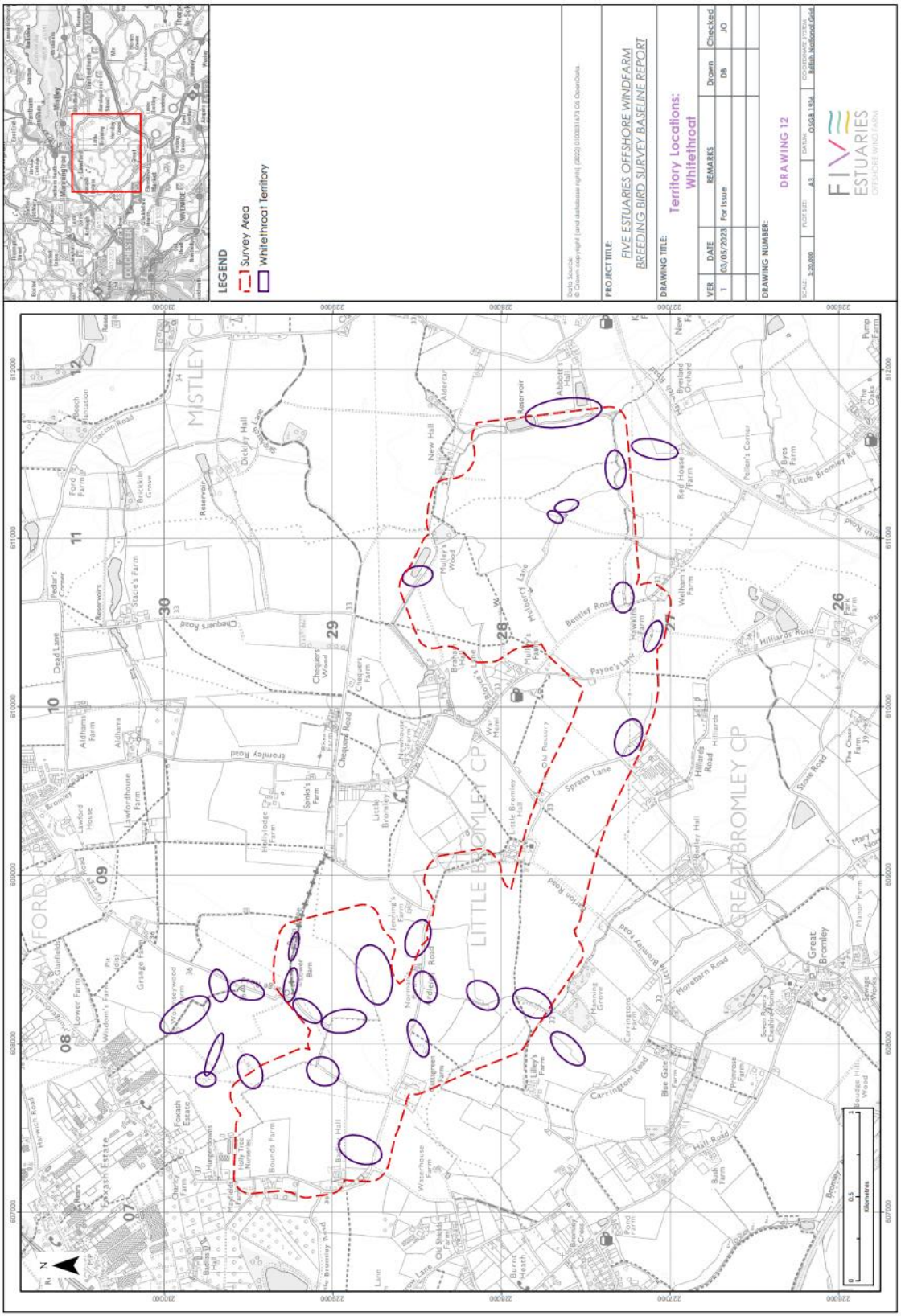
Kestrel territories



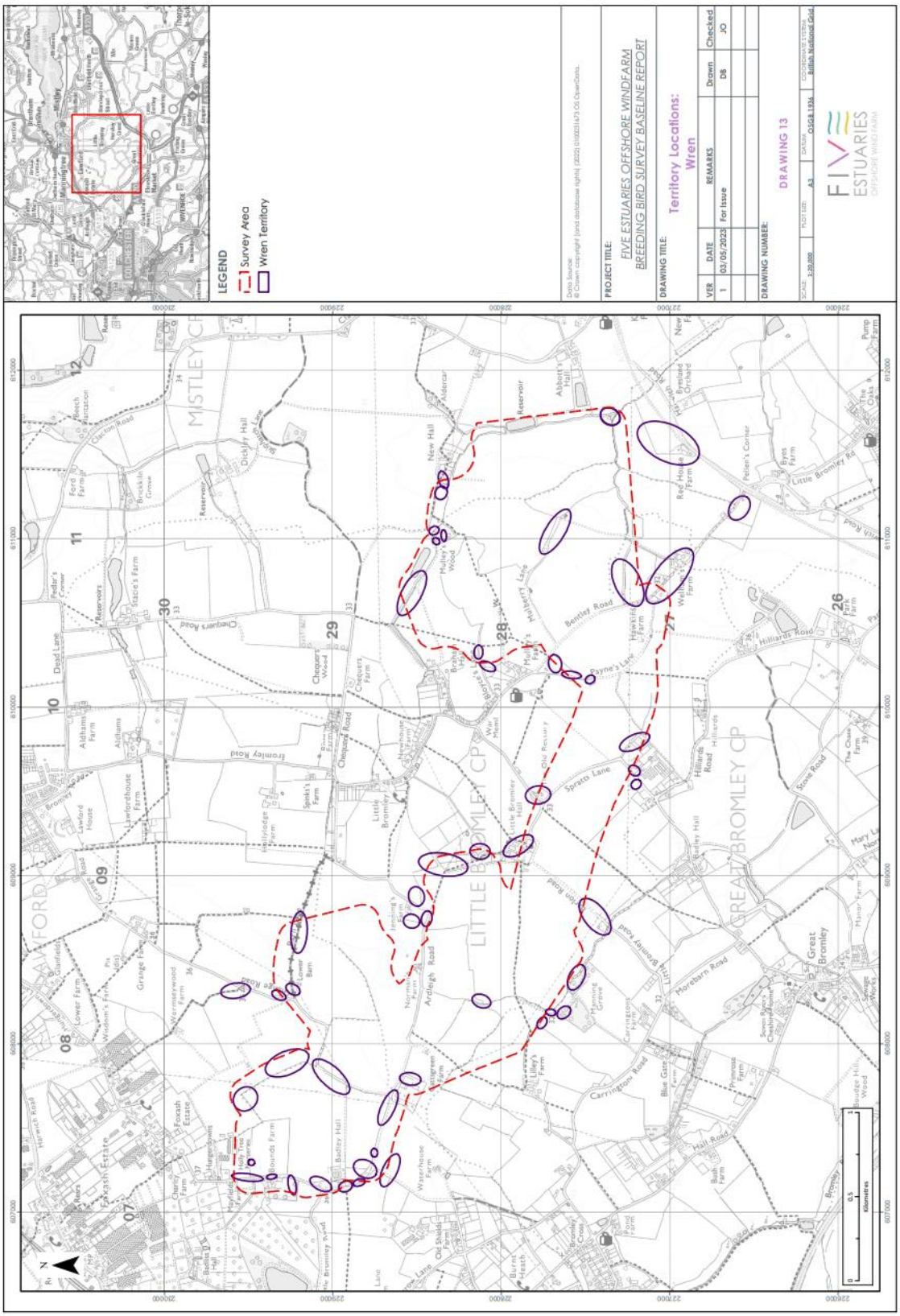
Skylark territories



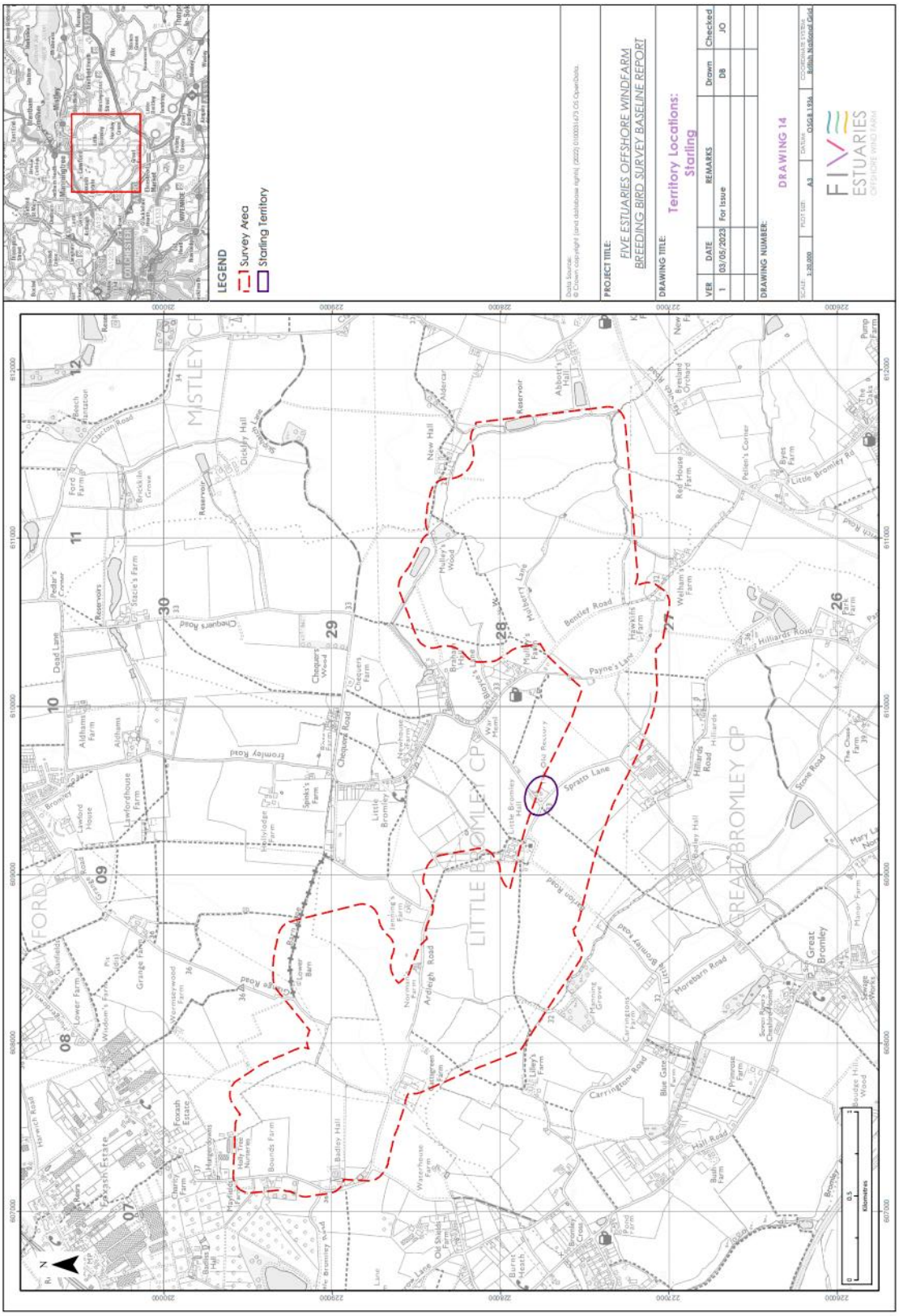
Whitethroat territories



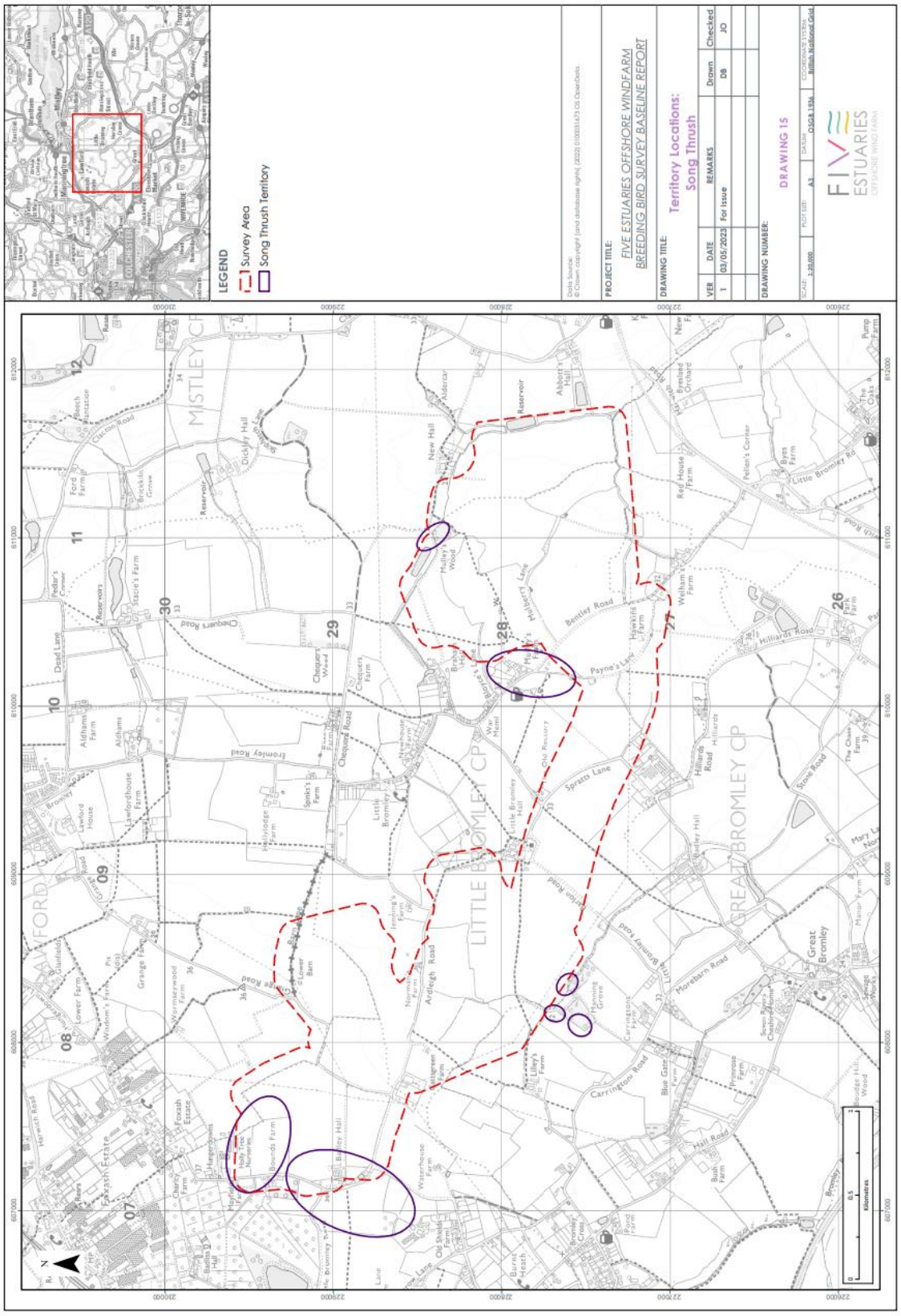
Wren territories



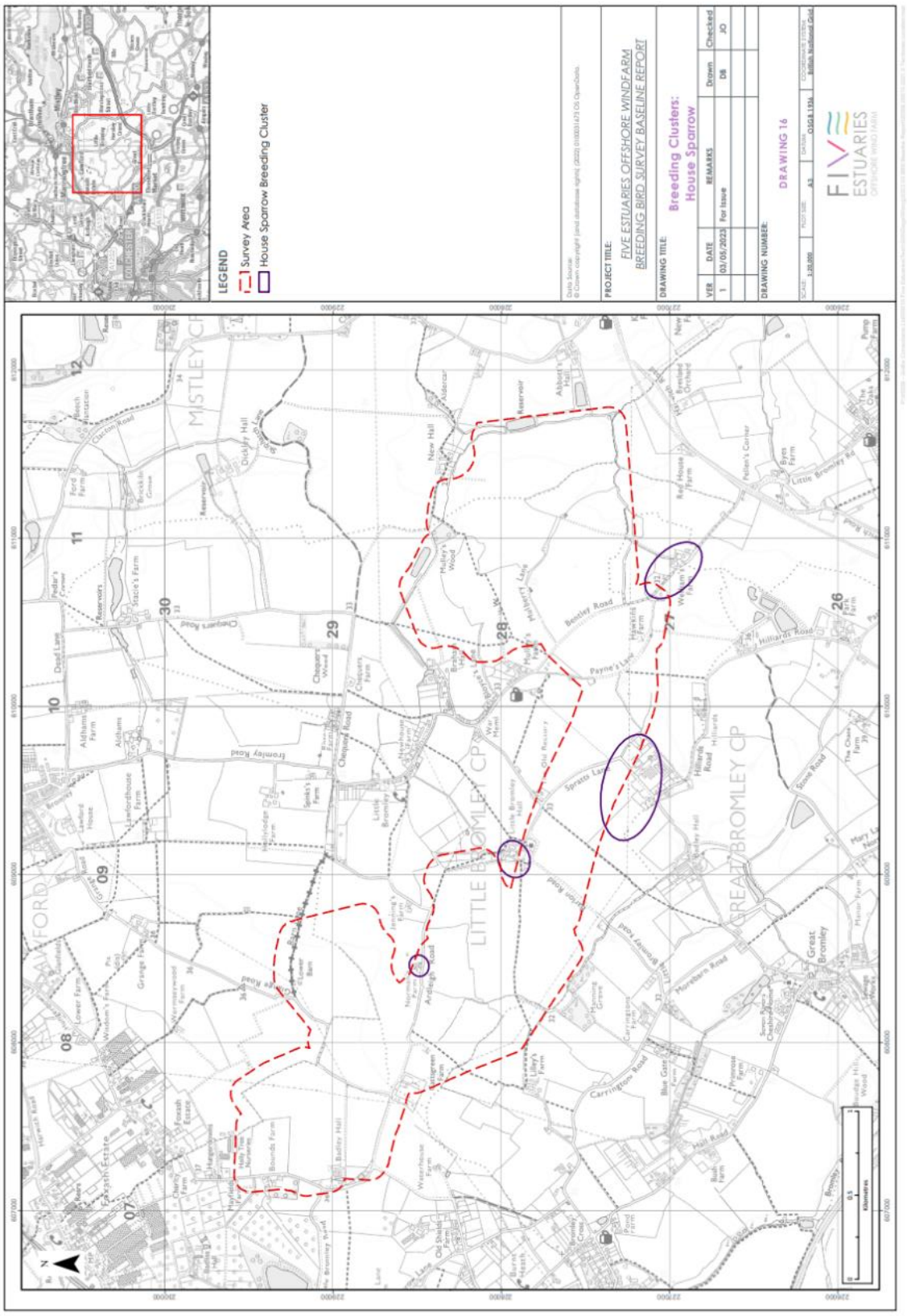
Starling territories



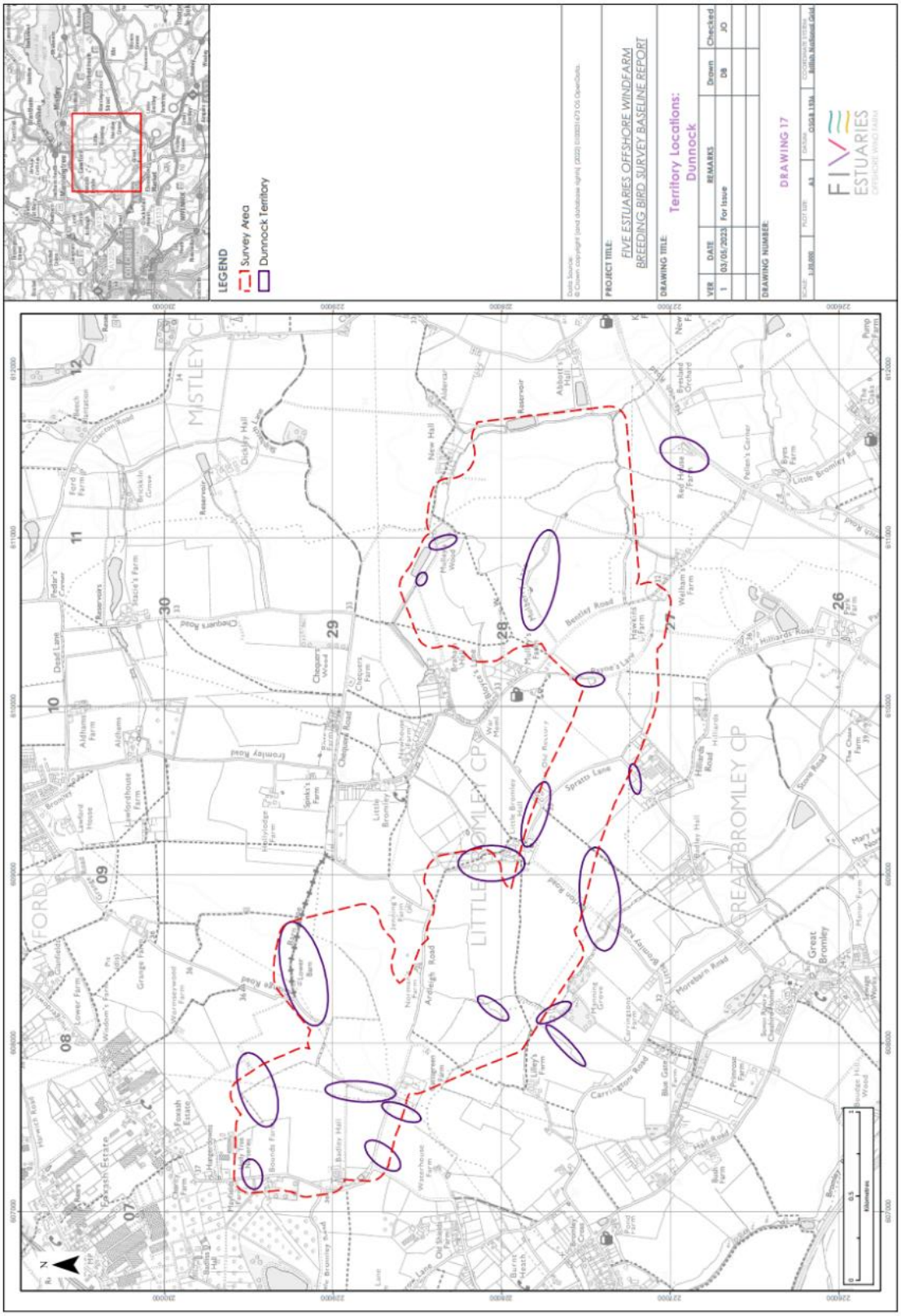
Song thrush territories



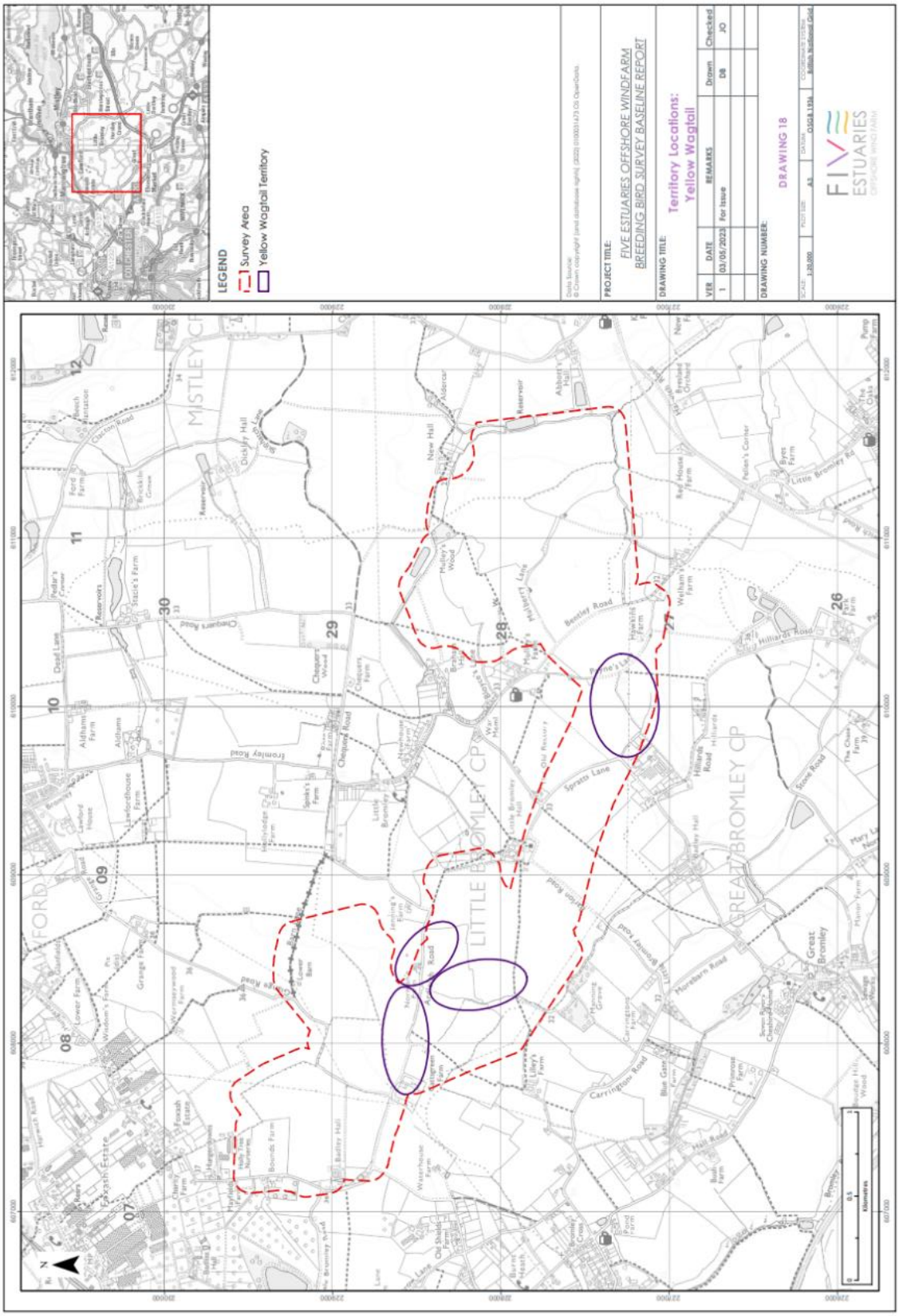
House sparrow clusters



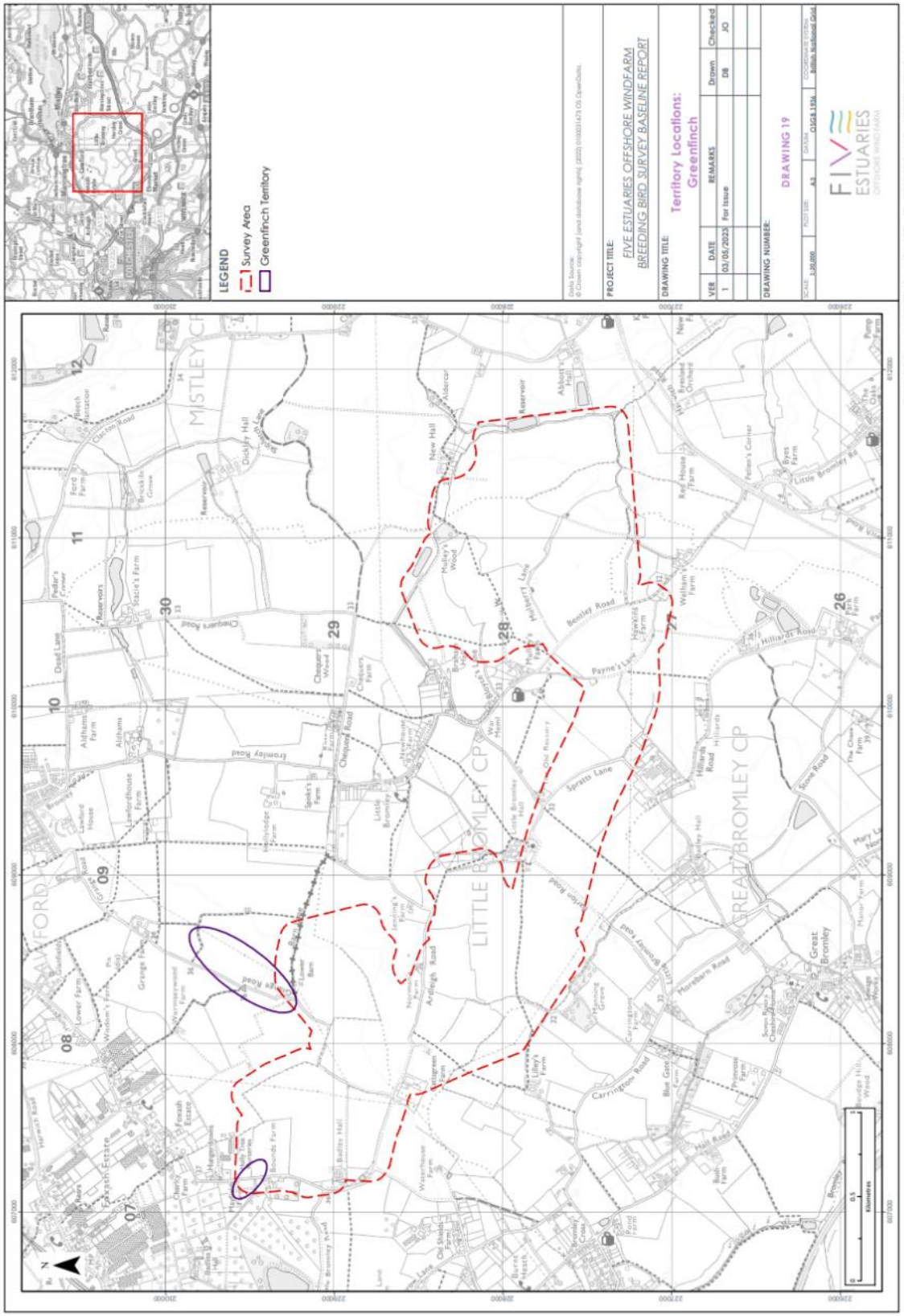
Dunnock territories



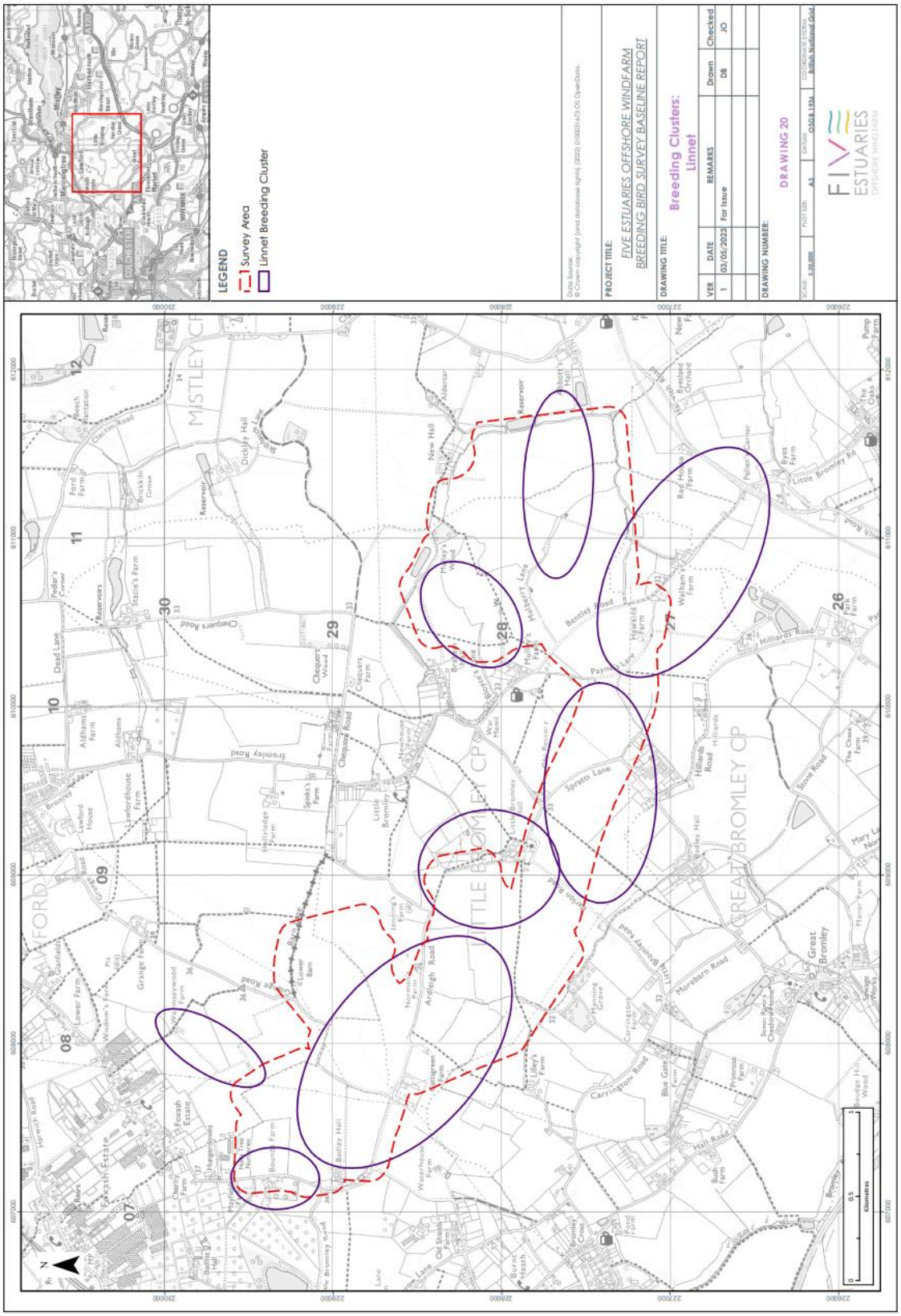
Yellow wagtail territories



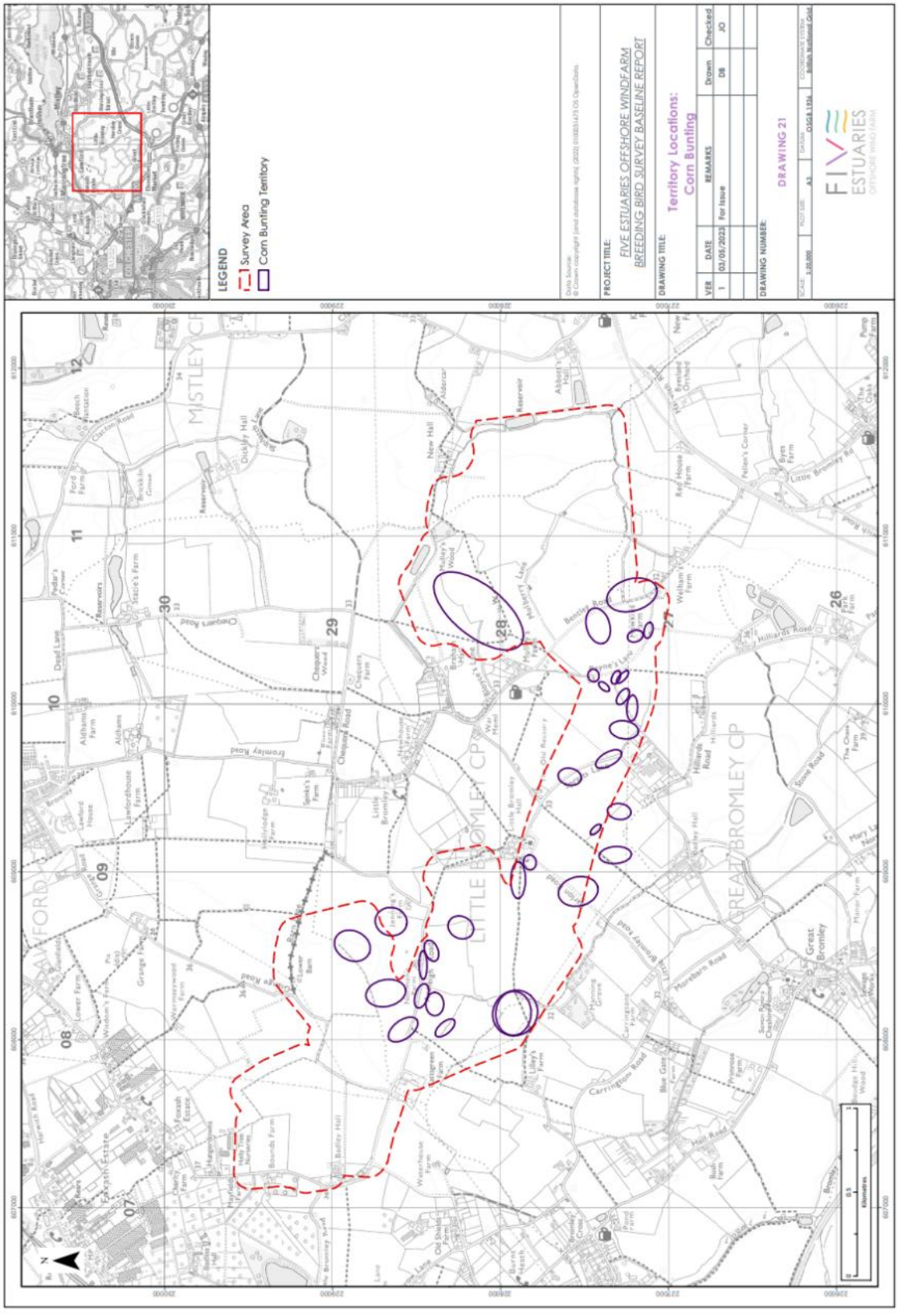
Greenfinch territories



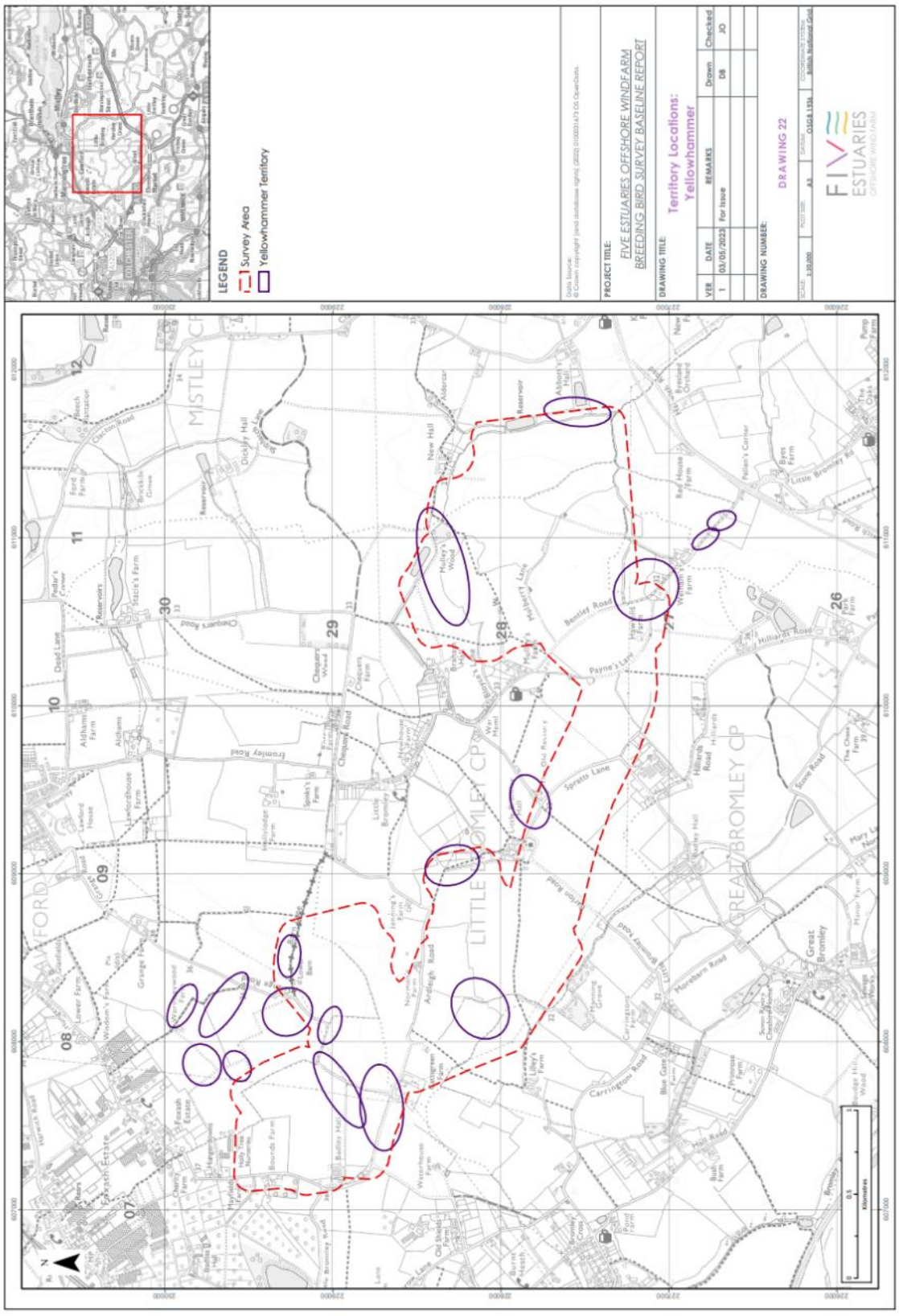
Linnet clusters



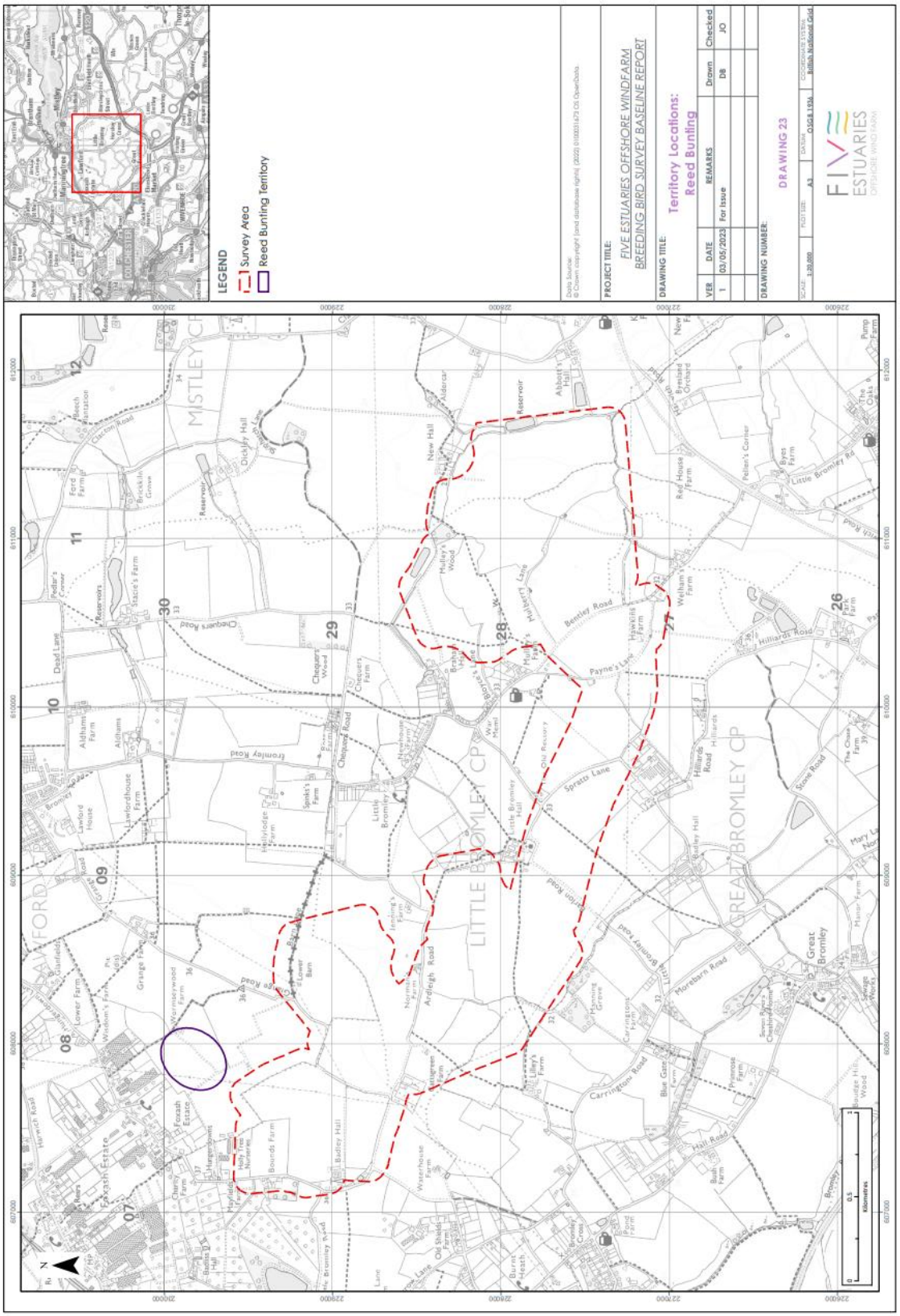
Corn bunting territories



Yellowhammer territories



Reed bunting territories



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