
**THREE OAKS RENEWABLE
ENERGY PARK
EXTENSION**

**Environmental
Statement Appendix 7.1: Breeding Bird
Survey 2020**

MAY 2026



Three Oaks Renewable Energy Park Extension: Breeding Bird Survey 2020

Report to Three Oaks Renewable Energy Park Ltd.

Steve Percival, Tracey Percival, Stuart Piner and Tom Lowe

Ecology Consulting, Swallow Ridge Barn, Old Cassop, Durham DH6 4QB

Email: steve.percival@ecologyconsult.co.uk

March 2026

TABLE OF CONTENTS

INTRODUCTION.....	3
STUDY AREA.....	3
BREEDING BIRD SURVEY METHODS.....	3
CORE BREEDING BIRD SURVEYS.....	3
RAPTOR AND OWL BREEDING SURVEYS	4
BREEDING SEASON VANTAGE POINT SURVEYS	4
BREEDING BIRD SURVEYS 2020: RESULTS	5
VANTAGE POINT SURVEY RESULTS	7
CONSERVATION EVALUATION OF BREEDING BIRD POPULATIONS	8
CONCLUSIONS	11
REFERENCES	11

THREE OAKS RENEWABLE ENERGY PARK EXTENSION BREEDING BIRD SURVEYS 2020

Introduction

1. This report presents the results of bird survey work at the proposed Three Oaks Renewable Energy Park Extension (the Proposed Development), Thornholme, East Yorkshire, undertaken during the breeding season to provide ornithological baseline data for the proposed development. It provides baseline data on the breeding bird populations, activity and flight paths within the vicinity of the proposed development site to inform subsequent ornithological impact assessment.
2. The specific objectives of this work were to:
 - Undertake breeding bird surveys of the proposed development site, to determine the numbers of birds present, and the flight activity of key target species.
 - Use this information to evaluate the importance of the site's breeding bird populations.
3. The surveys were designed to take into account Natural England (NE) standing advice¹ and Scottish Natural Heritage (2017) bird survey guidance. The surveys were undertaken by Tom Lowe and Stuart Piner, both with over 20 years' bird survey experience.
4. A previous application was submitted for a wind farm at this site in 2011, though was unsuccessful. The baseline surveys from 2010 for that application have been included in this report for comparison with the 2020 data.

Study Area

5. The site is located approximately 1.2km north of Thornholme village and 4.7km west from Bridlington in East Yorkshire. The breeding bird survey area was chosen to include all areas within the potential zone of ornithological influence of the Proposed Development and a buffer around that to be contextual information on the area's breeding birds. The survey area covered a total area of 6.4km² (see Figure 1). It is predominantly open arable farmland and lies within the 'Yorkshire Wolds' NE National Character Area.

Breeding Bird Survey Methods

Core Breeding Bird Surveys

6. The main breeding bird surveys are following the standard Common Birds Census methodology with four surveys undertaken at approximately monthly intervals during April-July 2020. They were carried out on 15 April, 8 May, 4 June and 5 July 2020.
7. All bird locations and behaviour were mapped to 1:10,000 scale, using the standard BTO Common Birds Census notation. All species were recorded. In addition, the survey effort per unit area was standardised to make the surveys as repeatable as possible. A route was chosen to ensure that all parts of the study area are covered to within at least 100m of the observer. The survey route was plotted onto the survey map as it was carried out. The surveys avoided strong winds, heavy rain, fog and low cloud. Birds were located by walking, listening and

¹ <https://www.gov.uk/guidance/wild-birds-surveys-and-monitoring-for-onshore-wind-farms>

scanning by eye and with binoculars. Standard BTO notation was used to record the birds' activities; singing, calling, carrying nest material, nests or young found, repetitively alarmed adults, disturbance displaying, carrying food or in territorial dispute.

8. The survey data were analysed to determine spatially distinct clusters of records, equivalent to breeding territories (following standard Common Birds Census methodology, Gilbert *et al.* 1998), with the number of such territories used to calculate the breeding population for each species. A record in potentially suitable breeding habitat on a single visit was considered sufficient to indicate a potential breeding attempt.

Raptor Breeding Surveys

9. As the survey area may be used by a range of scarce raptors, species-specific surveys of a wider buffer around the proposed development site was undertaken for key species during April-August 2020. These surveys comprised walkovers (where access was allowed and where potentially suitable breeding habitat for these species was present) supplemented by a series of mini-vantage points (VPs) (shorter watches from additional VPs) to cover other areas, to detect displaying or nesting behaviour during the breeding season of raptor species in accordance with methods described in Gilbert *et al.* (1998) and Hardey *et al.* (2013). These surveys recorded all Schedule 1 and Annex I raptor species including marsh harrier, and peregrine. This included five surveys visits, undertaken on 23 April, 21 May, 18 June, 22 July and 18 August 2020.

Breeding Season Vantage Point Surveys

10. These surveys enabled flight activity at the proposed development site to be quantified and inform the project impact assessment (SNH 2017). A single vantage point was sufficient, which gave a clear view over the site to a maximum 2km viewing distance, looking forward from the VP (i.e. no need to look behind). A total of 36 hours surveys were carried out from the VP (including roost flight observations at dawn/dusk and around high tide), over the April-September 2020 survey period (surveys were continued through to September to give a full year of survey data). All flight lines of target species were mapped, and the flight height of each flock recorded. Target species comprised:
 - All ducks, geese, swans, cormorants, herons, coot and grebes;
 - All waders (including lapwing and golden plover);
 - All birds of prey and owls;
 - Large flocks (>100 birds) of other species (except woodpigeon and rook);
 - Any other notable species.
11. The VP was selected using the following criteria:
 - It gave a clear view across the development site, with all of the collision risk zone within 2km of the VP visible as a minimum;
 - The survey area could be observed by looking in a 180° arc forward from the vantage point (i.e. no need for the observer to look behind to cover the site) - the focus of the surveys was looking into the development site from the VP.
12. All key birds seen were recorded, irrespective of their distance from the vantage point. Observations were carried out throughout daylight hours but not in periods of reduced visibility (<3km).
13. Vantage point surveys were carried out for a maximum of 3 hours in a single observer session. Where one surveyor carried out two three-hour blocks concurrently, there was a gap of at least 30 minutes rest period between these surveys (to follow best practice).

14. During the observation periods, all target species flights were mapped and cross-referenced to the recording form using a numbering system, and the flight height of each recorded. To estimate flight height as accurately as possible, the available reference features (e.g. existing power lines, radio masts) were used. Flight heights were recorded as accurately as possible, i.e. not summarised to height classes. Below 10m it was possible to estimate to 1m, between 10m and 20m to 2m, between 20m and 50m to 5m, and above 50m to 10m. In any case of uncertainty an estimate of the upper and lower range of height was recorded. When birds were observed over an extended period, estimates of flight height were recorded every 30 seconds. The activity during each flight (e.g. striking prey, displaying, food passing) was also recorded.

Breeding Bird Surveys 2020: Results

15. The breeding bird populations recorded in the survey area on each visit are summarised in Table 1, which gives the number of breeding pairs recorded during each survey visit and the overall breeding population estimate for each species. A single record in potentially suitable breeding habitat on a single visit was considered sufficient to indicate a potential breeding attempt.

Table 1. Breeding bird numbers in the Proposed Development survey area recorded during April-July 2020. Numbers given are the number of breeding pairs recorded on each survey visit, and the overall number of breeding pairs.

Species	15 April	8 May	4 June	5 July	Number of breeding pairs
Red-legged Partridge	1	3	1	3	5
Grey Partridge	4	6	4	3	9
Pheasant	2	4	4	1	7
Buzzard	1	1	2	1	2
Kestrel	2	1	0	0	3
Lapwing	0	1	0	0	1
Stock Dove	0	1	1	0	2
Woodpigeon	5	12	20	24	54
Cuckoo	0	0	0	1	1
Skylark	70	68	65	43	108
Swallow	0	1	1	1	3
House Martin	0	0	2	0	2
Meadow Pipit	4	1	2	0	7
Yellow Wagtail	2	17	14	10	30
Pied Wagtail	4	1	0	0	5
Wren	15	10	5	3	24
Dunnock	13	6	3	3	22
Robin	4	5	2	0	9
Blackbird	15	6	16	8	26
Song Thrush	0	0	1	0	1
Blackcap	0	1	0	3	3
Lesser Whitethroat	0	4	2	0	6
Whitethroat	1	36	14	13	40
Long-tailed Tit	0	2	1	1	4
Blue Tit	2	3	0	1	5
Great Tit	2	2	3	2	6
Jackdaw	0	3	2	1	4
Rook	20	0	0	0	20
Carriion Crow	9	4	5	2	12

Species	15 April	8 May	4 June	5 July	Number of breeding pairs
House Sparrow	0	0	0	1	1
Tree Sparrow	0	0	0	1	1
Chaffinch	32	31	29	14	48
Goldfinch	2	4	5	8	12
Linnet	16	26	17	18	46
Yellowhammer	13	20	31	21	44
Reed Bunting	3	0	1	2	6
Corn Bunting	16	19	20	8	31

16. The breeding bird populations within the survey area in 2020 are compared with those from a previous survey in 2010 in Table 2. Generally, the breeding bird populations were very similar between the two years.

Table 2. Breeding bird populations in the Three Oaks survey area during 2010 and 2020 (estimated numbers of breeding pairs).

Species	Estimated number of breeding pairs	
	2010	2020
Red-legged Partridge	7	5
Grey Partridge	10	9
Quail	1	0
Pheasant	12	7
Buzzard	1	2
Kestrel	2	3
Lapwing	3	1
Stock Dove	7	2
Woodpigeon	99	54
Collared Dove	1	0
Cuckoo	1	1
Skylark	104	108
Swallow	16	3
House Martin	2	2
Meadow Pipit	14	7
Yellow Wagtail	33	30
Pied Wagtail	3	5
Wren	12	24
Dunnock	28	22
Robin	5	9
Blackbird	36	26
Song Thrush	6	1
Blackcap	1	3
Lesser Whitethroat	0	6
Whitethroat	41	40
Chiffchaff	1	0
Willow Warbler	1	0
Long-tailed Tit	2	4
Blue Tit	6	5
Great Tit	5	6
Jackdaw	5	4
Rook	3	20
Carrion Crow	5	12
Starling	1	0
House Sparrow	12	1

Species	Estimated number of breeding pairs	
	2010	2020
Tree Sparrow	1	1
Chaffinch	48	48
Greenfinch	4	0
Goldfinch	19	12
Linnet	41	46
Bullfinch	1	0
Yellowhammer	33	44
Reed Bunting	4	6
Corn Bunting	14	31

Wider Breeding Raptor Survey Results

17. No evidence was found of any key target raptor species breeding in the wider 2 km buffer. There were occasional sightings of individual marsh harriers (5 in total), but no birds were observed exhibiting breeding behaviour within the wider survey area.

Vantage Point Survey Results

18. The rates of bird flight movement observed across the survey area during the vantage point surveys from the single VP are summarised in Table 3. This gives the monthly mean flight rates per hour observed, and the total number of flights recorded during the survey period. Flight lines of key target species are given in Figure 11 (golden plover, lapwing, black-headed gull and common gull, Figure 12 (herring gull) and Figure 13 (marsh harrier).

Table 3. Bird flight rates recorded over the Proposed Development breeding bird survey area during April – September 2020 vantage point surveys. N = 36 hours total observation (6 hours/month).

Species	Flight rate (birds/hour)						Total number of flights
	Apr	May	Jun	Jul	Aug	Sep	
Barnacle Goose	0	0.3	0	0	0	0	2
Honey-buzzard	0	0	0	0	0	0.2	1
Marsh Harrier	0	0.2	0	0.3	1.0	0.3	11
Sparrowhawk	0	0	0	0	0.7	0.5	7
Buzzard	2.0	0.7	1.8	0.3	3.3	4.0	73
Kestrel	0.3	0.2	0.5	0	1.0	1.2	19
Merlin	0.2	0	0	0	0.2	0	2
Hobby	0	0	0	0	0	0.2	1
Golden Plover	0	0	0	0	5.8	0	35
Lapwing	0	0.2	0	0	0	0	1
Common Gull	0	0	0	0	0	3.3	20
Lesser Black-backed Gull	0.3	1.8	1.0	2.0	0.3	0	33
Herring Gull	56.8	27.8	2.3	5.0	30.8	93.7	1299
Great Black-backed Gull	0	0	0	0	0.2	0	1
Black-headed Gull	0	0	0	0	0	4.3	26

19. Table 4 compares flight rates recorded in 2020 with those from the previous autumn/winter surveys in 2010. The key species seen over the two breeding seasons were similar, with gulls being the most numerous group in both years (particularly herring gull).

Table 4. Comparison of key species flight rates (birds/hour) recorded over the Proposed Development breeding bird survey area during the 2010 and 2020 vantage point surveys.

Species	Mean flight rate (birds/hour)		Total flights observed	
	2010	2020	2010	2020
Barnacle Goose	0	0.06	0	2
Cormorant	0.11	0.00	4	0
Honey-buzzard	0	0.03	0	1
Marsh Harrier	0	0.31	0	11
Sparrowhawk	0.03	0.19	1	7
Buzzard	0.22	2.03	8	73
Kestrel	0.44	0.53	16	19
Merlin	0	0.06	0	2
Hobby	0.03	0.03	1	1
Oystercatcher	0.11	0.00	4	0
Golden Plover	0.64	0.97	23	35
Lapwing	1.22	0.03	44	1
Curlew	0.03	0.00	1	0
Common Gull	0	0.56	0	20
Lesser Black-backed Gull	0.19	0.92	7	33
Herring Gull	18.31	36.08	659	1299
Great Black-backed Gull	0.33	0.03	12	1
Black-headed Gull	0.33	0.72	12	26

Conservation Evaluation of Breeding Bird Populations

20. The conservation value of the breeding bird populations was determined using the criteria specified in Table 5 (from Percival 2007). This includes the criteria adopted by Natural England in Guidelines for Selection of Biological SSSIs (Drewitt *et al.* 2020), using 1% of the resource to define international and national importance (Frost *et al.* 2021). An additional category of regional importance was assigned for species approaching the threshold for national importance and those for which the survey area held a notable concentration in a county context. A further category of 'local importance' was used for species that did not reach regional importance but were still of some ecological value. This included all species on the red or amber lists of the 'Birds of Conservation Concern' (Stanbury *et al.* 2021) that did not reach national or regional importance at the development site. National (GB) and International wintering waterfowl baseline populations have been taken from the most recently published population figures (Frost *et al.* 2021 and Brides *et al.* 2021) from the national Wetland Birds Survey and other species from Woodward *et al.* (2020). In addition, listing on Annex 1 of the EU Birds Directive, Schedule 1 of the Wildlife and Countryside and NERC Act Section 41 priority species were all considered in the evaluation process.

Table 5. Definition of terms relating to the conservation value of the ornithological receptors at the site.

Sensitivity	Definition
VERY HIGH	Cited interest of SPAs, SACs and SSSIs. Cited means mentioned in the citation text for the site as a species for which the site is designated (SPAs/SACs) or notified (SSSIs).
HIGH	Other species that contribute to the integrity of an SPA or SSSI. A local population of more than 1% of the national population of a species. EU Birds Directive Annex 1, EU Habitats Directive priority habitat/species and/or W&C Act Schedule 1 species. Ecologically sensitive species, e.g. large birds of prey or rare birds (<300 breeding pairs in the UK).
MEDIUM	Regionally important population of a species, either because of population size or distributional context. NERC Act Section 41 priority species (if not covered above), red-listed species of conservation concern.
LOW	Any other species of conservation interest, e.g. species listed on the Birds of Conservation Concern not covered above. Local BAP species (if not covered above).
NEGLECTIBLE	Green-listed species of favourable conservation status (Stanbury <i>et al.</i> 2021).

21. The conservation value of the breeding bird populations observed in the Proposed Development survey area during the breeding bird surveys (peak from 2010 and 2020) has been summarised in Table 6 below. This included one high sensitivity species (quail) that is a Wildlife and Countryside Act Schedule 1 species, fifteen medium sensitivity species (UK BAP priority/red listed species of conservation concern; grey partridge, lapwing, cuckoo, skylark, yellow wagtail, dunno, song thrush, starling, house sparrow, tree sparrow, linnet, bullfinch, yellowhammer, reed bunting and corn bunting), and nine low sensitivity species.

Table 6. Conservation evaluation of the breeding bird populations in the Proposed Development survey area.

Species	Peak breeding pairs (2010 and 2020)	EU Birds Dir Ann 1	W and C Act Sch 1	Red [R]/ Amber [A] List	NERC S41 priority sp	Value
Red-legged Partridge	7					Negligible
Grey Partridge	10			R	✓	Medium
Quail	1		✓	A		High
Pheasant	12					Negligible
Buzzard	2					Negligible
Kestrel	3			A		Low
Lapwing	3			R	✓	Medium
Stock Dove	7			A		Low
Woodpigeon	99			A		Low
Collared Dove	1					Negligible
Cuckoo	1			R	✓	Medium
Skylark	108			R	✓	Medium
Swallow	16					Negligible
House Martin	2			R		Low
Meadow Pipit	14			A		Low
Yellow Wagtail	33			R	✓	Medium
Pied Wagtail	5					Negligible

Species	Peak breeding pairs (2010 and 2020)	EU Birds Dir Ann 1	W and C Act Sch 1	Red [R]/ Amber [A] List	NERC S41 priority sp	Value
Wren	24			A		Low
Dunnock	28			A	✓	Medium
Robin	9					Negligible
Blackbird	36					Negligible
Song Thrush	6			A	✓	Medium
Blackcap	3					Negligible
Lesser Whitethroat	6					Negligible
Whitethroat	41					Negligible
Chiffchaff	1					Negligible
Willow Warbler	1			A		Low
Long-tailed Tit	4					Negligible
Blue Tit	6					Negligible
Great Tit	6					Negligible
Jackdaw	5					Negligible
Rook	20			A		Low
Carrion Crow	12					Negligible
Starling	1			R	✓	Medium
House Sparrow	12			R	✓	Medium
Tree Sparrow	1			R	✓	Medium
Chaffinch	48					Negligible
Greenfinch	4			R		Low
Goldfinch	19					Negligible
Linnet	46			R	✓	Medium
Bullfinch	1			A	✓	Medium
Yellowhammer	44			R	✓	Medium
Reed Bunting	6			A	✓	Medium
Corn Bunting	31			R	✓	Medium

22. The distributions of the breeding birds of conservation value within the survey area in April-July 2020 are shown on Figures 2 to 10. The more abundant species (i.e. 10 or more records) have been presented separately for clarity.
- Woodpigeon (Figure 2) were widely distributed over the whole survey area, associated particularly with hedgerow and weald habitats.
 - Skylark (Figure 3) were abundant and evenly distributed across all of the open arable habitats across the survey area.
 - Yellow wagtail (Figure 4) were also found widely on arable land across the survey area.
 - Wren (Figure 5) were breeding in scrub and hedgerows across the survey area.
 - Dunnock (Figure 6) was another species of the hedgerow and woodland habitats.
 - Linnet (Figure 7) were widely distributed across the survey area, associated mainly with scrub and hedgerow habitats.
 - Yellowhammer (Figure 8) was another predominantly hedgerow/scrub species.
 - Corn Bunting (Figure 9) were widely distributed across the open arable farmland, though with fewer records in the southern part of the survey area.
23. Other less abundant species of conservation value (Figure 10) were widely scattered across the survey area, with no particular concentrations.
24. The evaluation of the conservation importance of the non-breeding species observed during these surveys is given in Table 7. This included six high value species (barnacle goose, honey-

buzzard, marsh harrier, merlin, hobby and golden plover, EU Annex 1/Wildlife and Countryside Act Schedule 1 species), one medium value (herring gull, a NERC Act priority species), eight additional low value species (through their red/amber listing). All these species were seen only infrequently in generally low numbers during the breeding bird surveys. No important concentrations of flight activity were observed.

Table 7. Conservation evaluation of the non-breeding bird populations in the Proposed Development survey area, April-September 2020.

Species	Peak count	EU Annex 1	W&C Sch 1	Red [R]/ Amber [A] List sp	UK BAP sp.	Conservation value
Barnacle Goose	2	✓		A		High
Honey-buzzard	1	✓	✓	A		High
Cormorant	1					Negligible
Marsh Harrier	1	✓	✓			High
Sparrowhawk	1			A		Low
Merlin	1	✓	✓	R		High
Hobby	1		✓			High
Golden Plover	15	✓				High
Common Gull	12			A		Low
Lesser Black-backed Gull	8			A		Low
Herring Gull	220			R	✓	Medium
Great Black-backed Gull	1			A		Low
Black-headed Gull	20			A		Low
Swift	25			R		Low
House Martin	1			R		Low
Wheatear	1			A		Low

Conclusions

25. The survey area supports a typical range of farmland breeding birds, including a range of NERC priority species. One species specially protected under Schedule 1 of the Wildlife and Countryside Act from disturbance during breeding was found during the 2010 surveys, quail, and given the habitat present it is possible that others such as hobby and barn owl could breed there in the future.
26. The breeding bird populations recorded in 2020 were generally similar to those found previously in the survey area in 2010, with some minor differences attributable to natural variation (given the lack of any local habitat change).

References

- Brides, K., K. A. Wood, S. N. V. Auhage, A. Sigfússon, and C. Mitchell. 2021. Status and distribution of Icelandic-breeding geese: results of the 2020 international census. Wildfowl & Wetlands Trust Report, Slimbridge.
- CIEEM. 2018. Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Winchester: Chartered Institute of Ecology and Environmental Management.

Drewitt, A.L., Whitehead, S. and Cohen, S. 2020. Guidelines for the Selection of Biological SSSIs. Part 2: Detailed Guidelines for Habitats and Species Groups. Chapter 17: Birds (Version 1.1). Joint Nature Conservation Committee, Peterborough.

Gilbert, G., D. W. Gibbons, and J. Evans. 1998. Bird Monitoring Methods: a manual of techniques for key UK species. RSPB /BTO/WWT/JNCC/ITE/ The Seabird Group.

Hardey, J., H. Q. P. Crick, C. V. Wernham, H. T. Riley, B. Etheridge, and D. B. A. Thompson. (2009). Raptors: a field guide to survey and monitoring. 2nd Edition. The Stationary Office Ltd, Edinburgh.

Frost, T.M., Calbrade, N.A., Birtles, G.A., Hall, C., Robinson, A.E., Wotton, S.R., Balmer, D.E. and Austin, G.E. 2021. Waterbirds in the UK 2019/20: The Wetland Bird Survey. BTO/RSPB/JNCC. Thetford.

Gilbert, G., Gibbons, D. W. & Evans, J. 1998. Bird Monitoring Methods: a manual of techniques for key UK species. RSPB /BTO/WWT/JNCC/ITE/The Seabird Group.

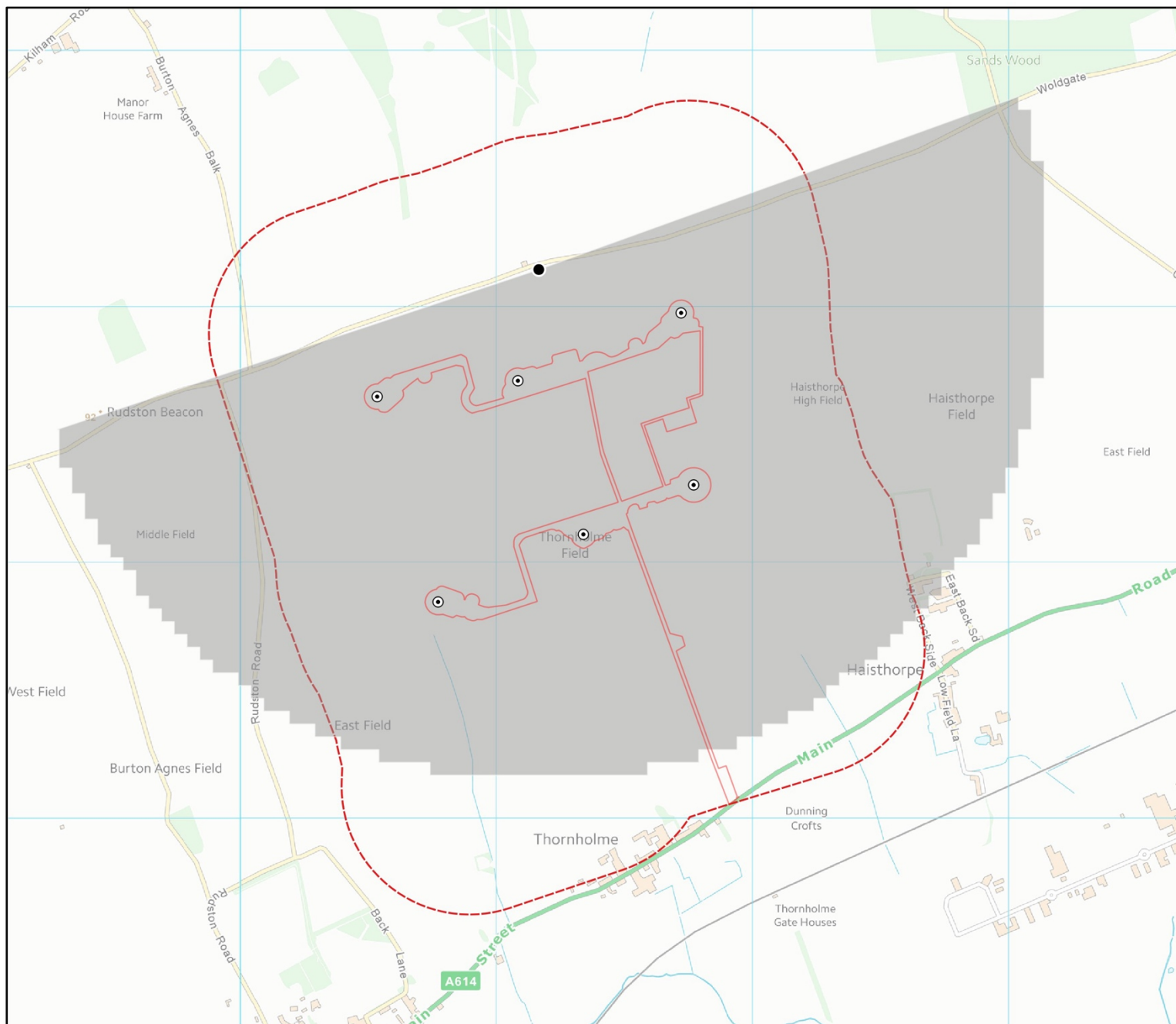
Percival, S. M. 2007. Predicting the effects of wind farms on birds in the UK: the development of an objective assessment methodology.in M. de Lucas, Janss, G.F.E. and Ferrer, M., editor. Birds and Wind Farms: risk assessment and mitigation. Quercus, Madrid

Percival, S.M. 2011. Thornholme Field Wind Farm Environmental Statement Chapter 8: Ornithology. Wind Prospect Ltd.

Scottish Natural Heritage. 2017. Recommended bird survey methods to inform impact assessment of onshore wind farms. SNH Guidance. SNH, Battleby.

Stanbury, A., M. Eaton, N. Aebischer, D. Balmer, A. Brown, A. Douse, P. Lindley, N. McCulloch, D. Noble, and I. Win. 2021. The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds 114:723-747.

Woodward, I., Aebischer, N., Burnell, D., Eaton, M., Frost, T., Hall, C., Stroud, D. & Noble, D. 2020. Population estimates of birds in Great Britain and the United Kingdom. British Birds, 113: 69-104.



Legend

- Application Boundary
- Proposed Turbine Locations
- Vantage Point (VP) Location
- VP Viewshed
- Breeding Bird Survey Area 2020

0 0.25 0.5 km



© Crown copyright and database rights 2026
Ordnance Survey 0100031673

Produced by: SP

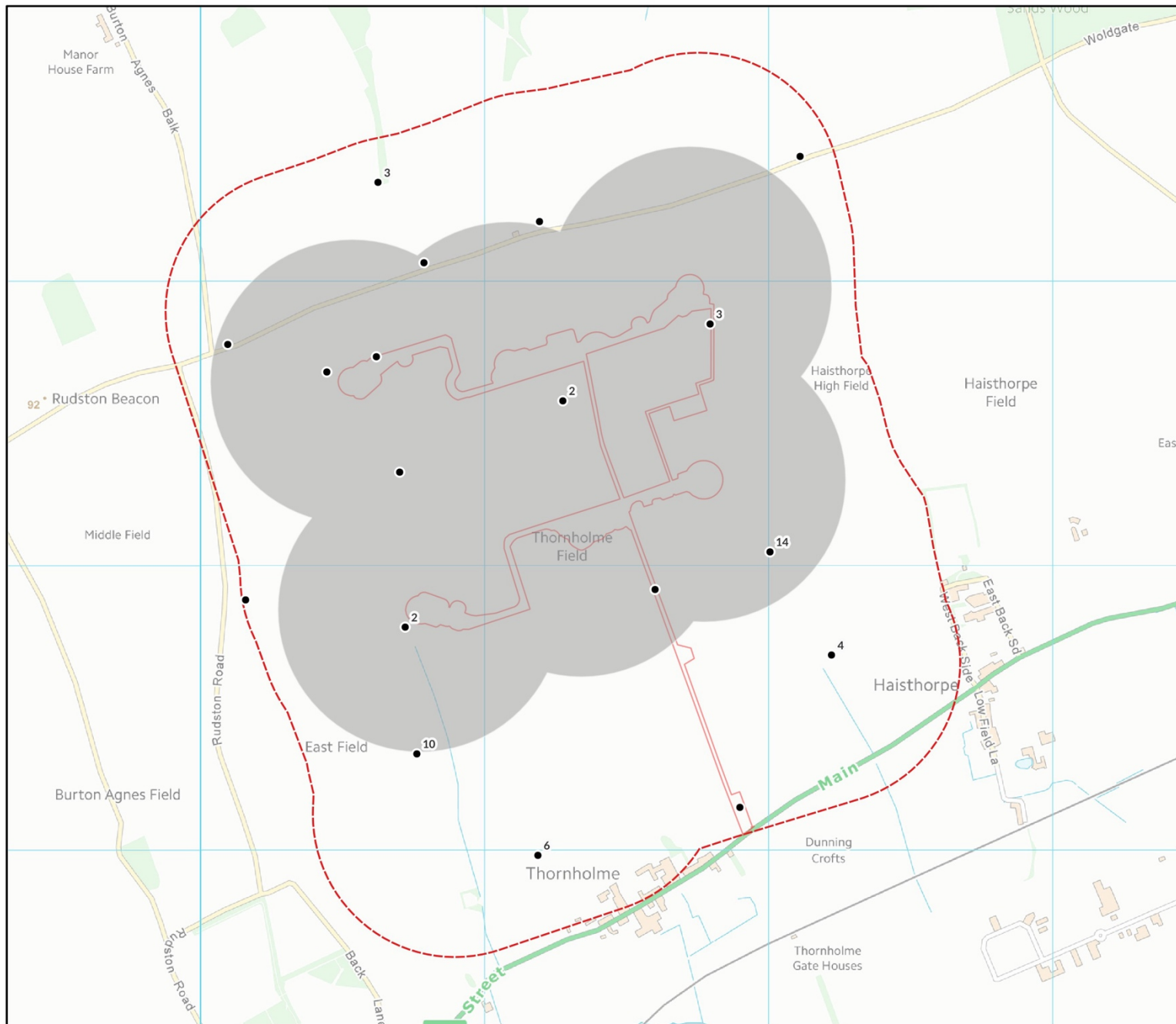
Ref:

Checked by: TP

Date: 5/3/26

**Figure 1. Breeding Bird Survey Area
2020**

**Three Oaks Renewable Energy Park
Extension
Appendix 7-1 Breeding Birds 2020**



Legend

- Breeding Bird Survey Area 2020
- Approx. Breeding Locations (numbers = multiple pairs at single location)
- Application Boundary
- Wind Turbine 500 m Buffer

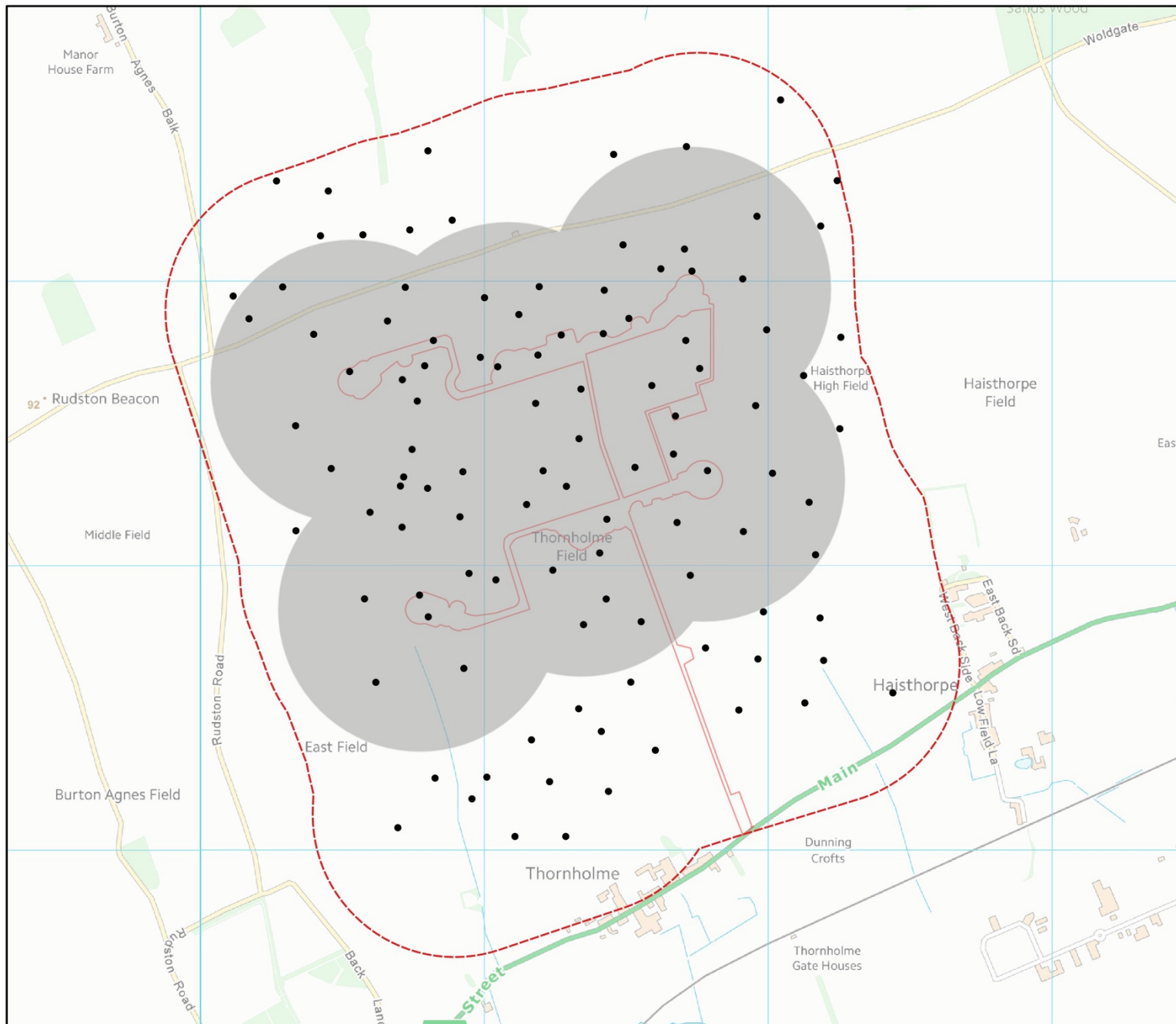
0 0.25 0.5 km

© Crown copyright and database rights 2026
Ordnance Survey 0100031673

Produced by: SP	Ref:
Checked by: TP	Date: 3/4/26

Figure 2. Breeding Woodpigeon 2020

**Three Oaks Renewable Energy Park Extension
Appendix 7-1. Breeding Birds 2020**



Legend

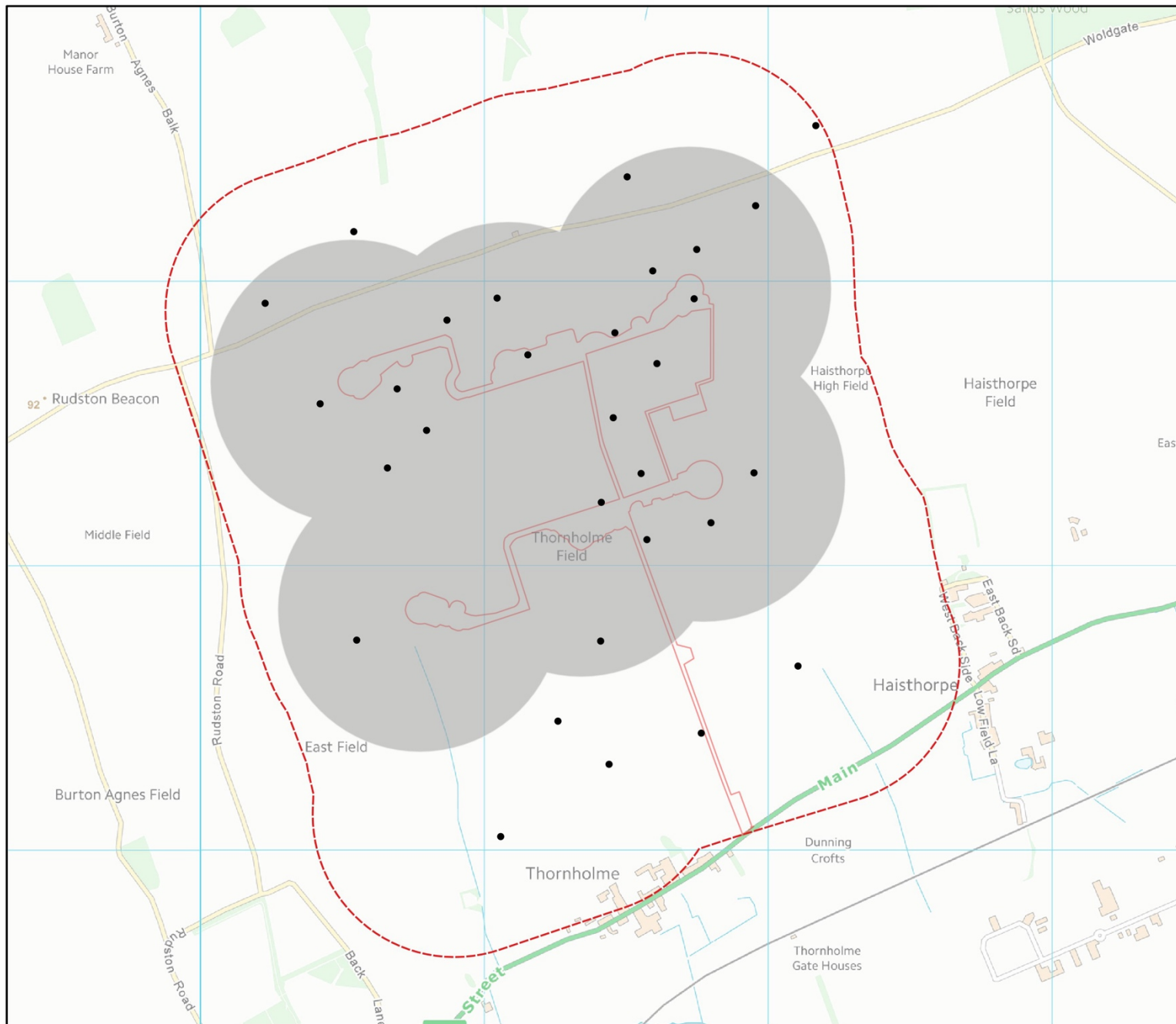
- Breeding Bird Survey Area 2020
- Approx. Breeding Locations
- Application Boundary
- Wind Turbine 500 m Buffer

© Crown copyright and database rights 2026
Ordnance Survey 0100031673

Produced by: SP	Ref:
Checked by: TP	Date: 3/4/26

Figure 3. Breeding Skylark 2020

**Three Oaks Renewable Energy Park
Extension
Appendix 7-1. Breeding Birds 2020**



Legend

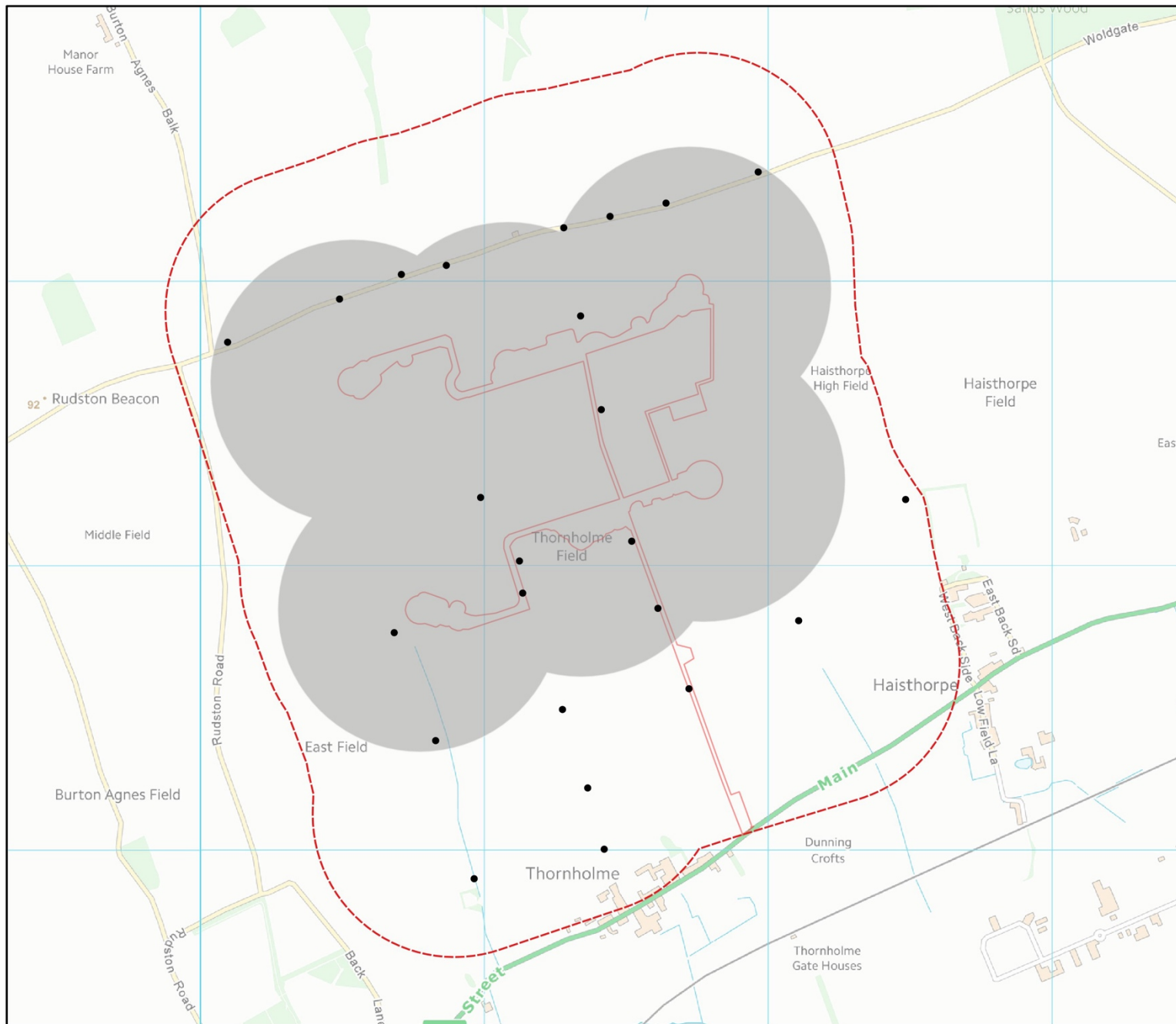
- Breeding Bird Survey Area 2020
- Approx. Breeding Locations
- Application Boundary
- Wind Turbine 500 m Buffer

© Crown copyright and database rights 2026
Ordnance Survey 0100031673

Produced by: SP	Ref:
Checked by: TP	Date: 3/4/26

Figure 4. Breeding Yellow Wagtail 2020

**Three Oaks Renewable Energy Park Extension
Appendix 7-1. Breeding Birds 2020**

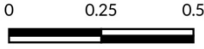




Legend

- Breeding Bird Survey Area 2020
- Approx. Breeding Locations
- Application Boundary
- Wind Turbine 500 m Buffer



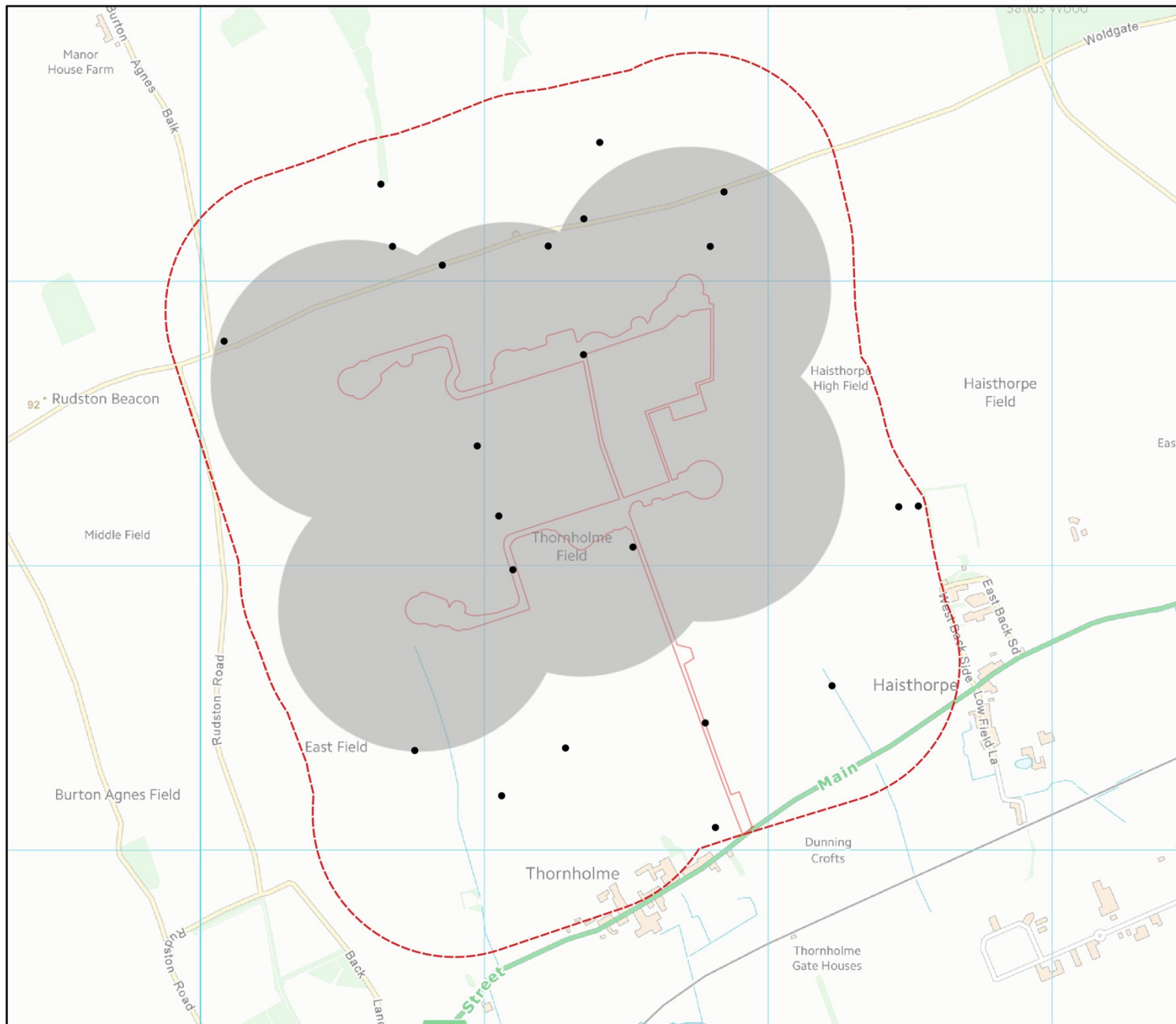


© Crown copyright and database rights 2026
Ordnance Survey 0100031673

Produced by: SP	Ref:
Checked by: TP	Date: 3/4/26

Figure 5. Breeding Wren 2020

**Three Oaks Renewable Energy Park
Extension
Appendix 7-1. Breeding Birds 2020**

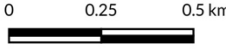




Legend

- Breeding Bird Survey Area 2020
- Approx. Breeding Locations
- Application Boundary
- Wind Turbine 500 m Buffer



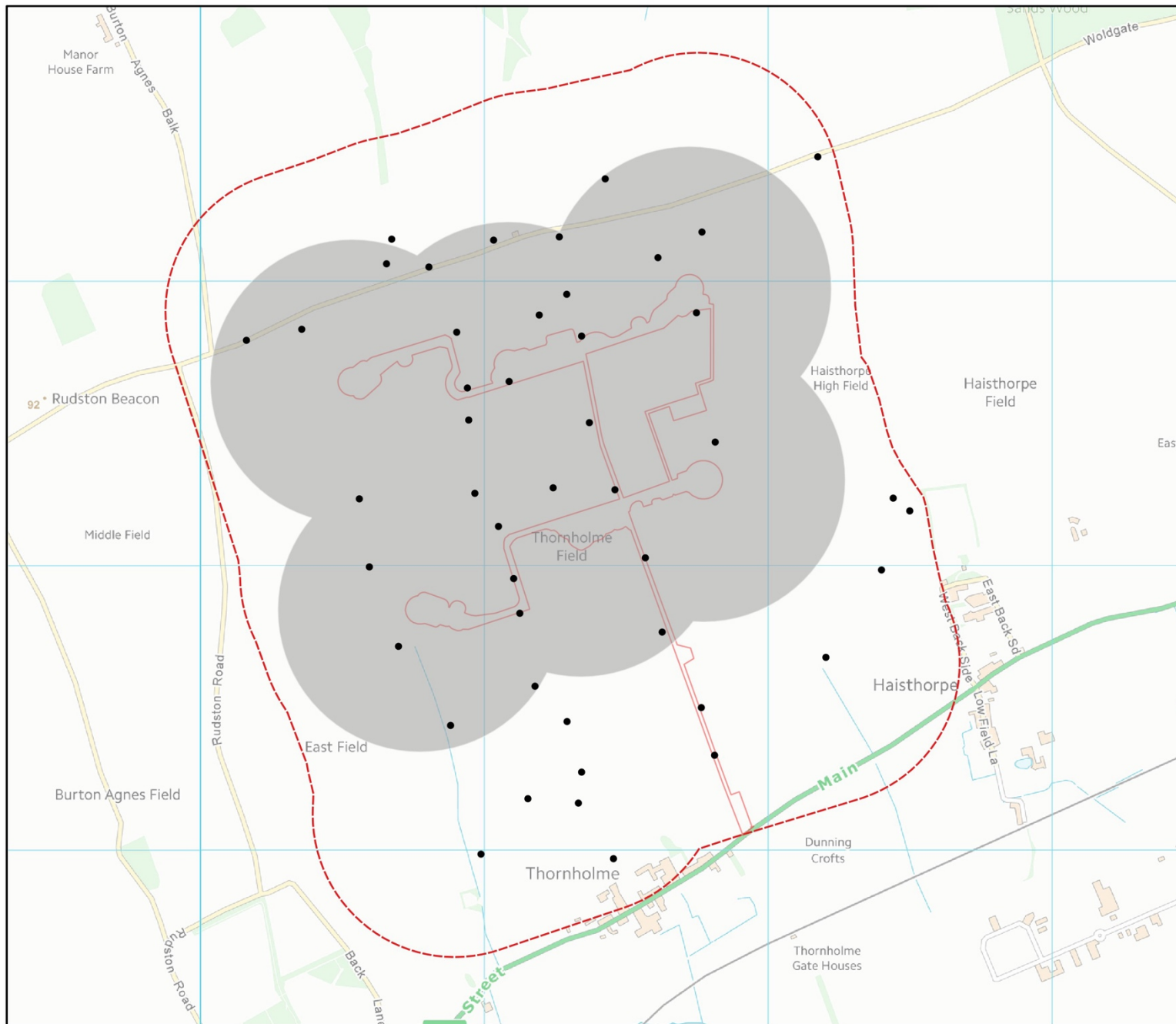


© Crown copyright and database rights 2026
Ordnance Survey 0100031673

Produced by: SP	Ref:
Checked by: TP	Date: 3/4/26

Figure 6. Breeding Dunnock 2020

**Three Oaks Renewable Energy Park
Extension
Appendix 7-1. Breeding Birds 2020**





Legend

- Breeding Bird Survey Area 2020
- Approx. Breeding Locations
- Application Boundary
- Wind Turbine 500 m Buffer



0 0.25 0.5 km

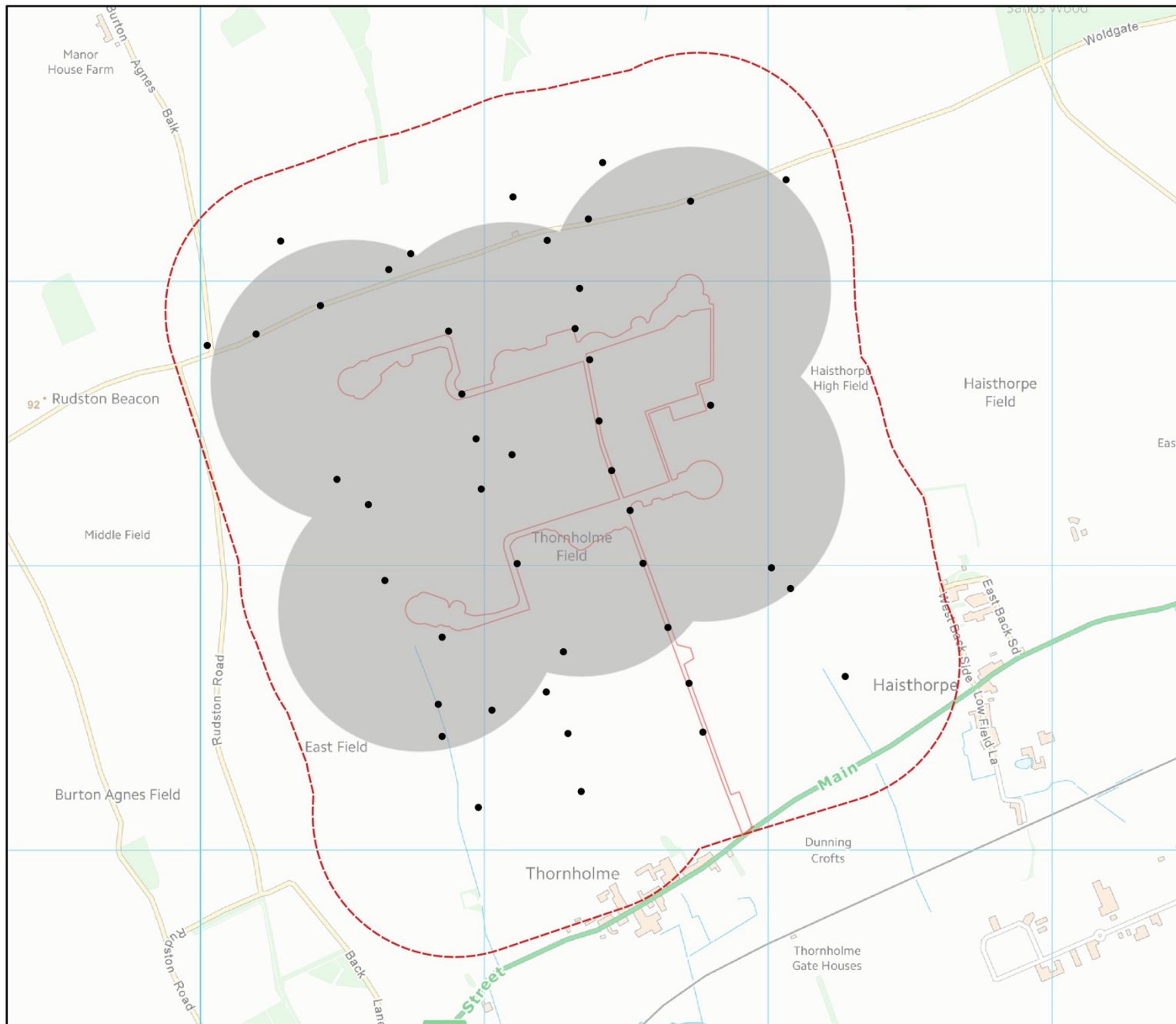


© Crown copyright and database rights 2026
Ordnance Survey 0100031673

Produced by: SP	Ref:
Checked by: TP	Date: 3/4/26

Figure 7. Breeding Linnet 2020

**Three Oaks Renewable Energy Park
Extension
Appendix 7-1. Breeding Birds 2020**



Legend

- Breeding Bird Survey Area 2020
- Approx. Breeding Locations
- Application Boundary
- Wind Turbine 500 m Buffer

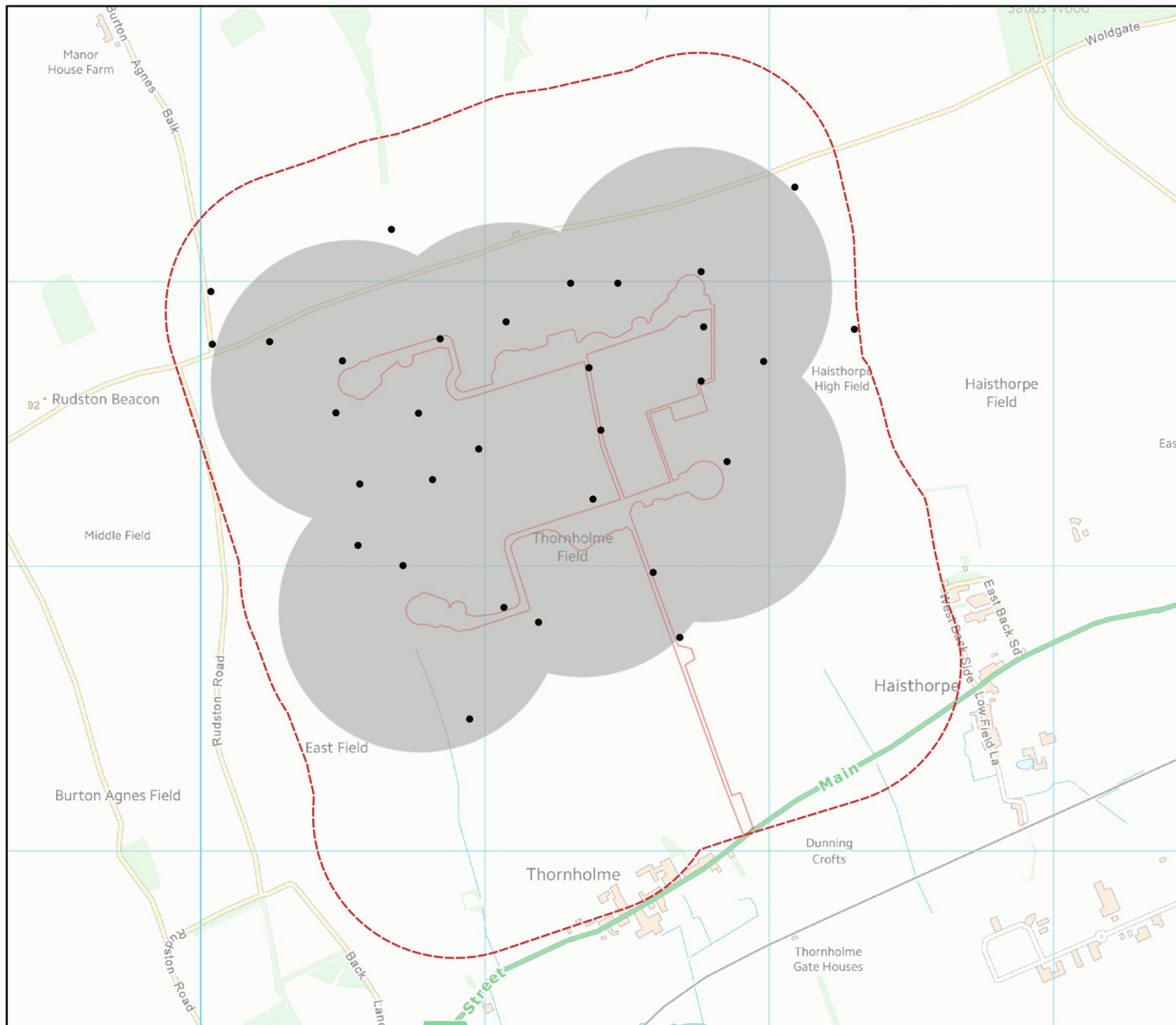
0 0.25 0.5 km

© Crown copyright and database rights 2026
Ordnance Survey 0100031673

Produced by: SP	Ref:
Checked by: TP	Date: 3/4/26

Figure 8. Breeding Yellowhammer 2020

**Three Oaks Renewable Energy Park Extension
Appendix 7-1. Breeding Birds 2020**



Legend

- Breeding Bird Survey Area 2020
- Approx. Breeding Locations
- Application Boundary
- Wind Turbine 500 m Buffer

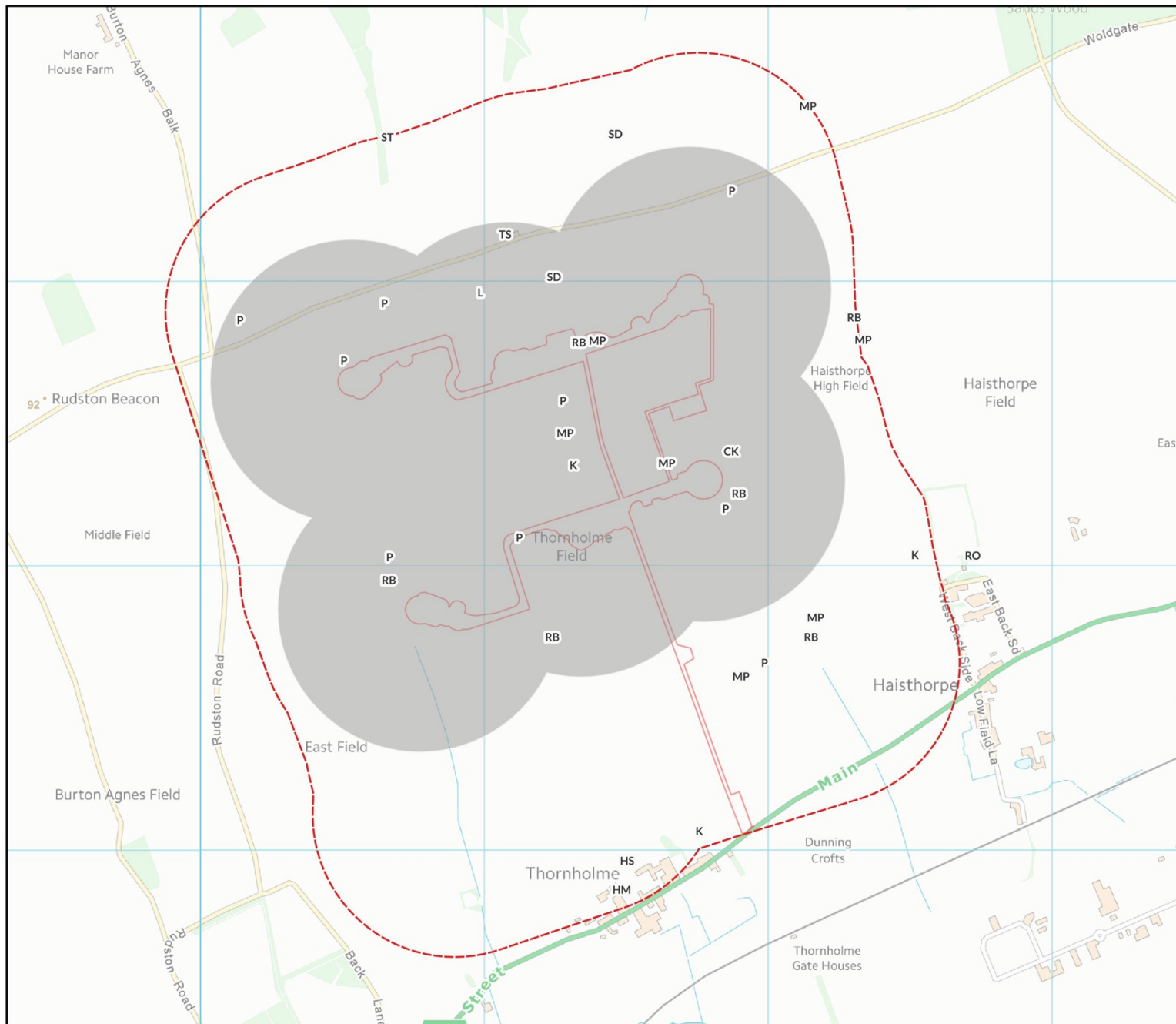
0 0.25 0.5 km

© Crown copyright and database rights 2026
Ordnance Survey 0100031673

Produced by: SP	Ref:
Checked by: TP	Date: 3/4/26

Figure 9. Breeding Corn Bunting 2020

**Three Oaks Renewable Energy Park Extension
Appendix 7-1. Breeding Birds 2020**



Legend

- Breeding Bird Survey Area 2020
- Application Boundary
- Wind Turbine 500 m Buffer

Approx. Breeding Locations:

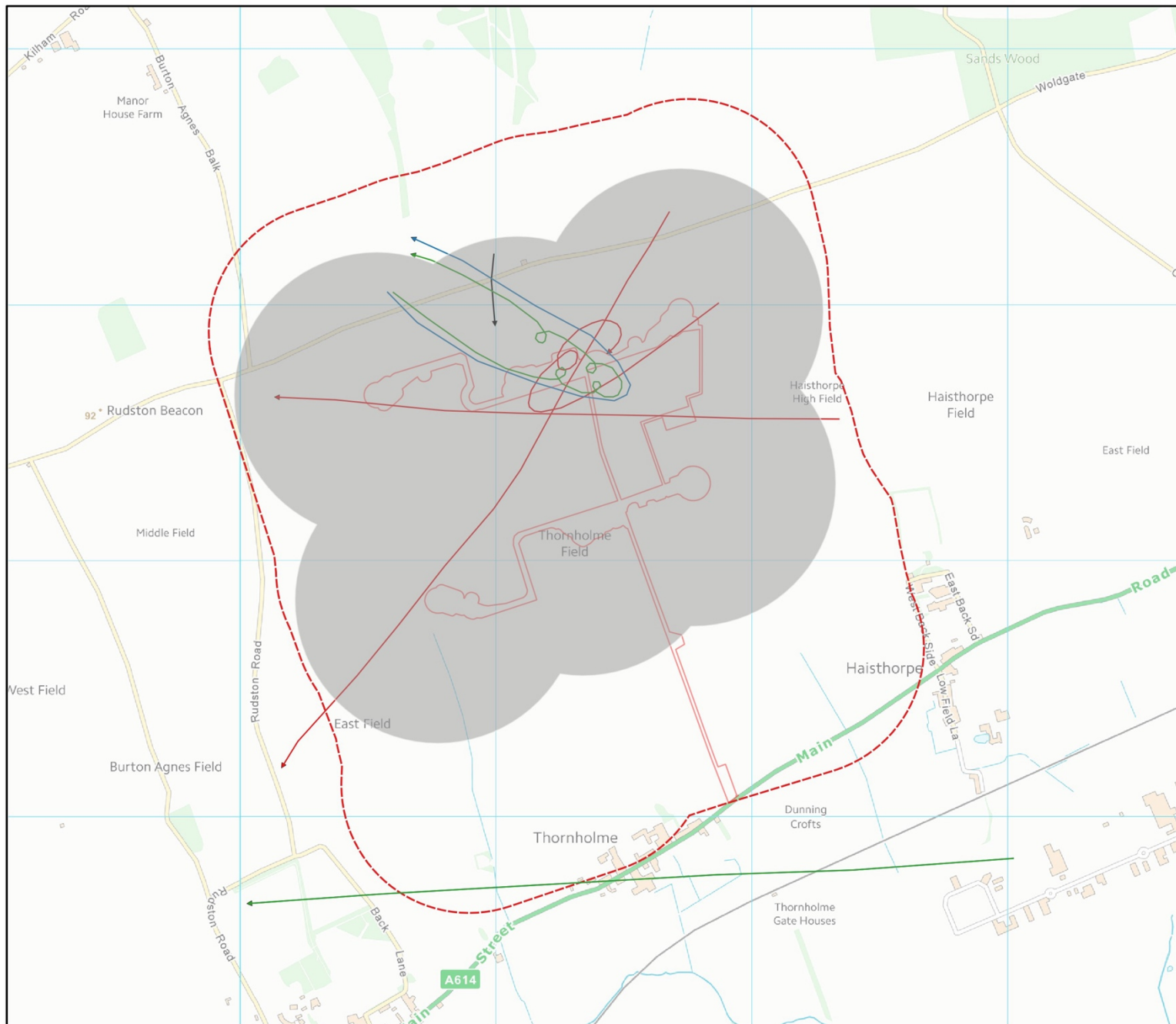
- CK - Cuckoo
- HM - House Martin
- HS - House Sparrow
- K - Kestrel
- L - Lapwing
- MP - Meadow Pipit
- P - Grey Partridge
- RB - Reed Bunting
- RO - Rook (20 pairs)
- SD - Stock Dove
- ST - Song Thrush
- TS - Tree Sparrow

© Crown copyright and database rights 2026
Ordnance Survey 0100031673

Produced by: SP	Ref:
Checked by: TP	Date: 3/4/26

**Figure 10. Other Breeding Species
2020**

**Three Oaks Renewable Energy Park
Extension
Appendix 7-1. Breeding Birds 2020**



Legend

- Application Boundary
- Breeding Bird Survey Area 2020
- Collision Risk Zone

Flight Lines:

- Black-headed Gull
- Common Gull
- Golden Plover
- Lapwing

0 0.25 0.5 km



© Crown copyright and database rights 2026
Ordnance Survey 0100031673

Produced by: SP

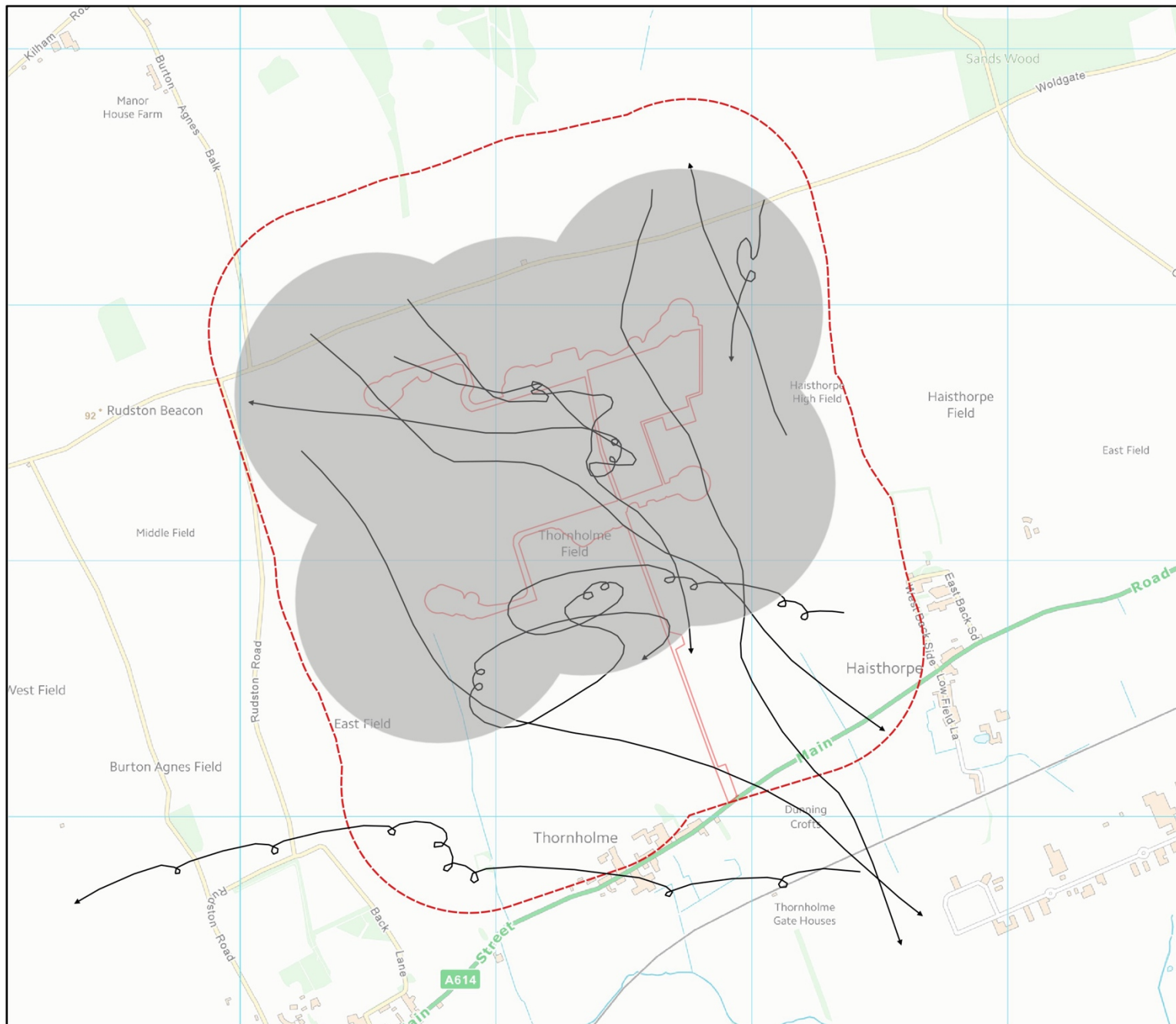
Ref:

Checked by: TP

Date: 11/3/26

**Figure 11. Breeding Season 2020:
Wader and small gull flight lines**

**Three Oaks Renewable Energy Park
Extension
Appendix 7-1 Breeding Birds 2020**

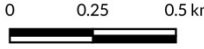




Legend

- Application Boundary
- Breeding Bird Survey Area 2020
- Collision Risk Zone
- Flight Lines





© Crown copyright and database rights 2026
Ordnance Survey 0100031673

Produced by: SP	Ref:
Checked by: TP	Date: 3/4/26

**Figure 13. Breeding Season 2020:
Marsh Harrier flight lines**

**Three Oaks Renewable Energy Park
Extension
Appendix 7-1 Breeding Birds 2020**

APPENDIX 1. VANTAGE POINT SURVEY DATES AND WEATHER CONDITIONS

Date	Start time	Finish time	Observation Time (hh:mm)	Weather
15/04/2020	14:05	17:05	03:00	cloud 0, wind WSW 3, 15C, vis very good
23/04/2020	16:40	19:40	03:00	cloud 7/8, wind NNE 3, 12C, vis very good
08/05/2020	05:10	08:10	03:00	cloud 7/8, wind W 1, 10C, vis very good
21/05/2020	18:20	21:20	03:00	cloud 1/8, wind W 2, 22C, vis very good
04/06/2020	10:45	13:45	03:00	cloud 8/8, wind NNW 3, 10C, vis very good, showers
18/06/2020	13:00	16:00	03:00	cloud 8/8, wind NNE 3, 12C, showers, vis good
05/07/2020	08:20	11:20	03:00	cloud 2/8, wind WSW 4, 16C, vis excellent
22/07/2020	16:00	19:00	03:00	cloud 8/8, wind SW 2, 17, vis excellent
18/08/2020	08:30	11:30	03:00	cloud 7/8, wind SSW 1, 17C, vis good, fog clearing
18/08/2020	12:00	15:00	03:00	cloud 7/8, wind SSW 3, 18C, vis very good, squall 12:20 - 12:30
03/09/2020	15:00	18:00	03:00	cloud 6/8, wind WSW 3, 21C, vis very good
17/09/2020	11:20	14:20	03:00	cloud 2/8, wind ESE 3, 16C, vis very good

APPENDIX 2. VANTAGE POINT SURVEY KEY SPECIES DATA

Date	Time	Species	Count	Direction of flight	Flight height (m)	Activity	Time observed (sec)	Notes
15/04/2020	14:50	HG	6	W	115		300	
15/04/2020	15:21	HG	60	ESE	40	flushed	130	landed
15/04/2020	15:32	HG	3	ESE	65		170	
15/04/2020	15:52	HG	6	ENE	55		200	
15/04/2020	15:55	K	1	NNW	14	hunt	170	male
15/04/2020	16:07	HG	50	ENE	40	flushed	160	
15/04/2020	16:39	HG	1	ESE	50		150	
15/04/2020	16:50	HG	8	E	50		190	
15/04/2020	16:58	HG	14	SSW	15	feed	90	landed
15/04/2020	17:00	HG	2	WNW	30	feed	100	landed
23/04/2020	16:42	HG	4	ENE	45		100	
23/04/2020	16:46	HG	1	ENE	45		140	
23/04/2020	16:54	HG	2	ENE	45		130	
23/04/2020	16:55	HG	1	E	35		150	
23/04/2020	16:57	HG	3	ENE	60		110	
23/04/2020	17:02	HG	4	ENE	60		110	
23/04/2020	17:03	HG	1	NNE	30		190	
23/04/2020	17:10	HG	2	ENE	45		130	
23/04/2020	17:17	HG	7	ESE	70		200	
23/04/2020	17:25	HG	7	ENE	65		200	
23/04/2020	17:35	HG	3	E	45		180	
23/04/2020	17:02	HG	6	ENE	60		220	
23/04/2020	18:05	HG	3	ESE	55		190	
23/04/2020	18:08	HG	1	ESE	50		220	
23/04/2020	18:13	HG	3	ENE	60		190	
23/04/2020	18:19	K	1	WSW	5	hunt	40	female, landed on pole
23/04/2020	18:22	HG	2	E	80		180	
23/04/2020	18:25	HG	4	E	35		150	
23/04/2020	18:26	HG	2	ENE	90		220	

Date	Time	Species	Count	Direction of flight	Flight height (m)	Activity	Time observed (sec)	Notes
23/04/2020	18:31	ML	1	ESE	41	hunt	80	female, chasing skylark, dropped out of view
23/04/2020	18:36	HG	17	ENE	80		200	
23/04/2020	18:36	LB	1	ENE	80		200	
23/04/2020	18:42	HG	8	E	75		160	
23/04/2020	18:45	HG	8	ESE	80		180	
23/04/2020	18:46	HG	1	ENE	30		90	
23/04/2020	18:57	HG	19	ESE	55	roost	170	
23/04/2020	19:09	HG	6	ENE	60	roost	100	
23/04/2020	19:24	HG	15	ESE	75	roost	180	
23/04/2020	19:29	HG	1	ESE	30	roost	110	
23/04/2020	19:30	HG	36	E	70	roost	200	
23/04/2020	19:33	LB	1	WNW	30		120	
23/04/2020	19:36	HG	24	E	75	roost	190	
08/05/2020	05:12	HG	5	WSW	60	roost	160	
08/05/2020	05:16	HG	2	WSW	80	roost	150	
08/05/2020	05:20	HG	8	SW	20	roost	50	landed
08/05/2020	05:21	LB	3	SSW	55	roost	220	
08/05/2020	05:24	HG	12	SW	15	roost	50	landed
08/05/2020	05:30	HG	3	NNE	30	roost	120	landed
08/05/2020	05:32	HG	2	WNW	25	roost	100	landed
08/05/2020	05:35	HG	2	WSW	50	roost	180	
08/05/2020	05:40	HG	2	ENE	70		140	
08/05/2020	05:42	MR	1	SSW	35	migrating	290	female
08/05/2020	05:45	HG	2	WSW	80	roost	160	
08/05/2020	05:52	HG	2	ESE	45		90	
08/05/2020	06:02	HG	3	WSW	20	feed	120	
08/05/2020	06:04	HG	2	ESE	38		90	
08/05/2020	06:06	HG	2	WNW	30	roost	100	landed
08/05/2020	06:08	HG	4	WNW	45	roost	190	
08/05/2020	06:08	LB	3	WNW	45	roost	190	
08/05/2020	06:15	HG	2	WNW	70	roost	180	
08/05/2020	06:20	HG	1	ENE	70		150	
08/05/2020	06:22	HG	2	WNW	60	roost	90	landed
08/05/2020	06:25	HG	3	ESE	30		90	
08/05/2020	06:27	HG	4	ENE	100		200	
08/05/2020	06:30	HG	2	WSW	30	feed	130	
08/05/2020	06:30	LB	2	WSW	30	feed	130	
08/05/2020	06:32	HG	3	ESE	35		90	
08/05/2020	06:38	HG	3	WSW	25	feed	120	
08/05/2020	06:44	HG	3	WSW	80	roost	150	
08/05/2020	06:48	HG	2	ENE	30		160	
08/05/2020	06:50	HG	4	SW	25	feed	120	landed
08/05/2020	06:56	HG	2	SW	20	feed	110	landed
08/05/2020	06:58	HG	2	NNW	35	feed	130	landed
08/05/2020	07:01	HG	2	ESE	40		90	
08/05/2020	07:05	HG	12	SW	25	flushed	110	landed
08/05/2020	07:05	HG	13	WSW	25	flushed	60	
08/05/2020	07:15	HG	2	ESE	33		90	
08/05/2020	07:17	L	1	S	8	feed	20	landed
08/05/2020	07:20	HG	10	WSW	10	feed	30	
08/05/2020	07:27	HG	2	NW	50	feed	150	
08/05/2020	07:29	HG	5	WNW	35	feed	110	landed
08/05/2020	07:37	HG	1	NW	45	feed	150	
08/05/2020	07:37	LB	1	NW	45	feed	150	
08/05/2020	07:43	HG	1	NNW	35	feed	120	landed
08/05/2020	07:47	HG	2	WNW	40	feed	120	landed

Date	Time	Species	Count	Direction of flight	Flight height (m)	Activity	Time observed (sec)	Notes
08/05/2020	07:50	HG	2	NNW	30	feed	120	landed
08/05/2020	07:52	HG	2	NNE	25	feed	140	landed
08/05/2020	08:02	HG	2	NNE	30	feed	150	landed
08/05/2020	08:04	HG	6	SW	20	feed	45	landed
21/05/2020	18:32	LB	1	NE	30		160	
21/05/2020	18:40	HG	2	ESE	60		170	
21/05/2020	18:53	HG	1	ENE	80		150	
21/05/2020	19:06	HG	1	ESE	60		150	
21/05/2020	19:10	HG	3	NNW	40		130	
21/05/2020	19:24	HG	2	WSW	80		200	
21/05/2020	19:44	HG	7	ENE	80		130	
21/05/2020	19:50	HG	3	ESE	60	roost	150	
21/05/2020	19:50	LB	1	ESE	60	roost	150	
21/05/2020	19:50	HG	2	ENE	40	roost	140	
21/05/2020	20:02	BY	2	WNW	60		200	
21/05/2020	20:10	K	1	ENE	23	hunt	1080	male
04/06/2020	10:57	HG	1	NNW	40	feed	150	
04/06/2020	11:07	LB	1	WNW	50	feed	200	
04/06/2020	11:15	K	1	WNW	25	hunt	30	male
04/06/2020	13:07	K	1	N	18	hunt	200	male
04/06/2020	13:15	HG	2	NNW	80	feed	140	
04/06/2020	13:17	K	1	SSW	105	soar	280	
04/06/2020	13:33	HG	10	S	115	soar	320	
18/06/2020	13:08	LB	1	ENE	20		150	
18/06/2020	13:34	LB	1	SSE	35		140	
18/06/2020	13:41	LB	1	NE	35		160	
18/06/2020	14:07	LB	1	ESE	45		150	
18/06/2020	15:27	LB	1	ENE	30		110	
18/06/2020	15:57	HG	1	SSW	35		160	
05/07/2020	08:24	HG	1	WSW	25		170	
05/07/2020	08:45	HG	7	ENE	33		130	
05/07/2020	08:50	LB	1	ENE	23		140	
05/07/2020	09:16	HG	2	ESE	38		120	
05/07/2020	09:28	HG	3	ESE	35		120	
05/07/2020	10:02	LB	2	ESE	60		160	
05/07/2020	10:12	HG	2	ESE	30		130	
05/07/2020	10:18	HG	1	ESE	28		140	
05/07/2020	10:27	HG	1	ESE	90		110	
05/07/2020	10:29	HG	4	WSW	20		180	
05/07/2020	10:45	HG	2	WSW	15		170	
22/07/2020	16:06	HG	2	SSE	45		200	
22/07/2020	16:22	LB	1	ESE	35		220	
22/07/2020	16:50	HG	1	WSW	30		180	
22/07/2020	16:58	HG	1	ENE	50		200	
22/07/2020	17:27	HG	1	WSW	35		190	
22/07/2020	17:27	LB	2	WSW	35		190	
22/07/2020	17:30	HG	1	SE	33		190	
22/07/2020	17:33	MR	2	SSW	4	migrating	90	juvs, lost to view behind hedges
22/07/2020	17:43	LB	1	SW	23		220	
22/07/2020	17:50	LB	2	NNE	40		110	
22/07/2020	17:57	HG	1	ENE	70		180	
22/07/2020	18:05	LB	1	ESE	40		130	
22/07/2020	18:44	LB	1	WSW	40		200	
22/07/2020	18:56	LB	1	ESE	60		240	
18/08/2020	08:34	HG	87	WNW	70	roost	170	
18/08/2020	08:34	LB	2	WNW	70	roost	170	

Date	Time	Species	Count	Direction of flight	Flight height (m)	Activity	Time observed (sec)	Notes
18/08/2020	08:43	HG	6	WNW	60	roost	140	
18/08/2020	09:00	GP	8	W	120		110	
18/08/2020	09:10	K	1	SSE	13	hunt	200	
18/08/2020	09:13	HG	27	SSW	105		250	
18/08/2020	09:33	HG	15	SSE	65	feed	180	
18/08/2020	09:45	SH	1	N	60	soar	230	female
18/08/2020	09:56	MR	1	ESE	16	hunt	550	female
18/08/2020	09:58	K	1	NNE	17	hunt	50	male
18/08/2020	10:18	HG	2	WSW	90		250	
18/08/2020	10:25	MR	1	SSE	25	hunt	220	female, same as 8
18/08/2020	10:28	SH	2	SSE	55	soar	140	
18/08/2020	10:41	GP	12	SSW	85		160	
18/08/2020	11:03	K	1	SSW	9	hunt	660	female
18/08/2020	11:06	HG	1	E	40		160	
18/08/2020	11:07	SH	1	W	14	hunt	45	juv
18/08/2020	11:23	HG	2	WSW	60		230	
18/08/2020	12:09	MR	2	SE	13	migrating	330	females
18/08/2020	12:15	MR	1	SE	9	migrating	310	juv
18/08/2020	12:36	HG	3	WSW	50		200	
18/08/2020	13:12	ML	1	ENE	3	hunt	50	juv
18/08/2020	13:19	K	1	SW	13	hunt	40	female, landed on wires
18/08/2020	13:33	K	1	NNE	8	hunt	50	female, same as 7
18/08/2020	13:43	GP	15	SW	35	roost	110	landed
18/08/2020	13:44	HG	2	SSW	60	feed	270	
18/08/2020	13:44	GB	1	SSW	60	feed	270	
18/08/2020	13:50	K	1	SW	5	hunt	20	male, landed on wires
18/08/2020	14:01	MR	1	NNW	7	hunt	70	juv
18/08/2020	14:44	HG	2	SE	75	feed	200	
18/08/2020	14:52	HG	38	ESE	55		240	
03/09/2020	15:04	BH	20	WSW	65	feed	150	
03/09/2020	15:04	CM	8	WSW	65	feed	150	
03/09/2020	15:04	HG	60	WSW	65	feed	150	
03/09/2020	15:11	HG	270	ESE	115	flushed	190	
03/09/2020	15:20	HY	1	WSW	40	hunt	110	
03/09/2020	15:35	HG	8	WSW	80	feed	160	
03/09/2020	16:00	K	1	NNW	18	hunt	600	female
03/09/2020	16:06	HG	2	WNW	50		200	
03/09/2020	16:15	HG	2	WSW	65	feed	170	
03/09/2020	16:30	HG	16	NW	45	feed	200	
03/09/2020	16:32	HG	38	WSW	55	feed	180	
03/09/2020	16:41	HG	18	NW	50	feed	200	
03/09/2020	16:46	HG	7	WSW	50	feed	170	
03/09/2020	16:52	HG	10	NW	30	feed	200	
03/09/2020	17:02	SH	1	SW	7	hunt	30	male
03/09/2020	17:04	HG	30	NNW	30	feed	160	
03/09/2020	17:22	HG	3	WSW	60	feed	170	
03/09/2020	17:48	K	1	SSE	10	hunt	140	
17/09/2020	11:27	K	1	NW	9	hunt	40	
17/09/2020	11:45	BH	6	ESE	60	flushed	250	
17/09/2020	11:45	CM	12	ESE	60	flushed	250	
17/09/2020	11:45	HG	59	ESE	60	flushed	250	
17/09/2020	12:00	K	1	ENE	21	hunt	220	
17/09/2020	12:04	SH	1	WSW	3	hunt	50	female
17/09/2020	12:16	HG	1	ESE	65		170	
17/09/2020	12:40	HG	2	WNW	65	feed	110	
17/09/2020	13:06	K	1	SSE	11	hunt	220	
17/09/2020	13:25	SH	1	SE	35	soar	230	female

Date	Time	Species	Count	Direction of flight	Flight height (m)	Activity	Time observed (sec)	Notes
17/09/2020	13:33	K	1	ENE	8	hunt	140	female
17/09/2020	13:42	MR	1	WNW	38	soar	1860	juv
17/09/2020	13:47	HZ	1	W	115	migrating	420	
17/09/2020	13:47	MR	1	W	115	migrating	420	
17/09/2020	13:58	HG	36	SSE	60	flushed	160	
17/09/2020	14:07	K	1	SE	8	hunt	200	female