



Cambourne to Cambridge Better Public Transport:

Winter Bird Survey 2018-19

FINAL REPORT

For:

Greater Cambridge Partnership

Darren Frost

BSc (Hons) CEnv MCIEEM CBiol MRSB

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© **Cambridge Ecology**

Hilton House
37 Hilton Street
Over
Cambridgeshire
CB24 5PU

Telephone: +44 (0)1954 231239

E-mail: info@cambridgeecology.com

Web address: www.cambridgeecology.com

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To achieve the study objectives stated in this report, we were required to base our conclusions on the best information available during the period of the investigation and within the limits prescribed by our client in the agreement.

No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information. Thus, we cannot guarantee that the investigations completely defined the degree or extent of e.g. species abundances or habitat management efficacy described in the report.

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0 EXECUTIVE SUMMARY

- 0.1 On behalf of Greater Cambridge Partnership, Cambridge Ecology Ltd was commissioned in November 2018, to carry out a winter bird survey on land associated with the Cambourne to Cambridge Better Public Transport Scheme. The survey comprised the section between the eastern entrance to Bourn Airfield and Grange Road, Cambridge.
- 0.2 The survey recorded a total of 62 bird species. Of these 21 species were considered to be of particular conservation importance. These species comprised Grey Partridge, Little Egret, Barn Owl, Kingfisher, Golden Plover, Woodcock, Skylark, Marsh Tit, Grey Wagtail, Starling, Fieldfare, Redwing, Song Thrush, Mistle Thrush, House Sparrow, Dunnock, Bullfinch, Linnet, Corn Bunting, Yellowhammer and Reed Bunting; plus a further 10 species, Mute Swan, Teal, Mallard, Snipe, Black-headed Gull, Common Gull, Lesser-Black-backed Gull, Stock Dove, Kestrel and Meadow Pipit, which are Amber listed on the Birds of Conservation Concern.
- 0.3 During the surveys two of the main target species, namely Golden Plover and Barn Owl were seen and heard. Golden Plover flocks (including a flock of 19 birds) were recorded in arable fields south of the Cambridge West site (east of the M11 motorway); and in arable fields south of the Chrome Lea Business Park south of the A1303 (west of the M11 motorway). A Barn Owl was observed hunting over grassland at the eastern end of the survey area adjacent to Bin Brook.
- 0.4 Observations of bird behaviour during the survey visits indicated that the birds were using the survey area for feeding and roosting, and the site was therefore an important area for the survival of the species assemblage present.
- 0.5 The distribution of wintering birds recorded during the survey visits was not evenly spread across the survey area, but was focused on seven particular areas that provided them with suitably safe feeding and roosting habitat.
- 0.6 Based on the findings of this survey without mitigation, the presence of the 31 species of bird considered of particular conservation importance could constitute a constraint to the scheme and therefore are of material consideration during the planning decision process.
- 0.7 The detail of the mitigation measures would depend on the actual route of the scheme. The mitigation measures would be necessary to enable the proposed development to proceed without causing a significant adverse effect on the local wintering bird population.
- 0.8 A number of enhancement measures would be possible to benefit wintering birds. The inclusion of habitat creation, enhancement and management measures would help the proposed development meet the local and national planning policy. These may be incorporated into the landscape/habitat creation design proposals that would aim to result in conservation gain.
- 0.9 During the winter bird surveys observation of other ecological features were made. Brown Hare were observed, located on arable land south of the

A1303 between Madingley Rise and Coton village, and on the arable fields east of the M11 motorway.

1 INTRODUCTION

- 1.1 On behalf of Greater Cambridge Partnership, Cambridge Ecology Ltd was commissioned in November 2018, to carry out a winter bird survey on land associated with the Cambourne to Cambridge Better Public Transport Scheme. The survey comprised the section between the eastern entrance to Bourn Airfield and Grange Road, Cambridge.
- 1.2 This survey was required to investigate the potential for wintering birds (especially wintering waders, i.e. Lapwing and Golden Plover; and wintering thrushes, i.e. Redwing and Fieldfare), to be present along the proposed route of the scheme and which could therefore potentially be affected by the development. The presence of overwintering birds are important to identify as these may suffer the greatest impacts from loss of habitat as a result of development. Changes in wintering plover and thrush survival in the survey area are likely to impact the breeding population numbers (BTO 2015).
- 1.3 If present, wintering birds would need to be considered further in relation to maintaining their population integrity and meet planning policy guidance and potentially compliance with wildlife legislation.
- 1.4 For clarity in this report the development site (or 'site') refers to land within the survey area including the red line boundary of the Cambourne to Cambridge Better Public Transport Scheme.

Aims and objectives

- 1.5 The objectives of the 2018-19 winter bird survey were to provide information on the:
- current assemblage and abundance of wintering birds in the survey area;
 - presence of wintering waders, i.e. Lapwing and Golden Plover; and wintering thrushes, i.e. Redwing and Fieldfare;
 - conservation importance of the survey area to the wintering birds found;
 - distribution of wintering birds of conservation concern found in the survey area;
 - use of the survey area by wintering birds.
- 1.6 The survey would also add to the information gathered from the winter bird survey carried out during the 2017-18 winter (Cambridge Ecology 2018).

Survey area

- 1.7 The site was located between Grange Road, Cambridge at the eastern end and the Bourn Airfield entrance off the A1303 at the western end (Figure 1.1). To the north the site was bordered by the A428 dual carriageway and to the south mainly by arable land. The site also included potential travel hub sites; adjacent to Scotland Farm and near the water tower adjacent to Madingley Mulch. The total area within the red-line boundary of the development site covers an area of approximately 380 hectares (ha).

- 1.8 The survey area comprised the red line boundary of the Cambourne to Cambridge Better Public Transport Scheme; plus, where possible, a buffer zone up to 250m beyond the red line boundary.
- 1.9 This survey area was chosen because the scheme would be confined to an area within the red line boundary, therefore already providing a buffer zone around the potential route. It was also recognised that the scheme was not a major road and therefore the effects on biodiversity would not be comparable to a road scheme as traffic flows, noise, light and visual disturbance and habitat loss would likely be less therefore less detrimental to biodiversity.
- 1.10 The survey excluded areas where access was not possible and areas beyond significant features such as major roads (e.g. A428), commercial, academic and residential developments. These features were considered to likely present barriers to movement by wildlife and beyond which the proposed scheme would be unlikely to exert an adverse effect. These features were already likely to influence the movement and behaviour of wildlife and beyond which the scheme would be unlikely to exert an adverse effect.
- 1.11 Within the survey area:
- the dominant habitat was arable land,
 - other habitats included amenity and improved grassland, tall ruderal, dense and scattered scrub, ephemeral/short perennial,
 - habitats of conservation value included, semi-improved grassland, broad-leaved lowland deciduous woodland (including plantation woodland), traditional orchards, hedgerows, wet and dry ditches other waterbodies (such as ponds and a lake) and Bin Brook.

Relevant Legislation and Planning Policy

- 1.12 Relevant legislation and policies relating to the remit of this survey are listed below:
- Natural Environment and Rural Communities (NERC) Act 2006 (as amended);
 - The Wildlife and Countryside Act 1981 (as amended);
 - National Planning Policy Framework 2012 (as amended);
 - The UK and Cambridgeshire Biodiversity Action Plan.
 - South Cambridgeshire District Council adopted Local Plans

2 METHODS

- 2.1 The English names, scientific names and taxonomic order of birds detailed in this report follows the British List (BOU, 2014).

Registration Mapping

- 2.2 The survey methodology involved standard territory (registration) mapping techniques as detailed in Bibby et al. (2000). Registrations of birds, using standard British Trust for Ornithology (BTO) two letter species codes, were placed onto an appropriate field map (scale 1:5000). Specific codes were also used to record the birds' behaviour e.g. feeding, roosting.
- 2.3 The 2017-18 winter bird survey recorded all bird species encountered and was considered to provide a representative indication of the winter bird assemblage, abundance and distribution. It was recognised that cropping regimes, which change annually, could influence the presence of one of the target species groups (i.e. wintering plovers). Therefore, the focus of this winter bird survey was primarily to detect wintering plovers. Other wintering birds such as thrushes, owls and species listed on one or more conservation criteria (see para 2.10 below) were also recorded, but species of no conservation concern, such as Wood Pigeon were noted, but not recorded in detail.
- 2.4 Two diurnal surveys were made each month, plus a single nocturnal survey was carried out each month to detect wintering plovers (namely Lapwing and Golden Plover) and owls.
- 2.5 The survey area was walked at a slow pace in appropriately fine weather in order to locate and identify all individual birds observed. All field boundaries and suitable habitats were walked. Diurnal visits were undertaken generally between 08:30 – 1600. The whole survey area was covered during each visit, using suitable optical equipment (10x magnification binoculars and 25-60x zoom telescope) to observe bird behaviour. Survey routes were alternated on each visit, to ensure that all areas were covered at various times of day across the duration of the survey.
- 2.6 The nocturnal visits were undertaken generally between 1800 and 2300 over a single evening, the focus for these surveys were the arable fields, where wintering plovers and owls may feed and/or roost at night. To detect birds at night, the surveyor used a thermal camera (Flir Scout BTS Series Thermal Night Vision Camera) to scan the fields and listened for the characteristic calls to detect the presence of wintering plovers and search for owls.
- 2.7 Surveys were undertaken between November 2018 and March 2019, with 15 survey visits taking place. The survey dates were as follows:
- Visit 1-3: 22nd, 27th and 30th November 2018
 - Visit 4-6: 7th, 12th and 20th December 2018
 - Visit 7-9: 8th, 14th and 21st January 2019
 - Visit 10-12: 5th, 12th and 19th February 2019
 - Visit 13-15: 4th, 12th and 20th March 2018

2.8 The weather conditions encountered during the surveys are detailed in Table 2.1

Table 2.1 Weather conditions during the 2018-2019 winter bird survey visits

Survey Visit	Diurnal/Nocturnal Survey	Date	Wind conditions			Temperature (Ave. °C)	Rain (y/n)
			Direction	Maximum Gust (mph)	Speed (Ave. mph)		
1	Diurnal	22/11/18	N	2	1	2	Occasional Light Drizzle
2	Nocturnal	27/11/18	SSE	31	20	2	Light Rain
3	Diurnal	30/11/18	SW	21	16	11	No
4	Diurnal	07/12/18	W	33	17	9	Overnight only, No
5	Nocturnal	12/12/18	ESE	17	6	4	No
6	Diurnal	20/12/18	SW	23	12	9	No
7	Diurnal	08/01/19	NW	22	11	8	No
8	Nocturnal	14/01/19	W	17	7	7	No
9	Diurnal	21/01/19	SW	6	3	5	No
10	Diurnal	05/02/19	SSW	18	9	7	No
11	Nocturnal	12/02/19	SW	21	6	8	No
12	Diurnal	19/02/19	WSW	16	11	10	No
13	Diurnal	04/03/19	W	32	19	10	No
14	Nocturnal	12/03/19	WSW	34	21	4	No
15	Diurnal	20/03/19	SW	14	11	12	No

N.B. weather data obtained from: <http://www.metoffice.gov.uk> and <http://www.accuweather.com>

2.9 Observations of birds made in the field were recorded directly on to handheld computers. These devices displayed Ordnance Survey (OS) base maps and the location of the surveyor - using Global Positioning Systems (GPS) technology. This aided in the accurate recording of the birds' location. Upon completion of the surveys the data were then downloaded and used to create master maps.

2.10 The conservation status of the species recorded as wintering were compared against the following criteria:

- Annex 1 of the EU Birds Directive (Directive 79/409/EEC);
- Schedule 1 of the Wildlife and Countryside Act 1981, (as amended). It is recognised that Schedule 1 species refers to breeding birds. However, the presence of Schedule 1 species wintering in the survey area would help indicate the conservation importance of the survey area;
- Species of Principal Importance Natural Environment & Rural Communities Act (2006), (as amended), Section 41;
- UK Biodiversity Action Plan (UK BAP) priority species (Anon, 2007), which forms the basis of Section 41 of the NERC Act 2006;
- Cambridge Biodiversity Action Plan Priority Species;
- Birds of Conservation Concern (BoCC) Red/Amber List (Hayhow et al., 2017).

2.11 The master maps were used for those species that are covered by one or more of the above criteria, to create a species of conservation concern distribution map.

Arable Land Usage

- 2.12 A record of the arable field usage was made, as it was recognised that this could influence the winter bird distribution and assemblage.

Survey Constraints

- 2.13 The surveys were carried out in suitable weather conditions and at a time of day/night when birds would likely be active and detectable by surveyors. The results were considered to provide a representative indication of the abundance, assemblage and distribution of winter birds within the accessible parts of the survey areas at the time of the survey visits.
- 2.14 It was recognised that there were two specific constraints associated with the survey data. These are as follows:
- The survey commenced at the end of November; therefore, the presence, abundance, assemblage and distribution of wintering birds before this time in the early part of the winter could not be determined.
 - Access to commercial and residential areas as well certain habitats such as Coton Orchard was not possible. Therefore, the status of wintering birds in these areas could not be determined.
- 2.15 These limitations should be noted and considered when using these data for any assessment of effects by the scheme proposals on wintering birds.

3 RESULTS

3.1 The English and Latin names of all the species recorded during the survey detailed in this report can be found in Appendix A.

3.2 The arable field usage varied and comprised; cereal, and pea/bean crops. There were also some ploughed fields and unploughed fallow fields. To the east of the M11 motorway there were two fields sown with a game cover mix. Figure 3.1 illustrates the arable field usage within the survey area.

Wintering birds between the eastern entrance to Bourn Airfield and Grange Road, Cambridge

3.3 During the winter bird survey, a total of 62 bird species were recorded between November 2018 and March 2019. Of these 31 species are considered to be of particular conservation importance, based on the criteria set out in para 2.10.

3.4 Three species (Little Egret, Golden Plover and Kingfisher) are listed as Annex 1 species under the EU Birds Directive.

3.5 Four species (Barn Owl, Kingfisher, Fieldfare and Redwing) are listed as Schedule 1 species under the Wildlife & Countryside Act 1981 (as amended).

3.6 Twelve species (Grey Partridge, Marsh Tit, Skylark, Starling, Song Thrush, House Sparrow, Dunnock, Bullfinch, Linnet, Corn Bunting, Yellowhammer and Reed Bunting) are listed in Section 41 as Species of Principal Importance under the NERC Act 2006.

3.7 Twelve species (Grey Partridge, Marsh Tit, Skylark, Starling, Song Thrush, House Sparrow, Dunnock, Bullfinch, Linnet, Corn Bunting, Yellowhammer and Reed Bunting) are also UKBAP priority species. Two of these species (Skylark and Song Thrush) are also local Cambridgeshire BAP species.

3.8 Fourteen species (Grey Partridge, Woodcock, Marsh Tit, Skylark, Starling, Fieldfare, Redwing, Song Thrush, Mistle Thrush, House Sparrow, Grey Wagtail, Linnet, Corn Bunting and Yellowhammer) are Birds of Conservation Concern (BoCC) red listed.

3.9 Fourteen species (Mute Swan, Mallard, Teal, Snipe, Black-headed Gull, Common Gull, Lesser Black-backed Gull, Stock Dove, Kingfisher, Kestrel, Dunnock, Meadow Pipit, Bullfinch and Reed Bunting) are BoCC amber listed.

3.10 All species recorded during the winter bird surveys, their usage of the survey area, together with their conservation status are detailed in Table 3.1.

Table 3.1: Bird species, their behaviour and conservation status recorded during the 2018-2019 winter bird surveys between Bourn Airfield and Grange Road, Cambridge.

Species	Behaviour	Conservation Status
Mute Swan	Feeding, Roosting	Amber
Mallard	Feeding, Roosting	Amber

Species	Behaviour	Conservation Status
Teal	Feeding, Roosting	Amber
Tufted Duck	Feeding, Roosting	
Red-legged Partridge	Feeding	
Grey Partridge	Feeding	UKBAP, SPI, Red
Pheasant	Feeding	
Little Grebe	Feeding	
Grey Heron	Feeding	
Little Egret	Feeding	Annex 1
Sparrowhawk	Feeding	
Buzzard	Feeding	
Moorhen	Feeding, Roosting	
Coot	Feeding, Roosting	
Golden Plover	Roosting	Annex 1
Woodcock	Feeding, Roosting	Red
Snipe	Feeding, Roosting	Amber
Black-headed Gull	Feeding	Amber
Common Gull	Feeding	Amber
Lesser Black-backed Gull	Feeding	Amber
Stock Dove	Feeding	Amber
Woodpigeon	Feeding	
Collared Dove	Feeding	
Barn Owl	Feeding	WCA 1
Kingfisher	Feeding	Annex 1, WCA 1, Amber
Great Spotted Woodpecker	Feeding	
Green Woodpecker	Feeding	
Kestrel	Feeding	Amber
Jay	Feeding	
Magpie	Feeding	
Jackdaw	Feeding	
Rook	Feeding	
Carrion Crow	Feeding	
Coal Tit	Feeding	
Marsh Tit	Feeding	UKBAP, SPI, Red
Blue Tit	Feeding	
Great Tit	Feeding	
Skylark	Feeding	UKBAP, SPI, LBAP, Red
Long-tailed Tit	Feeding	
Goldcrest	Feeding	
Wren	Feeding	
Nuthatch	Feeding	
Starling	Feeding	UKBAP, SPI, Red
Blackbird	Feeding	
Fieldfare	Feeding	WCA 1, Red
Redwing	Feeding	WCA 1, Red
Song Thrush	Feeding	UKBAP, LBAP, SPI, Red
Mistle Thrush	Feeding	Red
Robin	Feeding	
House Sparrow	Feeding	UKBAP, SPI, Red

Species	Behaviour	Conservation Status
Dunnock	Feeding	UKBAP, SPI, Amber
Grey Wagtail	Feeding	Red
Pied Wagtail	Feeding	
Meadow Pipit	Feeding	Amber
Chaffinch	Feeding	
Bullfinch	Feeding	UKBAP, SPI, Amber
Greenfinch	Feeding	
Linnets	Feeding	UKBAP, SPI, Red
Goldfinch	Feeding	
Corn Bunting	Feeding	UKBAP, SPI, Red
Yellowhammer	Feeding	UKBAP, SPI, Red
Reed Bunting	Feeding	UKBAP, SPI, Amber

Annex 1 - Annex 1 of the Birds Directive; **WCA1** - Wildlife and Countryside Act 1981 (as amended) Schedule 1; **UKBAP** - UK Biodiversity Action Plan species; **SPI** - Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006; **LBAP** - Cambridgeshire Biodiversity Action Plan Species; **Red** - Birds of Conservation Concern Red list; **Amber** - Birds of Conservation Concern Amber list;

3.11 Table 3.2 details the number of each species recorded during each diurnal survey visit.

3.12 Figures 3.4 to 3.12 provides an illustration of the distribution of the 22 species, listed on at least one conservation criteria (Birds of Conservation Concern Red List and higher) conservation importance.

Table 3.2: Total number of birds recorded each visit during the 2018-2019 winter bird surveys between the eastern entrance to Bourn Airfield and Grange Road, Cambridge.

Species	Visit 1 Day	Visit 3 Day	Visit 4 Day	Visit 6 Day	Visit 7 Day	Visit 9 Day	Visit 10 Day	Visit 11 Noc.	Visit 12 Day	Visit 13 Day	Visit 15 Day
Mute Swan				2	2		2			2	
Mallard				10	12	9	13		6	5	6
Teal			4								
Tufted Duck					3						
Red-legged Partridge	√	√	√	4	√	4	2		2	2	2
Grey Partridge							4		6	6	
Pheasant	√	√	√	6	√	6	2		√	√	√
Little Grebe				4	1		4		2	2	
Grey Heron							2				
Little Egret							1				
Sparrowhawk				1	1						
Buzzard				2	1	5	1		4		4
Moorhen	√	√	√	2	8	6	2		3	2	4
Coot		3	3	6	4	4	7		5	2	2
Golden Plover				4			19	25		1	
Woodcock		2		4	2	4	3		3		
Snipe		4									
Black-headed Gull							2			5	
Common Gull										6	
Lesser Black-backed Gull									2		
Stock Dove				2			3				10
Woodpigeon	√	√	√	29	25	16	41		3	2	9

Species	Visit 1 Day	Visit 3 Day	Visit 4 Day	Visit 6 Day	Visit 7 Day	Visit 9 Day	Visit 10 Day	Visit 11 Noc.	Visit 12 Day	Visit 13 Day	Visit 15 Day
Collared Dove	√	√	√	3	4	4	√		3	4	√
Barn Owl							1	1	1		
Kingfisher			1	1	1		1		1	1	1
Great Spotted Woodpecker					2	4			2	2	
Green Woodpecker	1			2	1	4	1		2	2	1
Kestrel					1	1	2		1	2	
Jay				2		2	3		2	2	
Magpie	√	√	√	7	2	10	8		2	2	2
Jackdaw	√	√	√	6	7	19	√		√	2	√
Rook	√	√	√	5	√	7	√		√	3	√
Carrion Crow	√	√	√	13	2	11	10		3	1	3
Coal Tit				2		4	2				2
Marsh Tit									2		
Blue Tit	√	√	√	6	7	26	35		1	1	4
Great Tit	√	√	√	6	2	11	26		3	√	7
Skylark			6	6	1	8	6		27	9	27
Long-tailed Tit				6	4	6	3		1		11
Goldcrest					7	3	9		2		
Wren	√	√	√	3	√	8	√		√	2	4
Nuthatch						4	3		3	3	
Starling				5	6	24	36		12		
Blackbird	√	√	√	4	4	11	2		1	2	2
Fieldfare	64	41	79	29	42	167	79		21		
Redwing	55	39	116	53	51	125	90		40	8	
Song Thrush	12		7	10	12	20	16		4	14	9
Mistle Thrush				2	2	2	2		4	3	2
Robin	√	√	√	5	1	8	3		1	2	7
House Sparrow										5	
Dunnock				10	17	34	10		5	23	20
Grey Wagtail				1							
Pied Wagtail						3	2		2	2	
Meadow Pipit		20	11	4	9	5	4			3	
Chaffinch	24	16	21	14	6	17	5		1	2	4
Bullfinch	6		3	13	10	5	6		7	4	6
Greenfinch	14	25	4	2	4	9	3			4	2
Linnet		9	10	17	9	14	5			5	
Goldfinch		23	32	25	6	39	15		6	8	2
Corn Bunting	48	4									
Yellowhammer	40	24	17	7	7	8					1
Reed Bunting		19	8	12	8	9	3			5	2

√ = this species was present during the survey but no counts were made as the species was not a target species

Nocturnal Wintering birds between the eastern entrance to Bourn Airfield and Grange Road, Cambridge

3.13 Nocturnal survey visits of the area between Grange Road, Cambridge and Bourn Airfield were carried out between November 2018 and March 2019 during visits 2, 5, 8, 11 and 14.

- 3.14 Only during one nocturnal survey visit (dated 12/02/2019) were wintering waders (namely Golden Plover) and/or owls detected.
- 3.15 Two flocks of Golden Plover were detected during visit 11. One flock of up to 10 birds was located in arable fields east of the M11 motorway, south of the West Cambridge site. The second flock of up to 15 birds was located in arable fields south of the Chrome Lea Business Park south of the A1303, west of Coton village
- 3.16 A Barn Owl was detected at the eastern end of the survey area in grassland near to Bin Brook during visit 11. This was in the same area where a Barn Owl had been observed during two daytime surveys (dated 05/02/19 and 19/02/19).

Other Observations of Ecological Receptors

- 3.17 During the winter bird surveys, observation of other ecological receptors were also noted.
- 3.18 Brown Hare, a UK BAP species, was observed during three of the survey visits. These were mainly observed on arable land south of the A1303 between Madingley Rise and Coton village. Brown Hare were also seen on the arable land to the east of the M11 motorway. The peak count of 33 Brown Hare was made. Observations of their behaviour indicated that they were using the survey area for feeding, sheltering and courting (Cambridge Ecology 2019b).

4 EVALUATION

Species account.

- 4.1 The following accounts of bird species relate to those considered as wintering, within the survey area that are listed on: Annex 1 of the EC Birds Directive, Schedule 1 of the Wildlife & Countryside Act 1981, Section 41 - Species of Principal Importance of the NERC Act 2006, UK and Local BAP Priority Species and the Birds of Conservation Concern Red List. These species are, therefore, regarded as of high conservation importance either nationally or locally.
- 4.2 Refer to Figures 3.4 to 3.12 for a visual indication of the distribution of the individual of high conservation importance.

Grey Partridge

- 4.3 Grey Partridge is listed as a UKBAP, Species of Principal Importance and cited under the Birds of Conservation Concern as a red list species). Grey Partridge were seen on three survey visits (10, 12 and 13). These birds were seen in small flocks of up to six birds and as pairs. They were present in arable field margins to the south of the A1303 between Coton village and Madingley Rise and to the east of the M11 motorway, south of the West Cambridge site. Their behaviour indicated that they were searching for food.

Little Egret

- 4.4 Little Egret is listed as an Annex 1 in the European Birds Directive. One Little Egret was seen on one occasion during survey visit 10. This bird was seen to be searching for food along Bin Brook at the eastern end of the survey area.

Golden Plover

- 4.5 Golden Plover is listed as an Annex 1 in the European Birds Directive. Golden Plover were recorded on four survey visits (6, 10, 11 and 13), including one of the nocturnal surveys (11). During the diurnal survey, a peak number of 19 birds were recorded. During the nocturnal survey, a peak number of up to 15 birds in one flock and 10 birds in a second flock. When present during the surveys, Golden Plover were seen resting in arable fields east of the M11 motorway, south of the West Cambridge site, and in arable fields south of the Chrome Lea Business Park south of the A1303, west of Coton village (see Figure 3.10 to 3.12).

Woodcock

- 4.6 Woodcock is listed under the Birds of Conservation Concern as a red list species. Woodcock were seen during six of the survey visits (3, 6, 7, 9, 10, and 12), with a peak count of 4 birds on visit 6 and 9.
- 4.7 As seen during the winter 2017-18 survey, these birds were located in the woodland area north of the covered reservoir at the top of Madingley Rise,

Madingley Wood SSSI, and the dense scrub area to the south and east of Coton Orchard. The birds appeared to be using the survey area for feeding and roosting.

Barn Owl

- 4.8 Barn Owl is listed as a Schedule 1 species in the Wildlife & Countryside Act 1981 (as amended). It is recognised that Schedule 1 species refers to breeding birds. However, the presence of Schedule 1 species wintering in the survey area help indicate the conservation importance of the survey area
- 4.9 A single Barn Owl was seen during three of the survey visits (10,11,and 12), including one of the nocturnal surveys (11).
- 4.10 The bird was observed hunting over the grassland adjacent to Bin Brook at the eastern end of the survey area (see Figure 3.10). The bird was using the survey area for feeding.

Kingfisher

- 4.11 Kingfisher is listed as an Annex 1 in the European Birds Directive and Schedule 1 species in the Wildlife & Countryside Act 1981 (as amended). It is recognised that Schedule 1 species refers to breeding birds. However, the presence of Schedule 1 species wintering in the survey area help indicate the conservation importance of the survey area.
- 4.12 One Kingfisher was seen during seven of the survey visits (4, 6, 7, 10, 12, 13 and 15).
- 4.13 The sighting of Kingfisher along Bin Brook either flying along the brook or perched on branches of bushes overhanging the watercourse. The birds appeared to be using this area for feeding.

Marsh Tit

- 4.14 Marsh Tit is listed as a UKBAP, Species of Principal Importance and cited under the Birds of Conservation Concern as a red list species. Two Marsh Tit were seen during one of the survey visits (12).
- 4.15 These birds were observed in Madingley Wood SSSI. The birds appeared to be using the survey area for feeding.

Skylark

- 4.16 Skylark is listed as a UKBAP, Local BAP, Species of Principal Importance and cited under the Birds of Conservation Concern as a red list species. Skylark were seen during eight of the survey visits (4, 6, 7, 9, 10, 12, 13 and 15). The peak count comprised 27 birds on visit 12 and 15.
- 4.17 Observations of Skylark were made across the entire survey area, principally in arable fields. However, most birds were located in the arable fields south of Madingley Rise to the west of the M11 motorway as well as

on the arable land east of the M11 motorway south of the West Cambridge site. The birds appeared to be using the survey area for feeding and roosting.

Starling

- 4.18 Starling is listed as a UKBAP, Species of Principal Importance and cited under the Birds of Conservation Concern as a red list species. Starling were seen during five of the surveys visits (6, 7, 9, 10 and 12). The peak count comprised 36 birds on visit 10.
- 4.19 Starling were located from Madingley Rise eastward towards Cambridge, principally associated with grassy fields such as sports fields. The birds appeared to be using the survey area for feeding.

Fieldfare

- 4.20 Fieldfare is a Schedule 1 species in the Wildlife & Countryside Act 1981 (as amended) and cited under the Birds of Conservation Concern as a red list species. It is recognised that Schedule 1 species refers to breeding birds. However, the presence of Schedule 1 species wintering in the survey area help indicate the conservation importance of the survey area
- 4.21 Fieldfare were seen during eight of the surveys visits (1, 3, 4, 6, 7, 9, 10 and 12). The peak count comprised 167 birds on visit 9.
- 4.22 Observations of Fieldfare were made across the survey area between Madingley Rise and Grange Road, Cambridge, principally in the network of hedgerows around the arable fields. The birds appeared to be using the survey area for feeding and roosting.
- 4.23 During February, most hedgerows were devoid of berries, having been flailed in the autumn which removed berries that had been set the rest being eaten by wildlife including wintering thrushes. At this time a small number of dead Fieldfare were found around the bases of hedgerows, examination shows prominent breastbone suggesting they had died of starvation. This was unexpected, considering how mild the winter had been and the numerous hedgerows in the vicinity, including county wildlife hedgerows. Perhaps, a reduced supply of berries, due in part, to the hedgerow flailing in the previous autumn was a contributory factor.

Redwing

- 4.24 Redwing is a Schedule 1 species in the Wildlife & Countryside Act 1981 (as amended) and cited under the Birds of Conservation Concern as a red list species. It is recognised that Schedule 1 species refers to breeding birds. However, the presence of Schedule 1 species wintering in the survey area help indicate the conservation importance of the survey area

- 4.25 Redwing were seen during nine of the ten diurnal survey visits, only being absent during the last survey in March. The peak count comprised 125 birds on visit 9.
- 4.26 Observations of Redwing were made across the entire survey area, principally in the hedgerows around the arable fields and amongst the scrub and woodland habitat. The birds appeared to be using the survey area for feeding and roosting.
- 4.27 As seen with the fieldfare, during February, a small number of dead Redwing were found around the bases of hedgerows, examination shows prominent breastbone suggesting they had died of starvation.

Song Thrush

- 4.28 Song Thrush is listed as a UKBAP, Species of Principal Importance and cited under the Birds of Conservation Concern as a red list species. Song Thrush were seen during nine of the ten diurnal survey visits. The peak count comprised 20 birds on visit 9.
- 4.29 Observations of Song Thrush were made across the entire survey area, principally in the hedgerows around the arable fields and amongst the scrub and woodland habitat. The birds appeared to be using the survey area for feeding and roosting.

Mistle Thrush

- 4.30 Mistle Thrush is listed under the Birds of Conservation Concern as a red list species. Mistle Thrush were seen during seven of the survey visits (6, 7, 9, 10, 12, 13 and 15). The peak count was of 4 birds on visit 12.
- 4.31 Observations of Mistle Thrush were made across most of the survey area between Hardwick and Grange Road, Cambridge, principally in woodland, scrub and mature garden habitats. The birds appeared to be using the survey area for feeding and roosting.

House Sparrow

- 4.32 House Sparrow is listed as a UKBAP, Species of Principal Importance and cited under the Birds of Conservation Concern as a red list species. Five House Sparrow were seen during one of the survey visits (13).
- 4.33 These birds were associated with the residential area at the eastern end of Hardwick village. The birds appeared to be using the survey area for feeding.

Dunnock

- 4.34 Dunnock is listed as a UKBAP, Species of Principal Importance and cited under the Birds of Conservation Concern as an amber list species. Dunnock were seen during seven of the ten diurnal survey visits (6, 7, 9, 10, 12, 13 and 15). The peak count comprised 34 birds seen during visit 9.

- 4.35 Observations of Dunnock were made across the entire survey area, principally in hedgerows, scrub, woodland and mature garden habitat. The birds appeared to be using the survey area for feeding and roosting.

Grey Wagtail

- 4.36 Grey Wagtail is cited under the Birds of Conservation Concern as a red list species. One Grey Wagtail was seen during one of the 10 diurnal survey visits (6).
- 4.37 This bird was observed along Bin Brook and appeared to be using the survey area for feeding.

Bullfinch

- 4.38 Bullfinch is listed as a UKBAP, Species of Principal Importance and cited under the Birds of Conservation Concern as an amber list species. Bullfinch were seen during nine of the ten diurnal survey visits (1, 4, 6, 7, 9, 10, 12, 13 and 15). The peak count comprised 13 birds on visit 6.
- 4.39 Observations of Bullfinch were made in the survey area between Coton Orchard and Grange Road, Cambridge, and the area around the covered reservoir at Madingley Rise. The birds were principally associated with dense scrub habitat and appeared to be using the survey area for feeding.

Linnet

- 4.40 Linnet is listed as a UKBAP, Species of Principal Importance and cited under the Birds of Conservation Concern as a red list species. Linnet were seen during seven of the ten diurnal survey visits (3, 4, 6, 7, 9, 10 and 13). The peak count comprised 17 birds on visit 6.
- 4.41 Linnet were observed in the game cover crops located amongst the arable land in the survey area, to the east of the M11 motorway. Linnet were also present on arable field margins between Madingley Rise and Coton Village, areas around the balancing ponds adjacent and north of the A1303 and grassland associated with the covered reservoir adjacent to Madingley Mulch. The birds appeared to be using the survey area for feeding and roosting.

Corn Bunting

- 4.42 Corn Bunting is listed as a UKBAP, Species of Principal Importance and cited under the Birds of Conservation Concern as a red list species. Corn Bunting were seen during two of the ten diurnal survey visits (1 and 3). The peak count comprised 48 birds on visit 1.
- 4.43 The Corn Bunting were observed in the arable field margins on land to the south of Madingley Mulch south of the A1303. The birds appeared to be using the survey area for feeding.

Yellowhammer

- 4.44 Yellowhammer is listed as a UKBAP, Species of Principal Importance and cited under the Birds of Conservation Concern as a red list species. Yellowhammer were seen during seven of the ten diurnal survey visits (1, 3, 4, 6, 7, 9 and 15). The peak count comprised 40 birds on visit 1.
- 4.45 Observations of Yellowhammer were made principally in the game cover crops located amongst the arable land in the survey area to the east of the M11 motorway; and the arable field margins on land to the south of Madingley Mulch south of the A1303. The birds appeared to be using the survey area for feeding and roosting.

Reed Bunting

- 4.46 Reed Bunting is listed as a UKBAP, Species of Principal Importance and cited under the Birds of Conservation Concern as an amber list species. Reed Bunting were seen during eight of the ten diurnal survey visits (3, 4, 6, 7, 9, 10, 13 and 15). The peak count comprised 19 birds on visit 3.
- 4.47 Reed Bunting were primarily seen game cover crops located amongst the arable land in the survey area, to the east of the M11 motorway, as well as on arable field margins between Madingley Rise and Coton Village, areas around the balancing ponds adjacent and north of the A1303 and grassland associated with the covered reservoir adjacent to Madingley Mulch. The birds appeared to be using the survey area for feeding and roosting.

Combined Species Distribution

- 4.48 The combined distribution of those species listed on at least one conservation criteria (Birds of Conservation Concern Red List and higher) is showing in Figure 3.13.
- 4.49 The distribution map indicated that the key areas for bird species listed on at least one conservation criteria were as follows:
- The areas around the balancing ponds adjacent and north of the A1303.
 - The woodland and grassland associated with the covered reservoir adjacent to Madingley Mulch.
 - Madingley Wood SSSI.
 - The arable land between Madingley Rise and Coton Village.
 - The land around Coton Orchard and Coton Country Park.
 - The game cover crop on arable land and network of hedgerows to the east of the M11 motorway.
 - The mosaic of fields, scrub, network of hedgerows and grassland adjacent to Bin Brook.

5 KEY POINTS AND FINDINGS

- 5.1 Winter bird surveys were conducted between November 2018 and March 2019. Ten of the visits were made during the day, in addition five nocturnal visits were made. It is considered that the survey results provided a representative indication of the wintering bird assemblage and species population size present during the 2018-19 wintering season between the eastern entrance to Bourn Airfield and Grange Road, Cambridge.
- 5.2 The diurnal and nocturnal survey visits recorded a total of 62 bird species between Bourn Airfield and Grange Road, Cambridge. Of these 21 species were considered to be of particular conservation importance. These species comprised Grey Partridge, Little Egret, Barn Owl, Kingfisher, Golden Plover, Woodcock, Skylark, Marsh Tit, Grey Wagtail, Starling, Fieldfare, Redwing, Song Thrush, Mistle Thrush, House Sparrow, Dunnock, Bullfinch, Linnet, Corn Bunting, Yellowhammer and Reed Bunting; plus a further 10 species, Mute Swan, Teal, Mallard, Snipe, Black-headed Gull, Common Gull, Lesser-Black-backed Gull, Stock Dove, Kestrel and Meadow Pipit, which are Amber listed on the Birds of Conservation Concern.
- 5.3 During the surveys two of the main target species, namely Golden Plover and Barn Owl were seen and heard. Golden Plover flocks (including a flock of 19 birds) were recorded in arable fields south of the Cambridge West site (east of the M11 motorway); and in arable fields south of the Chrome Lea Business Park south of the A1303 (west of the M11 motorway). A Barn Owl was observed hunting over grassland at the eastern end of the survey area adjacent to Bin Brook.
- 5.4 Observations of bird behaviour during the survey visits indicated that the birds were using the survey area for feeding and roosting, and was therefore an important area for the survival of the species assemblage present.
- 5.5 The distribution of wintering birds recorded during the survey visits was not evenly spread across the survey area, but was focused on seven particular areas that provided the wintering birds with suitably safe feeding and roosting habitats.
- 5.6 The areas particularly important to the wintering bird assemblage included:
- The areas around the balancing ponds adjacent and north of the A1303;
 - the woodland and grassland associated with the covered reservoir adjacent to Madingley Mulch;
 - Madingley Wood SSSI;
 - the arable land between Madingley Rise and Coton Village;
 - the land around Coton Orchard and Coton Country Park; and
 - the game cover crop on arable land and network of hedgerows to the east of the M11 motorway.
 - the mosaic of fields, scrub, network of hedgerows and grassland adjacent to Bin Brook, including the various city and county wildlife sites.

- 5.7 Based on the findings of this survey without mitigation, the presence of the 31 species of bird considered to be of conservation importance could constitute a constraint to the scheme and therefore are of material consideration during the planning decision process.
- 5.8 The detail of the mitigation measures would depend on the actual route of the scheme. The mitigation measures would be necessary to enable the proposed development to proceed without causing a significant adverse effect on the local wintering bird population.
- 5.9 It is recognised that the winter bird survey recorded the presence of 31 species of conservation importance, some of which are listed as Species of Principal Importance under Section 41 of the Natural Environment & Rural Communities(NERC) Act 2006. Section 40 of the NERC Act 2006 places a “Biodiversity Duty” on local authorities to have regard to conserving biodiversity when setting policy or making decisions, including in the planning system. The Act states that conserving biodiversity includes restoring or enhancing a species population or habitat.
- 5.10 A number of enhancement measures would be possible to benefit wintering birds. The inclusion of habitat creation, enhancement and management measures would help the proposed development meet the local and national planning policy. The enhancement measures may be incorporated into the landscape/habitat creation design proposals that would aim to result in conservation gain.
- 5.11 During the winter bird surveys observation of other ecological features were made. Brown Hare were observed, located on arable land south of the A1303 between Madingley Rise and Coton village, and on the arable fields east of the M11 motorway.

6 BIBLIOGRAPHY

- Bacon, L., Cooper, A., Venebles, H. (2013). Cambridgeshire Bird Atlas 2007-2011. Published by the Cambridgeshire Bird Club
- Bibby, C.J. Burgess, N.D. Hill, D.A. & Mustoe, S.H. (2000). Bird Census Techniques. 2nd edition. Academic Press, London.
- British Ornithologists' Union (BOU) (2014). The British List: The Official List of Bird Species Recorded in Britain.
- British Trust for Ornithology (2015). Winter Thrush Survey. BTO Volunteer Magazine.
- Brown, A. and Grice. P. (2005). Birds in England. Natural England. T. & A.D. Poyser. London.
- Cambridge Ecology (2017a). Cambourne to Cambridge Better Public Transport: Protected Species Constraints Survey 2017. Final Report. P0608-R-001a.
- Cambridge Ecology (2017b). Cambourne to Cambridge Better Public Transport: Phase 1 Habitat Survey 2017. Final Report. P0608-R-003a.
- Cambridge Ecology (2018). Cambourne to Cambridge Better Public Transport: Winter Bird Survey 2017-18. Final Report P0608-R-006a
- Cambridge Ecology (2019a). Cambourne to Cambridge Better Public Transport: Barn Owl Survey 2018-19. Final Report P0608-R-017a
- Cambridge Ecology (2019b). Cambourne to Cambridge Better Public Transport: Brown Hare Survey 2018-19. Final Report P0608-R-018a
- Department for Communities and Local Government (2012) National Planning Policy Framework.
- Drewitt, A.L., Whitehead, S. and Cohen, S. (2015). Guidelines for the Selection of Biological SSSIs. Part 2: Detailed Guidelines for Habitats and Species Groups. Chapter 17 Birds. Joint Nature Conservation Committee, Peterborough.
- Eaton, M.A., Aebischer, N.J., Brown, A.F., Hearn, R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A. & Gregory, R.D. (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 108: 708–746.
- EU. (1979). On the Conservation of Wild Birds. Council Directive 79/409/EEC, Brussels.
- Fuller, R.J. (1980). A method for assessing the ornithological interest of sites for conservation. *Biological Conservation* 17:229-239.
- Gilbert, G., Gibbons D.W. & Evans J., (1998). Bird Monitoring Methods: A manual of techniques for key species. RSPB/BTO/JNCC/WWT/ITE/The Seabird Group RSPB/BTO, Sandy.
- Hayhow DB, Bond AL, Douse A, Eaton MA, Frost T, Grice PV, Hall C, Harris SJ, Havery S, Hearn RD, Noble DG, Oppel S, Williams J, Win I and Wotton S (2017). The state of the UK's birds 2016. The RSPB, BTO, WWT, DAERA, JNCC, NE, NRW and SNH, Sandy, Bedfordshire.

- HM Government (2006). Natural Environment and Rural Communities Act.
- HM Government (1981). Wildlife and Countryside Act.
- Marchant, J. (1983). Common Bird Census Instructions. BTO, Tring.
- Musgrove, A. J., Aebischer, N. J., Eaton, M. A., Hearn, R. D., Newson, S. E., Noble, D. G., Parsons, M., Risely, K., & Stroud, D. A. (2013). Population estimates of birds in Great Britain and the United Kingdom. *Brit. Birds* 106: 64–100.
- Robinson, R.A., Leech, D.I., Massimino, D., Woodward, I., Eglington, S.M., Marchant, J.H., Sullivan, M.J.P., Barimore, C., Dadam, D., Hammond, M.J., Harris, S.J., Noble, D.G., Walker, R.H. & Baillie, S.R. (2016) BirdTrends 2016: trends in numbers, breeding success and survival for UK breeding birds. Research Report 691. BTO, Thetford. www.bto.org/birdtrends
- Robinson, R.A. (2017). BirdFacts: profiles of birds occurring in Britain & Ireland (BTO Research Report 407). BTO, Thetford.

7 APPENDIX A

Table 7.1: Species recorded during the 2018-2019 winter bird survey.

Common Name	Scientific Name	Conservation Status
Mute Swan	<i>Cygnus olor</i>	Amber
Mallard	<i>Anas platyrhynchos</i>	Amber
Teal	<i>Anas crecca</i>	Amber
Tufted Duck	<i>Aythya fuligula</i>	
Red-legged Partridge	<i>Alectoris rufa</i>	
Grey Partridge	<i>Perdix perdix</i>	UKBAP, SPI, Red
Pheasant	<i>Phasianus colchicus</i>	
Little Grebe	<i>Tachybaptus ruficollis</i>	
Grey Heron	<i>Ardea cinerea</i>	
Little Egret	<i>Egretta garzetta</i>	Annex 1
Sparrowhawk	<i>Accipiter nisus</i>	
Buzzard	<i>Buteo buteo</i>	
Moorhen	<i>Gallinula chloropus</i>	
Coot	<i>Fulica atra</i>	
Golden Plover	<i>Pluvialis apricaria</i>	Annex 1
Woodcock	<i>Scolopax rusticola</i>	Red
Snipe	<i>Gallinago gallinago</i>	Amber
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Amber
Common Gull	<i>Larus canus</i>	Amber
Lesser Black-backed Gull	<i>Larus fuscus</i>	Amber
Stock Dove	<i>Columba oenas</i>	Amber
Woodpigeon	<i>Columba palumbus</i>	
Collared Dove	<i>Streptopelia decaocto</i>	
Barn Owl	<i>Tyto alba</i>	WCA 1
Kingfisher	<i>Alcedo atthis</i>	Annex 1, WCA 1, Amber
Great Spotted Woodpecker	<i>Dendrocopos major</i>	
Green Woodpecker	<i>Picus viridis</i>	
Kestrel	<i>Falco tinnunculus</i>	Amber
Jay	<i>Garrulus glandarius</i>	
Magpie	<i>Pica pica</i>	
Jackdaw	<i>Coloeus monedula</i>	
Rook	<i>Corvus frugilegus</i>	
Carrion Crow	<i>Corvus corone</i>	
Coal Tit	<i>Parus ater</i>	
Marsh Tit	<i>Poecile palustris</i>	UKBAP, SPI, Red
Blue Tit	<i>Cyanistes caeruleus</i>	
Great Tit	<i>Parus major</i>	
Skylark	<i>Alauda arvensis</i>	UKBAP, SPI, LBAP, Red
Long-tailed Tit	<i>Aegithalos caudatus</i>	
Goldcrest	<i>Regulus regulus</i>	
Wren	<i>Troglodytes troglodytes</i>	
Nuthatch	<i>Sitta europaea</i>	
Starling	<i>Sturnus vulgaris</i>	UKBAP, SPI, Red
Blackbird	<i>Turdus merula</i>	
Fieldfare	<i>Turdus pilaris</i>	WCA 1, Red
Redwing	<i>Turdus iliacus</i>	WCA 1, Red
Song Thrush	<i>Turdus philomelos</i>	UKBAP, LBAP, SPI, Red
Mistle Thrush	<i>Turdus viscivorus</i>	Red
Robin	<i>Erithacus rubecula</i>	
House Sparrow	<i>Passer domesticus</i>	UKBAP, SPI, Red
Duncock	<i>Prunella modularis</i>	UKBAP, SPI, Amber
Grey Wagtail	<i>Motacilla cinerea</i>	Red

Common Name	Scientific Name	Conservation Status
Pied Wagtail	<i>Motacilla alba</i>	
Meadow Pipit	<i>Anthus pratensis</i>	Amber
Chaffinch	<i>Fringilla coelebs</i>	
Bullfinch	<i>Pyrrhula pyrrhula</i>	UKBAP, SPI, Amber
Greenfinch	<i>Chloris chloris</i>	
Linnet	<i>Linaria cannabina</i>	UKBAP, SPI, Red
Goldfinch	<i>Carduelis carduelis</i>	
Corn Bunting	<i>Emberiza calandra</i>	UKBAP, SPI, Red
Yellowhammer	<i>Emberiza citrinella</i>	UKBAP, SPI, Red
Reed Bunting	<i>Emberiza schoeniclus</i>	UKBAP, SPI, Amber

8 FIGURES

Figure 1.1: Extent of Survey Area and Site Boundary

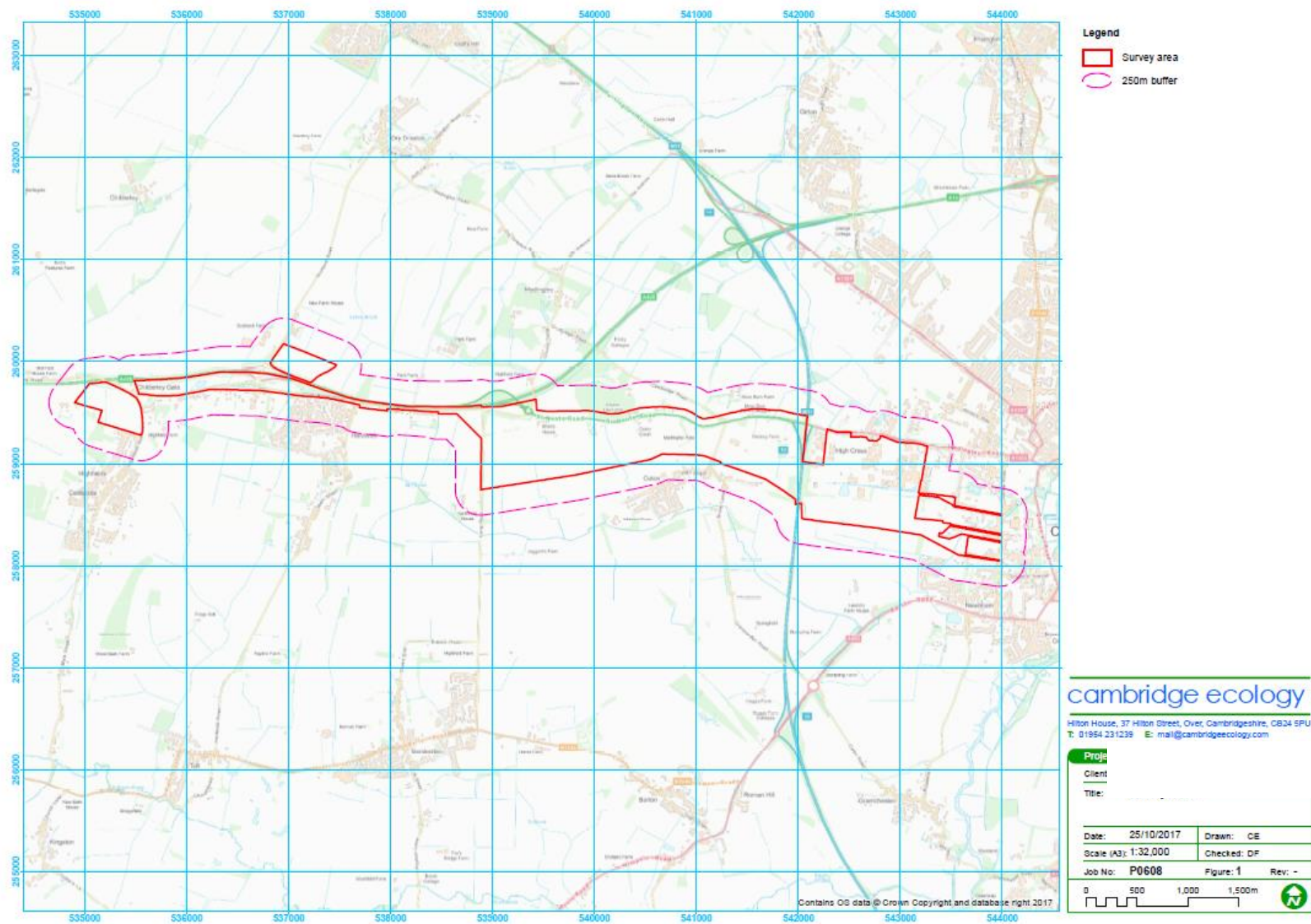


Figure 3.1: Indicative arable field usage in the eastern section of the survey area

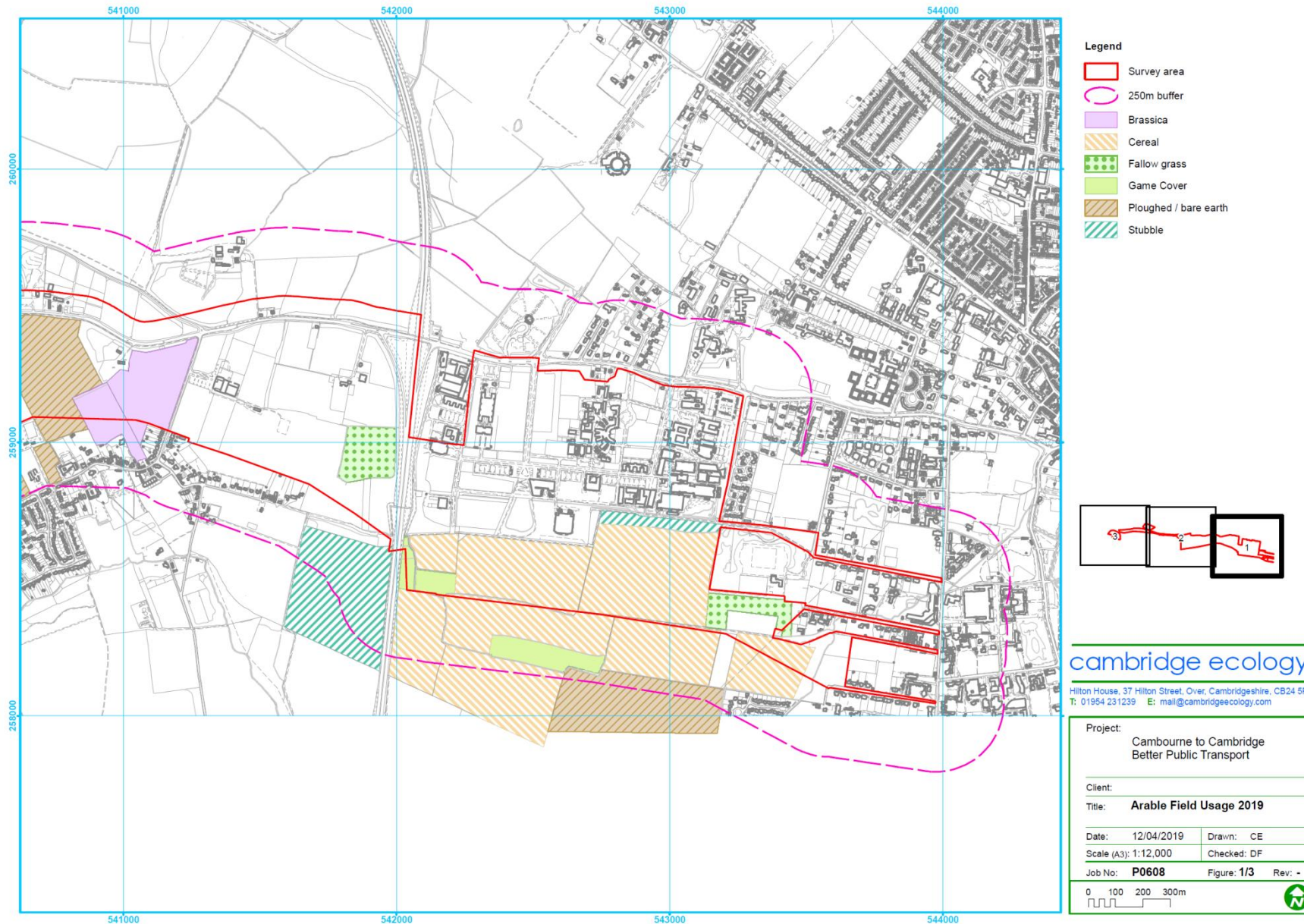


Figure 3.2: Indicative arable field usage in the central section of the survey area

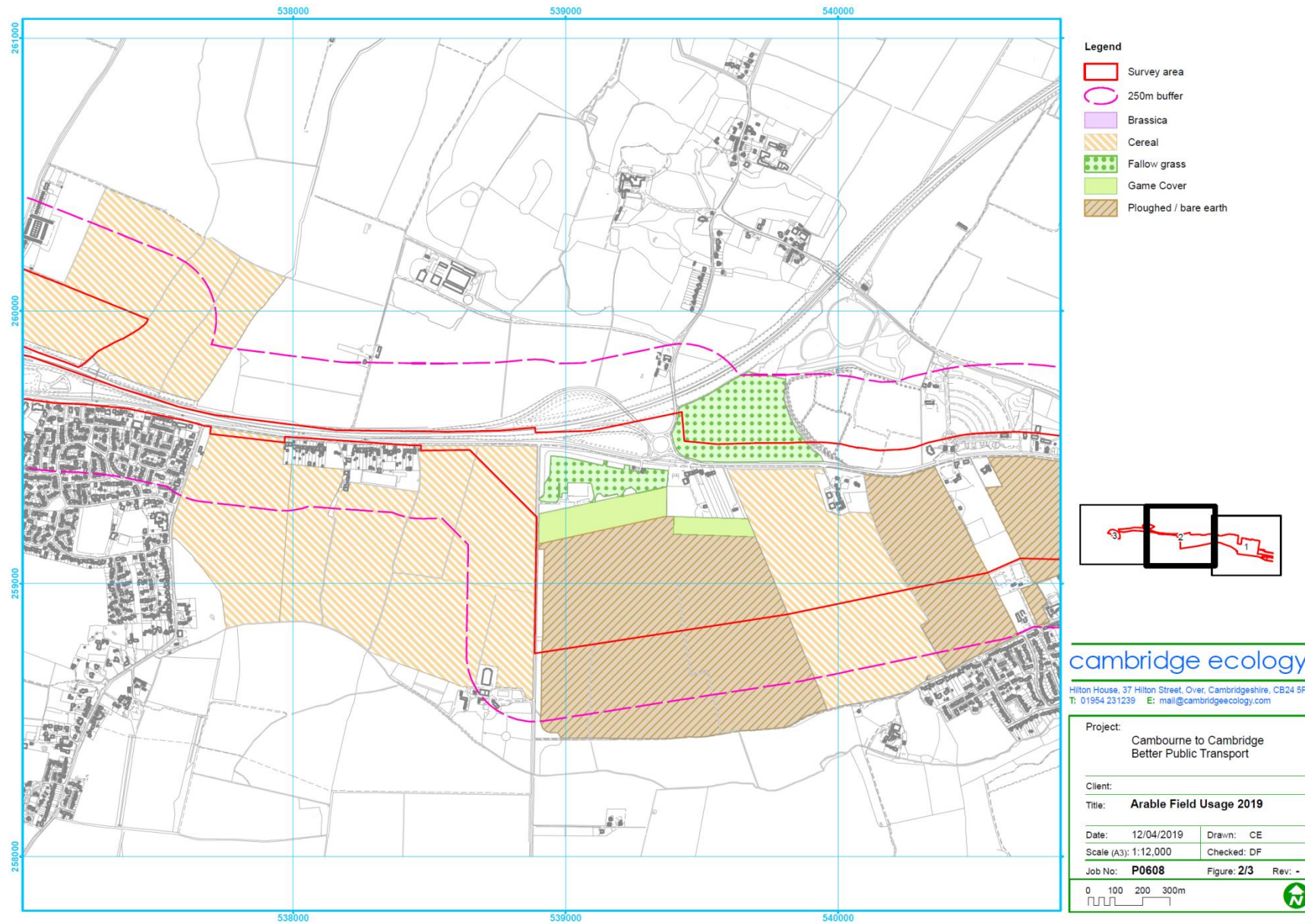


Figure 3.3: Indicative arable field usage in the western section of the survey area

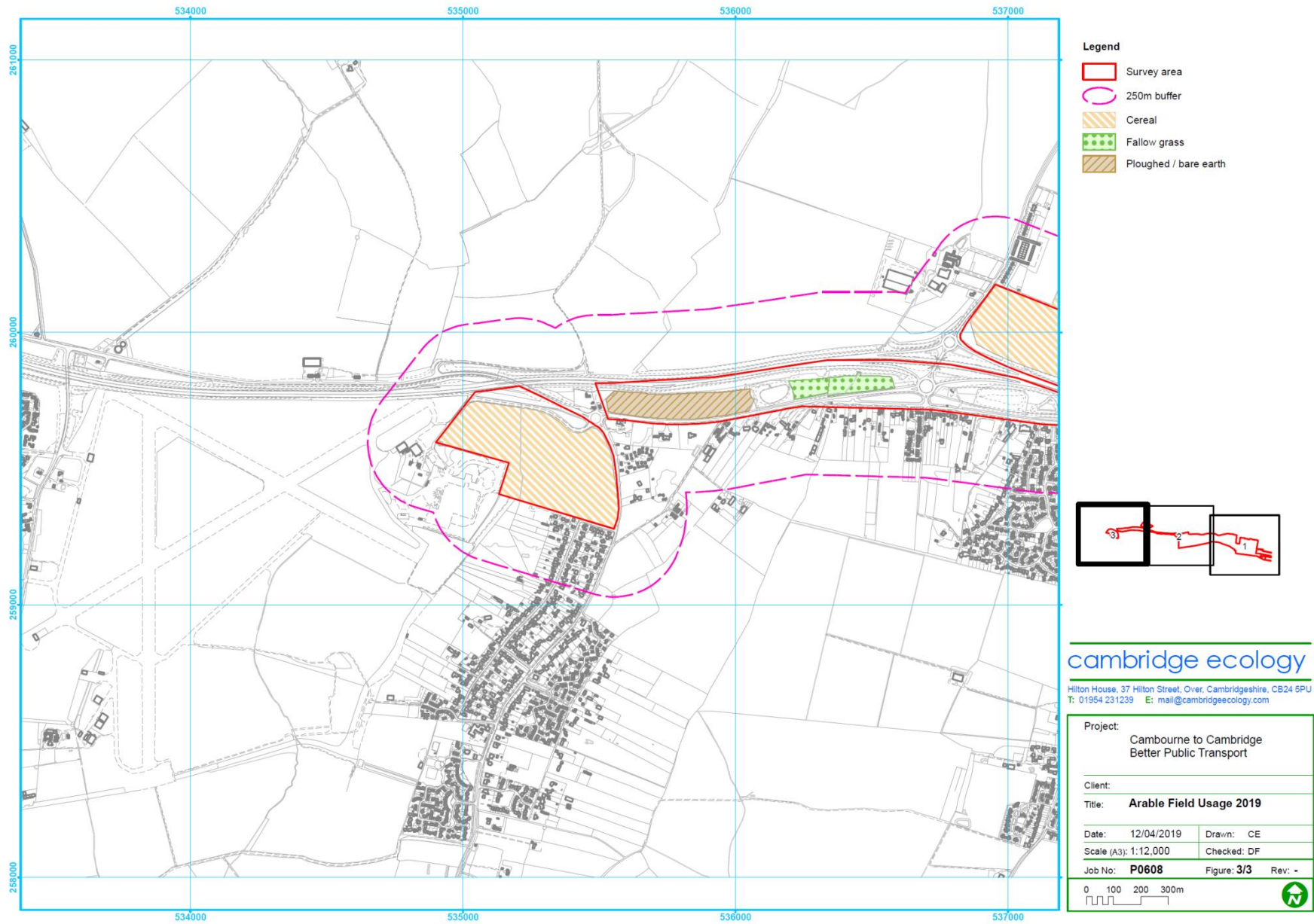


Figure 3.4: Indicative distribution of the bird species of conservation importance during winter 2018-19 (Sheet 1 of 6).

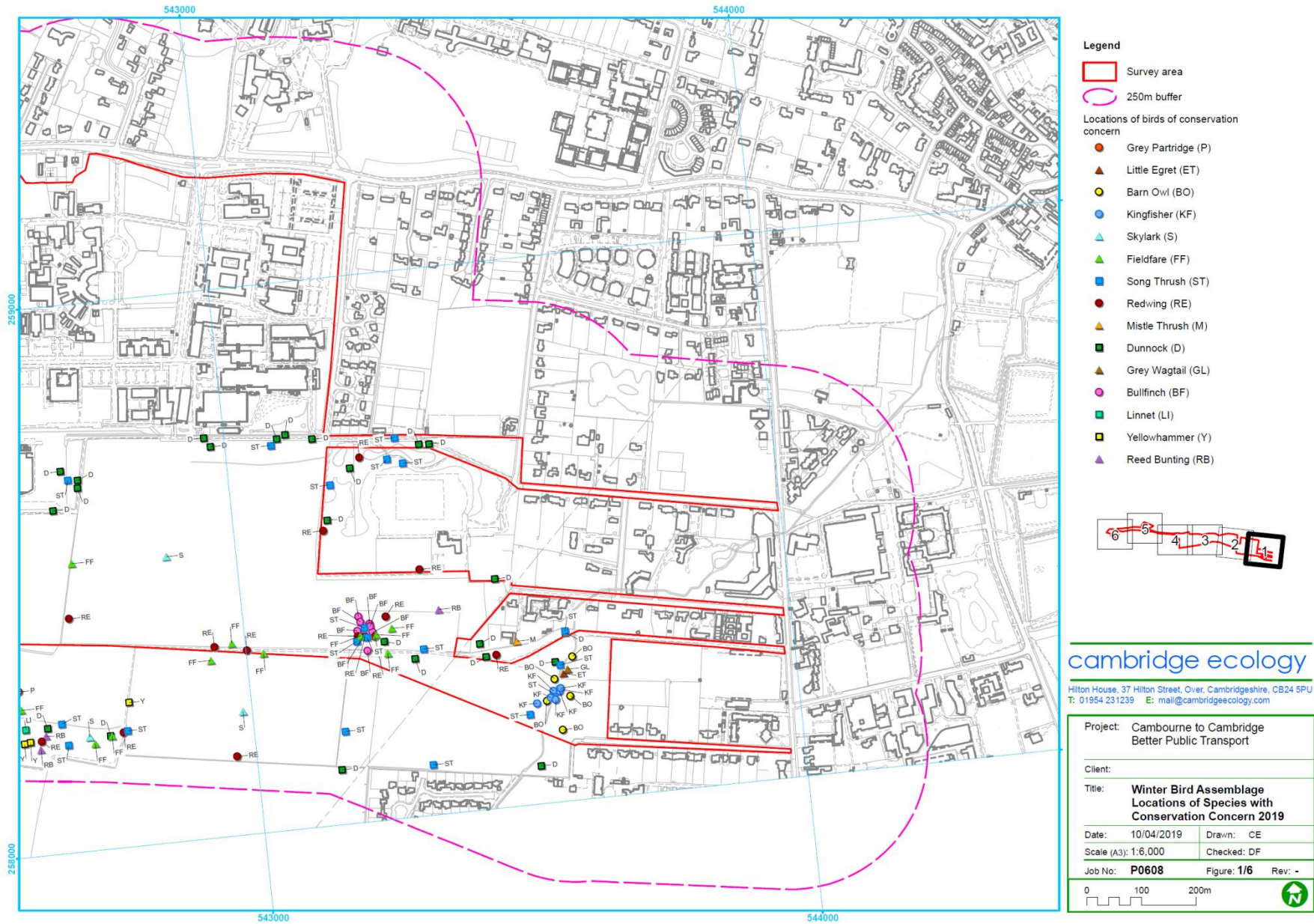


Figure 3.5: Indicative distribution of the bird species of conservation importance during winter 2018-19 (Sheet 2 of 6).

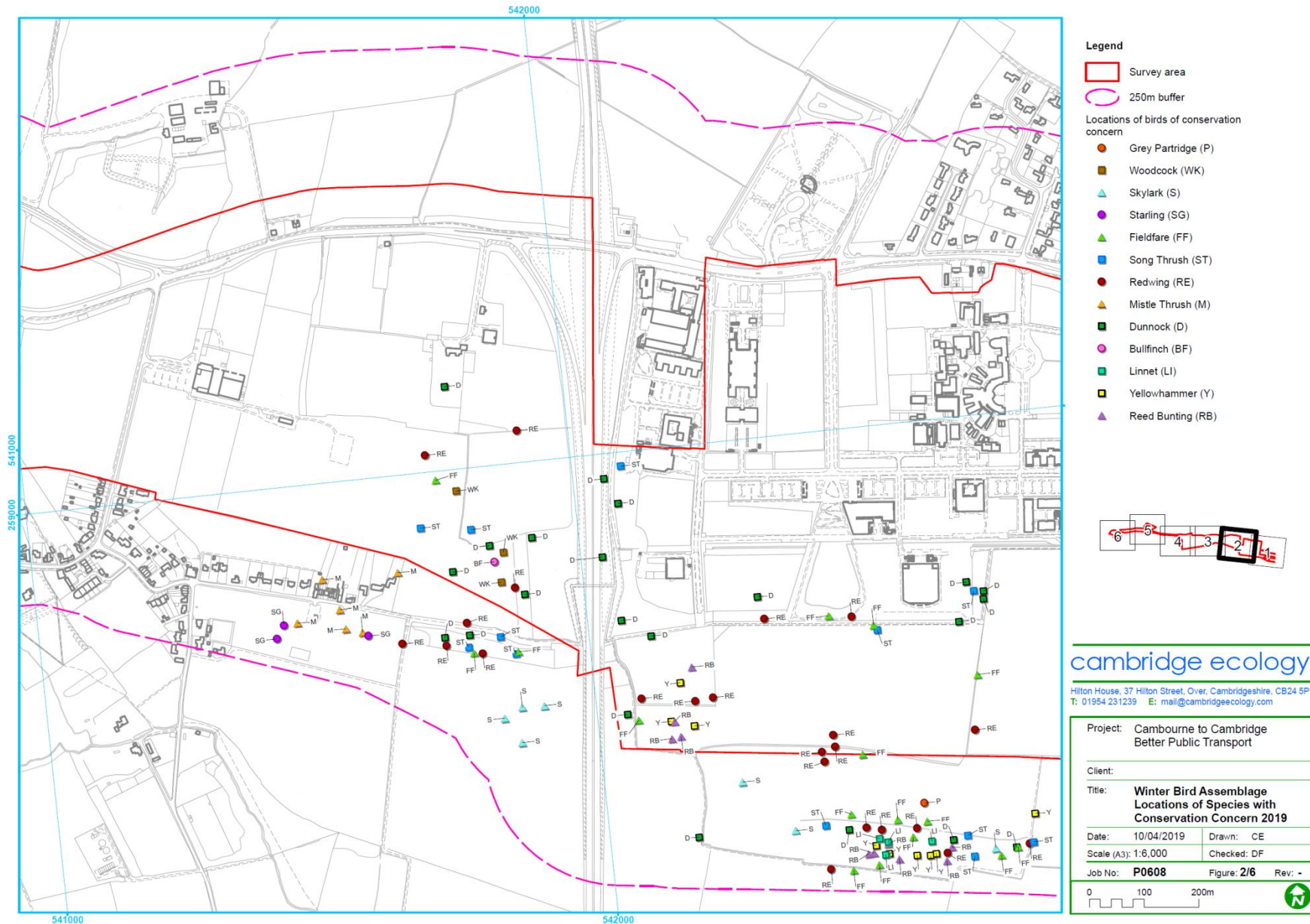


Figure 3.6: Indicative distribution of the bird species of conservation importance during winter 2018-19 (Sheet 3 of 6)

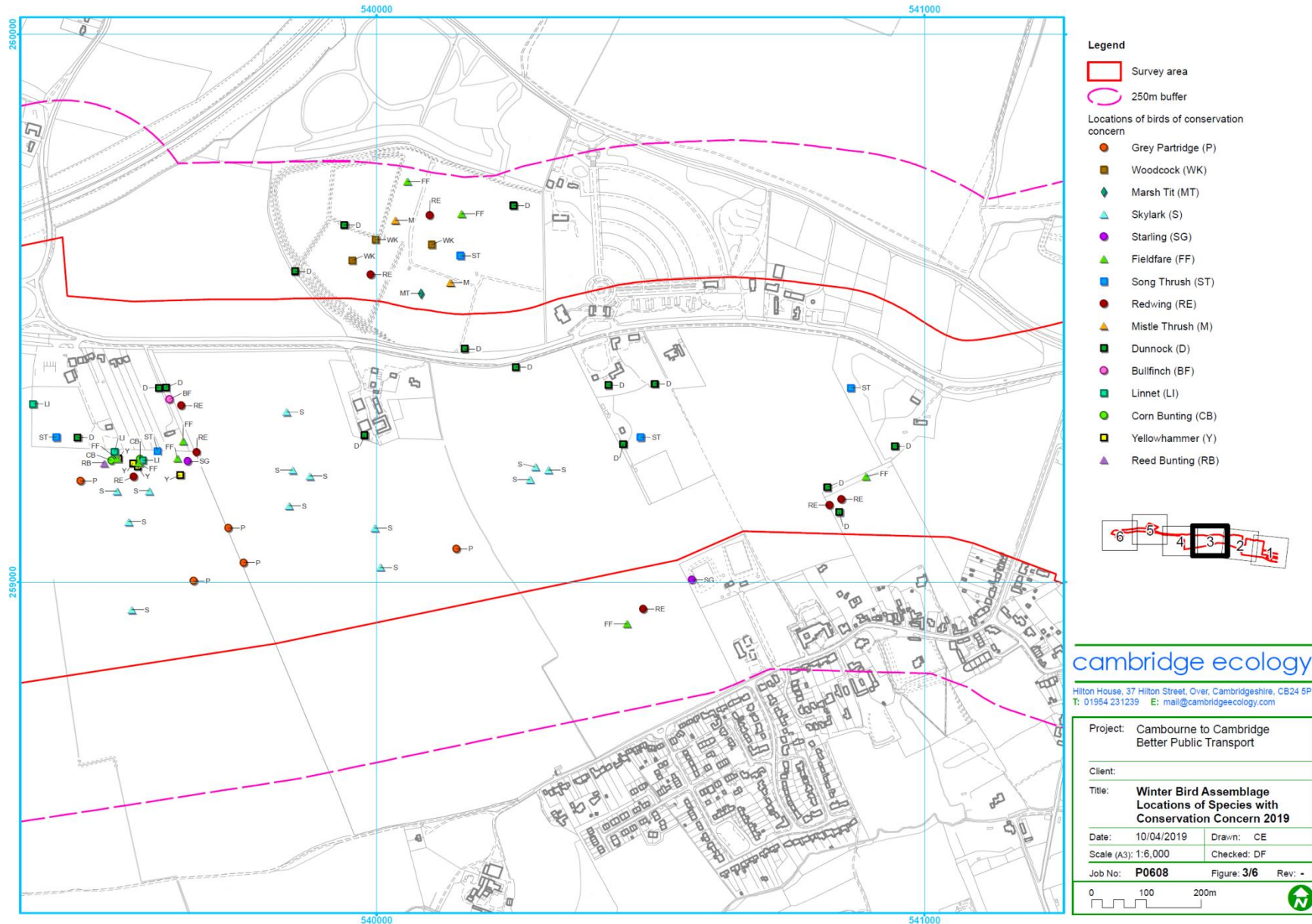


Figure 3.7: Indicative distribution of the bird species of conservation importance during winter 2018-19 (Sheet 4 of 6)

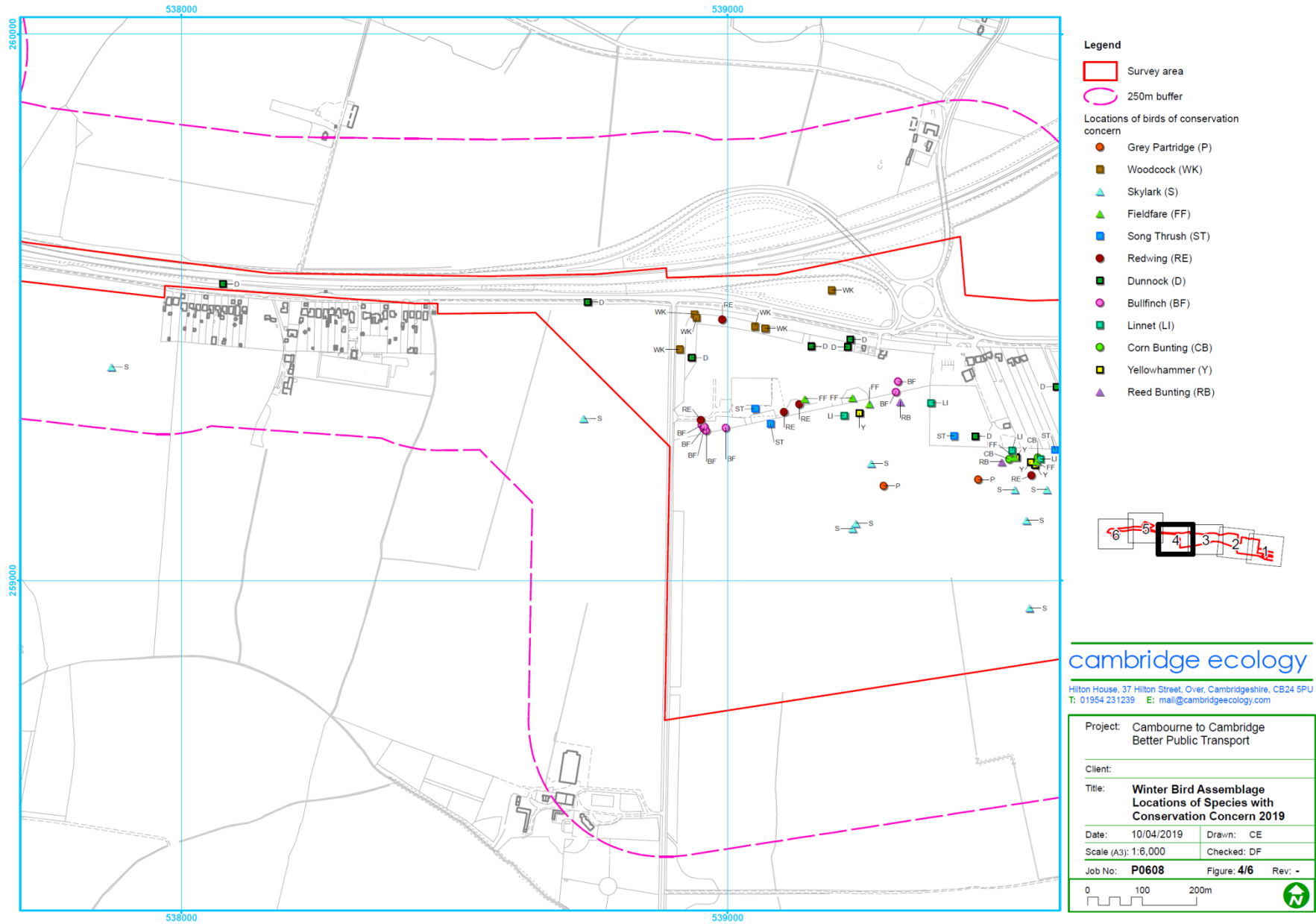


Figure 3.8: Indicative distribution of the bird species of conservation importance during winter 2018-19 (Sheet 5 of 6)

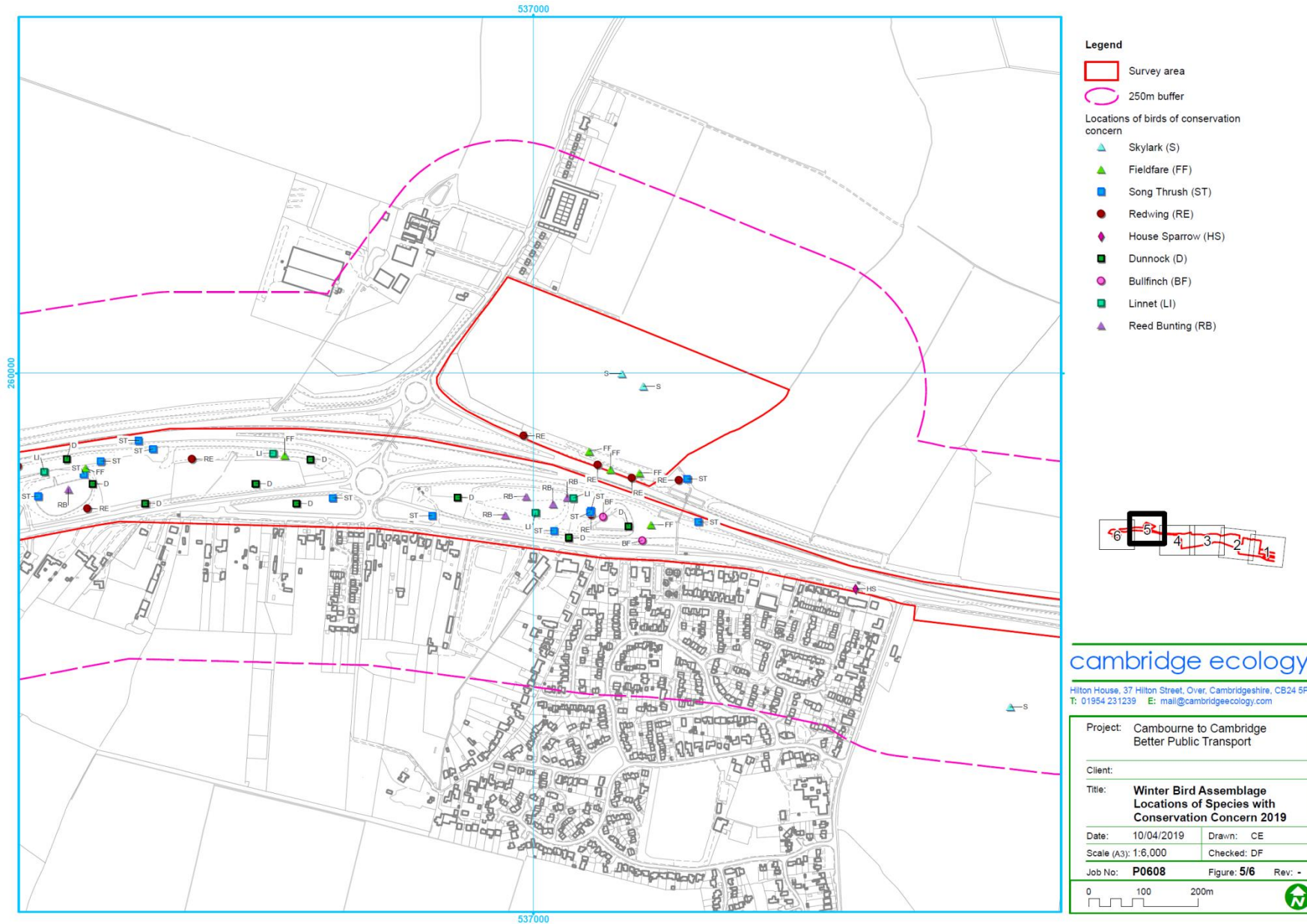


Figure 3.9: Indicative distribution of the bird species of conservation importance during winter 2018-19 (Sheet 6 of 6)

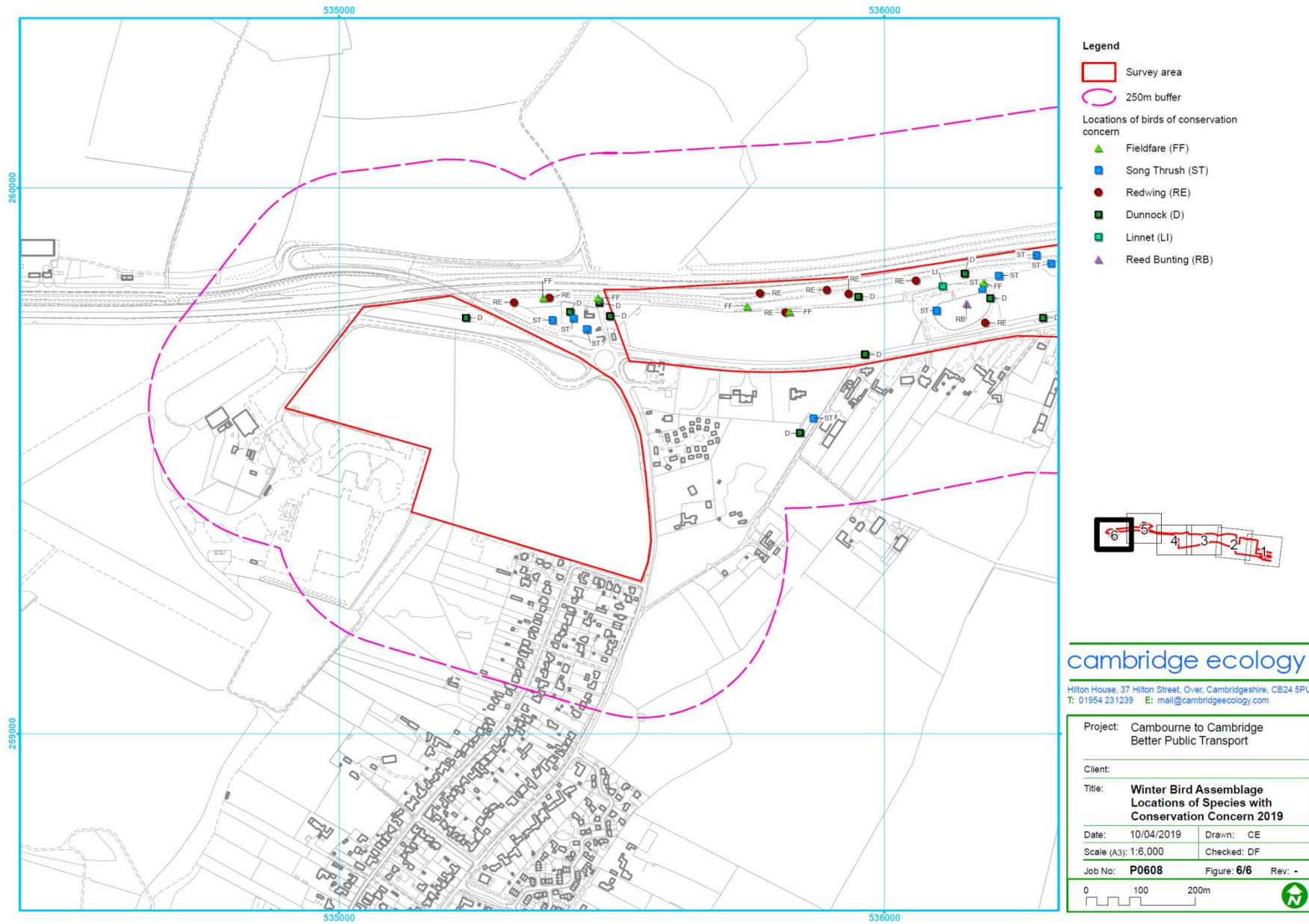


Figure 3.10: Indicative distribution of the Golden Plover and Barn Owl during winter 2018-19 (Sheet 1 of 3)

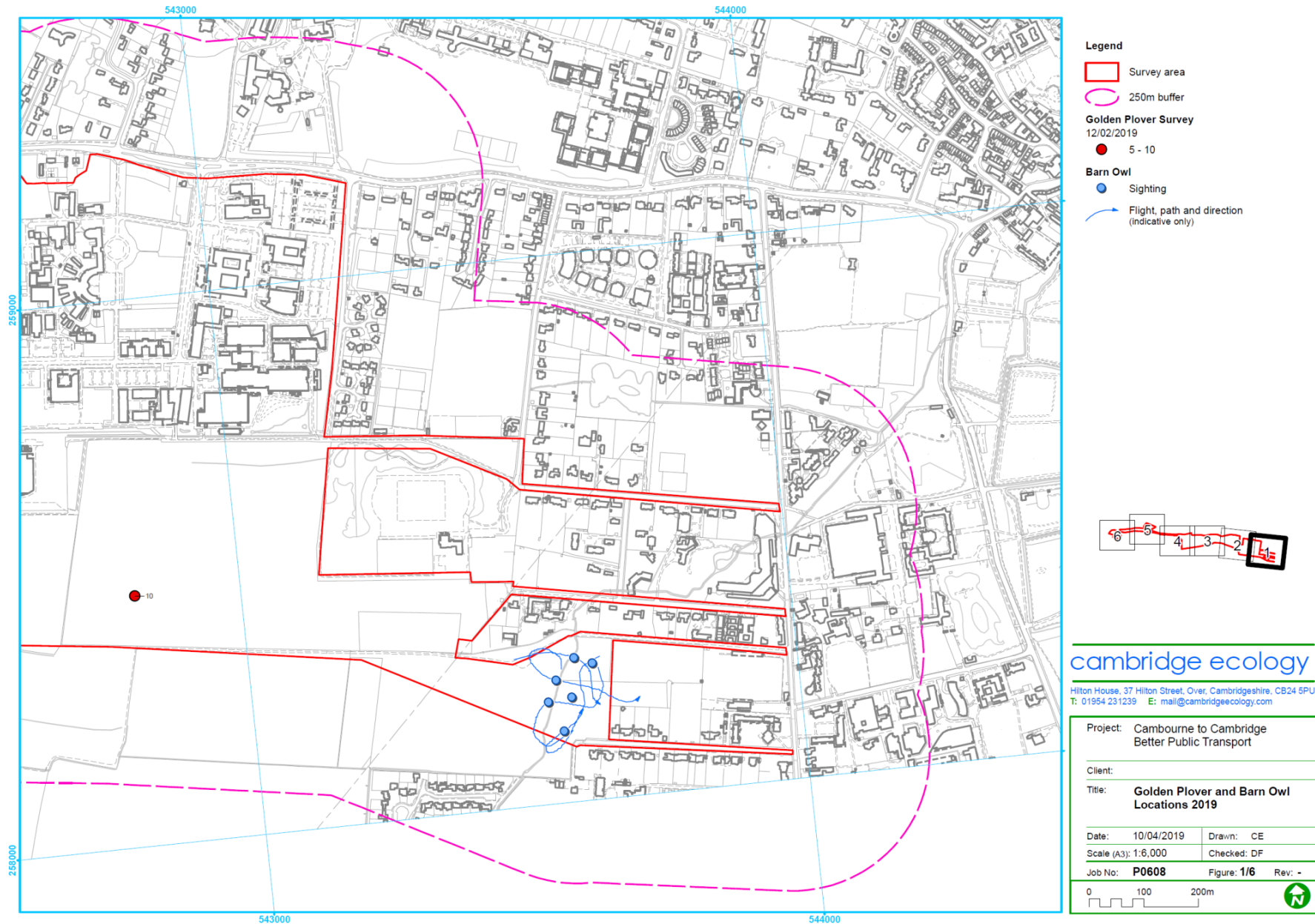


Figure 3.11: Indicative distribution of the Golden Plover and Barn Owl during winter 2018-19 (Sheet 2 of 3)

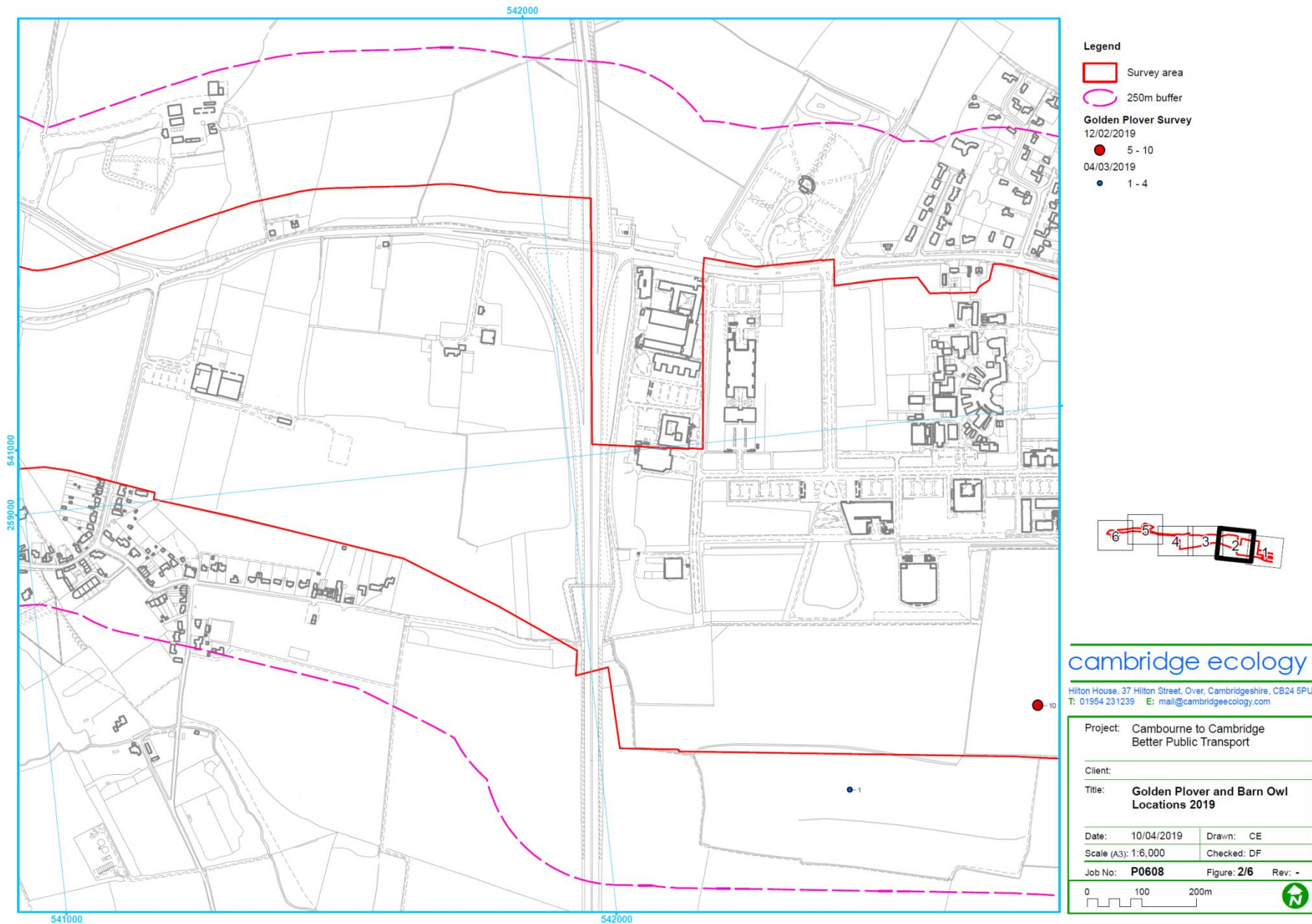
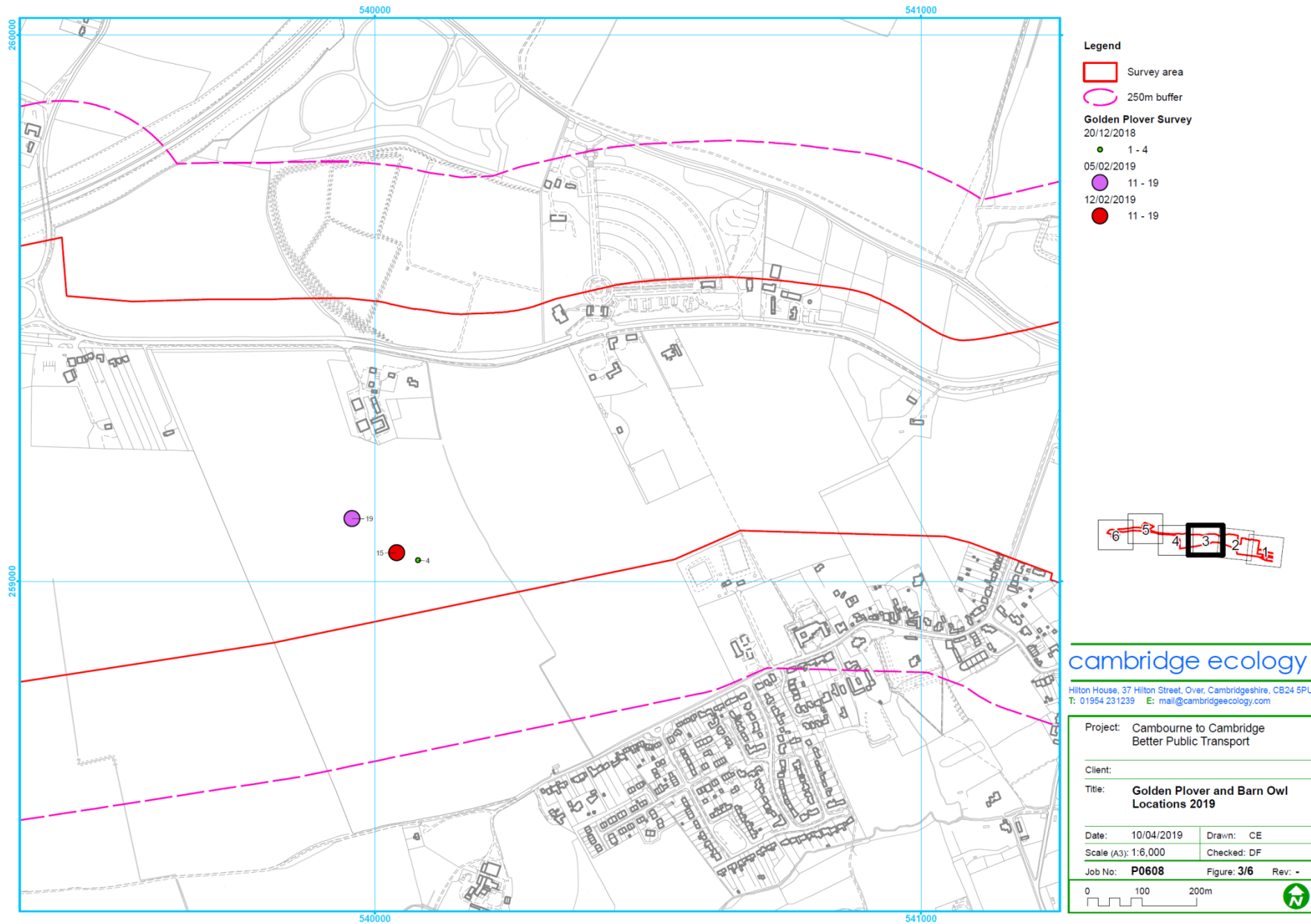


Figure 3.12: Indicative distribution of the Golden Plover and Barn Owl during winter 2018-19 (Sheet 3 of 3)



cambridge ecology
 Hilton House, 37 Hilton Street, Over, Cambridgeshire, CB24 5PU
 T: 01954 231239 E: mail@cambridgeecology.com

Project: Cambourne to Cambridge Better Public Transport		
Client:		
Title: Golden Plover and Barn Owl Locations 2019		
Date: 10/04/2019	Drawn: CE	
Scale (A3): 1:6,000	Checked: DF	
Job No: P0608	Figure: 3/6	Rev: -

Figure 3.13: Combined distribution of winter bird species of conservation importance across the entire survey area, with notable areas indicated.

