



Cambourne to Cambridge Better Public Transport:

Barn Owl Survey 2018-19

FINAL REPORT

**Confidential: To avoid potential persecution the maps showing the
locations of Barn Owl Boxes have been removed**

For:
Greater Cambridge Partnership

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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.

This report is only valid for external use in its final issued version.

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0 EXECUTIVE SUMMARY

- 0.1 On behalf of Greater Cambridge Partnership, Cambridge Ecology Ltd was commissioned to carry out a Stage 1 Barn Owl (*Tyto alba*) survey of the potentially suitable habitat on land associated with the Cambourne to Cambridge Better Public Transport Scheme. The survey area comprised the sections between Bourn Airfield and Grange Road, Cambridge.
- 0.2 The information gathered from the survey visits was considered to provide a representative indication of the potential and actual presence of nesting/roosting Barn Owl in the survey area.
- 0.3 No nesting/roosting Barn Owl were found during the survey visits. None of the trees inspected appeared to contain cavities suitable for use by nesting/roosting Barn Owl.
- 0.4 During the survey and separate winter bird survey (Cambridge Ecology 2019) there were observations of foraging Barn Owl in one area of suitable grassland habitat east of Bin Brook. There was also a garden on the northern edge of Coton village that had installed two Barn Owl nest boxes. Currently there were no signs that these were being used by Barn Owl.
- 0.5 The presence of Barn Owl activity within the survey area indicated that this species uses the area as foraging habitat and could over time find suitable nesting/roosting sites (e.g. Barn Owl nest boxes).
- 0.6 The results suggested that nesting/roosting Barn Owl currently does not constitute a constraint to the scheme; however, the presence of foraging Barn Owl and suitable feeding habitat and measures aimed to attract nesting/roosting Barn Owl indicate that this species should be of material consideration during the planning decision process.
- 0.7 Based on the findings of this survey, mitigation measures would be considered necessary for foraging and commuting Barn Owl.
- 0.8 A number of enhancement measures would be possible to benefit Barn Owl. 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.

1 INTRODUCTION

- 1.1 On behalf of Greater Cambridge Partnership, Cambridge Ecology Ltd was commissioned to carry out a Stage 1 Barn Owl survey of the potentially suitable habitat on land associated with the Cambourne to Cambridge Better Public Transport Scheme. The survey area comprised the sections between Bourn Airfield and Grange Road, Cambridge.
- 1.2 During an initial protected species scoping survey and desk-based literature search (Cambridge Ecology 2017a), carried out in February 2017 and updated in August 2017, the presence of habitat suitable to support Barn Owl and records (since 2007) of Barn Owl being present within 2km of the survey area were noted.
- 1.3 The habitats included:
- arable land, which was dominant,
 - amenity and improved grassland, tall ruderal, dense and scattered scrub, ephemeral/short perennial, and
 - 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, which were of particular conservation value.
- 1.4 The Barn Owl survey was therefore required to investigate the potential for Barn Owl, a protected species, to be present along the proposed route of the scheme and which could therefore potentially be affected by the development and hence potentially cause a constraint to the proposed development. If present, Barn Owl would need to be considered further in relation to maintaining compliance with wildlife legislation and planning policy.
- 1.5 For clarity in this report the development site (or 'site') refers to land within survey area including the red line boundary of the Cambourne to Cambridge Better Public Transport Scheme (see Figure 1.1).

Aims and objectives

- 1.6 The aim of the survey and this report was to:
- identify the actual and/or likely presence of nesting and roosting Barn Owl within the site;
 - evaluate the use, by Barn Owl, of any features (such as nest boxes, buildings and trees) including the status of any nests/roosts if present;
 - provide information to address any constraints caused by roosting/nesting Barn Owl at the site, including assessment of collision risk resulting from the development of the new road scheme, whether additional surveys and/or a disturbance licence would be required to ensure legal compliance is maintained.

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 It is noted that the survey area chosen deviated from the Barn Survey guidelines (Shawyer 2012). The guidelines recommend a survey area up to 1.5km area around the route. The survey area chosen was considered acceptable because the scheme was not a major road and therefore the level of traffic would not likely be comparable to a road. To obtain access across all areas up to 1.5km from the potential route (which was not actually set) was not something that GCP wished to pursue at that time. In addition, it was considered that if Barn Owl were detected during the survey then their presence would be addressed in the impact assessment with appropriate mitigation along the whole route, particularly as new habitat (grassland next to the route) along the route would potentially attract Barn Owl into the area and would require sympathetic mitigation along the entire route, therefore knowledge of the Barn Owl distribution in the wider area would not add significant useful information.
- 1.12 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 Policy

- 1.13 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);
 - The Countryside and Rights of Way (CROW) Act 2000;
 - National Planning Policy Framework 2012 (as amended);
 - The UK and Cambridgeshire Biodiversity Action Plan.
 - South Cambridgeshire District Council adopted Local Plans

Barn Owl Legislation and Planning Policy

- 1.14 All wild birds (resident, visiting, and introduced species) are protected by law under the Wildlife and Countryside Act 1981 (as amended) in England and Wales. With respect to developments it is illegal to:
- Intentionally kill, injure, or take any wild bird,
 - Intentionally take, damage or destroy the nest of any wild bird while it is being built or in use
 - Intentionally take or destroy the eggs of any wild bird.
- 1.15 Specially protected 'Schedule 1' birds including Barn Owl receive additional protection over and above that afforded to all wild birds, making it also illegal to intentionally or recklessly disturb any wild bird listed on Schedule 1 while nesting (building or at a nest containing eggs or young), or disturb any of its dependent young.

2 METHODS

- 2.1 A Stage 1/2 Barn Owl scoping and field inspection survey was carried out on the trees within the survey area. A plan showing the survey area is given in Figure 1.1.
- 2.2 The methods used were largely based on Barn Owl *Tyto alba* Survey Methodology and Techniques for use in Ecological Assessment: Developing Best Practice in Survey and Reporting (Shawyer 2011 and 2012). In addition, those described by the Barn Owl Trust in their survey techniques leaflet No 8 as well as Bird Monitoring Methods (Gilbert et. al. 1998) were also used.
- 2.3 The survey visits were conducted between the 11th November 2018 and 18th January 2019, led by a professional licensed and qualified ecologist, Darren Frost (Natural England Licence number: 2014-6298-SCI-SCI), with experience in Barn Owl inspection surveys and knowledge of Barn Owl breeding ecology.
- 2.4 The aim of the survey was to:
- look for potential nest sites (PNS), occupied breeding sites (OBS) and active roost sites (ARS);
 - determine whether Barn Owls are, have been or considered likely to be nesting within the survey area;
 - identifying temporary rest sites and potential feeding and dispersal habitat
- 2.5 The search entailed looking for evidence of Barn Owls including; droppings, pellets, feathers. Binoculars and high-powered torches were used to aid searches of the trees from ground level.
- 2.6 The exterior of the features and trees were searched to identify gaps and crevices through which Barn Owls could gain access and to identify features which could themselves provide potential nest sites (for example, external Barn Owl nest boxes).
- 2.7 Where possible the inside of the features and trees was searched for Barn Owls and/or signs of their presence and suitability to provide potential nest sites such as ledges/tree cavities. All features were checked for evidence of Barn Owl occupation. The area around these features, including the walls, ledges and floors and vegetation surrounding the trees was searched for droppings, feeding remains, regurgitated pellets and moulted feathers.
- 2.8 Photographs were taken to authenticate any evidence indicating the presence of nesting and/or roosting Barn Owls and to record the character of the areas where signs of Barn Owl activity were noted.
- 2.9 Weather conditions and visibility were good throughout the survey period; characterised by mild temperatures and dry conditions.
- 2.10 Table 2.1 shows details the actual survey dates and weather conditions.

Table 2.1 Weather conditions recorded during the times of the Barn Owl survey visits.

Survey	Time	General Weather Conditions	Date	Cloud Cover %	Wind		Temperature (Ave. °C)	Rain (y/n)
					Wind Direction	Wind Speed (Ave. mph)		
1	0930-1530	Dry/Overcast	29/11/18	100	S	20	13	No
2	0930-1530	Dry/Sunny	11/12/18	10	SSE	6	7	No
3	0930-1530	Dry/Overcast	18/01/19	100	SSW	4	0	No

3 RESULTS

- 3.1 There were no signs of nesting/roosting Barn Owl in any of the trees searched during the survey. None of the trees were considered suitable to support nesting/roosting Barn Owl.
- 3.2 Most of the habitat in the survey area was arable land with few field margins suitable for use by Barn Owl and therefore provided sub-optimal foraging habitat for Barn Owl.
- 3.3 Figure 3.1a-3.1c showing the arable field usage present during the Barn Owl Survey. For detailed references to the habitats present refer to the Phase 1 Habitat map issued with the Phase1 habitat survey report (Cambridge Ecology 2017b). Habitat suitable to support foraging Barn Owl during the survey included:
- the grassland fields to the east and grassland margins to the west of Bin Brook
 - the grassland areas associated with the covered reservoir between Long Road and Madingley Mulch.
- 3.4 Foraging Barn Owl activity was observed on three occasions (including during visits as part of the winter bird survey Cambridge Ecology 2019), in the grassland fields east of Bin Brook between Herschel Road and Cranmer Road (see Figure 3.2a). This comprised a single Barn Owl hunting during daylight hours.
- 3.5 Two Barn Owl nest boxes (Hawk and Owl Trust, Box Numbers EM1099 and EM1100) were found during the survey, these were located on the edge of a mature garden on the north side of Coton Village (see Figure 3.2b).
- 3.6 Information (email dated 13/02/2019) about these Barn Owl nest boxes was provided by James Littlewood of Cambridge Past, Present and Future (CPPF). He reported that the property owner indicated that: 'In June 2017 two Barn Owls came down the main chimney into the living room of the house whose garden the Barn Owl boxes were installed. This event prompted the homeowner to arrange for the Hawk and Owl Trust to erect the two nest boxes on the perimeter of the garden facing out into the open arable fields. The 2018 monitoring showed that the boxes had been used by Stock Doves (*Columba oenas*) but not owls. Barn Owls have been observed elsewhere in Coton, to the south of the village (which is outside the survey area)'.

Survey Constraints

- 3.7 It was considered that the Barn Owl Inspection survey of the land within and adjacent to the site provided a representative assessment of the potential for the site to support breeding and roosting Barn Owl within the areas searched at the site. A thorough search was made of all accessible habitats within the survey area. The survey was considered to have been carried out methodically to locate signs indicating the presence of Barn Owl and inspection of the trees potential to contain potential roost and nest features.

- 3.8 It was acknowledged that some areas were inaccessible during the survey; due to lack of access to private land (mostly residential and commercial containing buildings). Therefore, the presence/absence of nesting and/or roosting Barn Owl could not be verified in the buildings in these areas.
- 3.9 It is recognised that there would always be a risk that Barn Owl and their signs could be over-looked, either owing to the timing (both time of day and time of year) of the survey, the in-accessibility to some areas, the scarcity of the species at the site or the ability of Barn Owl to move to new sites periodically and therefore move into an area after the survey had been carried out.

4 KEY POINTS AND RECOMMENDATIONS

- 4.1 A Barn Owl survey was carried out between November 2018 and January 2019 inclusive, on land between Grange Road, Cambridge and the Bourn Airfield entrance off the A1303.
- 4.2 The information gathered from the survey visits was considered to provide a representative indication of the current status of nesting/roosting Barn Owl in the survey area.
- 4.3 No nesting/roosting Barn Owl or signs of their presence were found in any of the trees searched during the survey. None of the trees were considered suitable to support nesting/roosting Barn Owl. Therefore, the survey indicated that nesting/roosting Barn Owl were currently absent from the survey area.
- 4.4 Barn Owl usually select isolated mature trees along linear features (e.g. hedgerows) or isolated trees in pasture in which to nest; provided these have large enough cavities to support a Barn Owl family (Sawyer 1994). Most of the hedgerows did not contain any suitably sized trees, and those mature trees that were present along the hedgerows did not contain suitable cavities.
- 4.5 The presence of artificial nest sites in the form of two Barn Owl nest boxes were observed within a mature garden on the northern edge of Coton village. These boxes provide an opportunity for Barn Owl to nest in the survey area. In 2018, the nest boxes appeared to be used by Stock Dove (pers. com. J. Littlewood). Currently there were no signs to indicate that the nest boxes were used by Barn Owl.
- 4.6 During the Barn Owl survey and the winter bird survey visits, the presence of Barn Owl was observed in the survey area. On separate occasions a single Barn Owl was observed hunting in daylight hours in suitable habitat east on Bin Brook, between Herschel Road and Cranmer Road. Barn Owl are known (Shawyer 1994) to hunt between 1-2km from their preferred nest/roost sites. Therefore, it is likely that suitable Barn Owl nest/roost sites are located within 2km of the survey area, but not necessarily within the survey area itself.
- 4.7 The arable land within the survey area provided sub-optimal habitat for Barn Owl. There were two rather isolated areas of grassland habitat that were considered suitable for foraging Barn Owl. The first was located in the grassland on either side of Bin Brook at the eastern end of the survey area (where the foraging Barn Owl was observed), the second area was the grassland associated with the covered reservoir between Long Road and Madingley Mulch south of the A1303. These two areas were at least 3km apart and not linked.
- 4.8 The results of the Barn Owl survey and data from the winter bird survey indicate that Barn Owl are present within the survey area, even if there are no current signs of active nest/roost sites.
- 4.9 Based on the findings of this Barn Owl survey, mitigation measures would currently be considered necessary to address the presence of foraging Barn

Owl, this is because Barn Owl are known to be particularly susceptible to road traffic collision (Shawyer 1994). The detail of the 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 to the local Barn Owl population.

- 4.10 There is also an opportunity for enhancement measures involving, habitat creation, habitat linkages and management that would benefit the local Barn Owl population. The enhancement measures should be incorporated into the landscape/habitat creation design for the proposed scheme and designed to result in conservation gain for Barn Owl.
- 4.11 These enhancements would help ensure the scheme met national and local planning policy targets. Section 40 of the Natural Environment & Rural Communities Act (NERC) 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. The National Planning Practice Guidance (Natural Environment, paragraph 7) states that this includes seeking to make a significant contribution to meeting the commitments made by Government in its Biodiversity 2020 strategy by seeking to minimise impacts on biodiversity and providing net gains where this is possible.

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6 FIGURES

Figure 1.1 Map showing the red line boundary of the survey area.

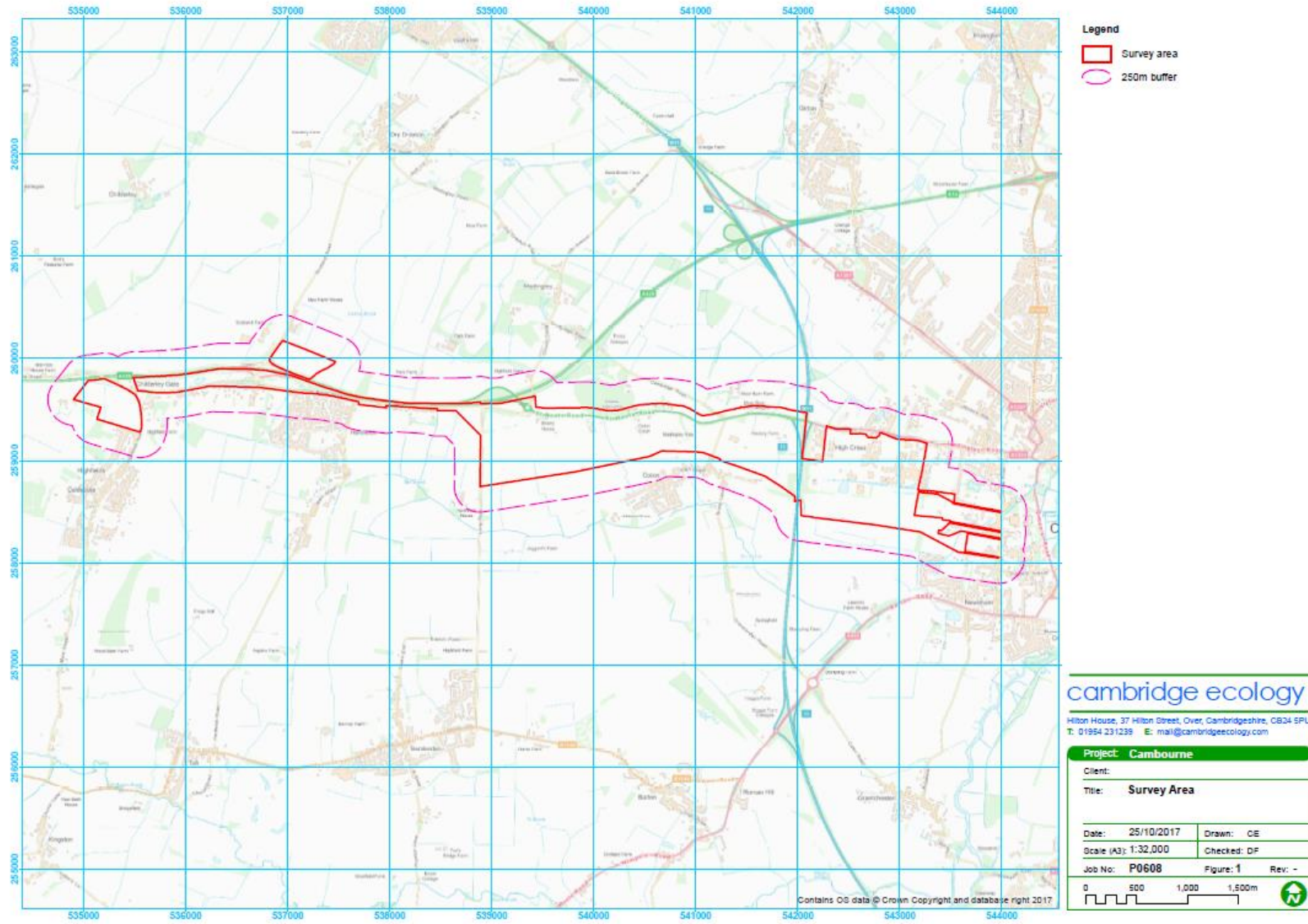


Figure 3.1a: Indicative arable field usage in the eastern section of the survey area (sheet 1 of 3)

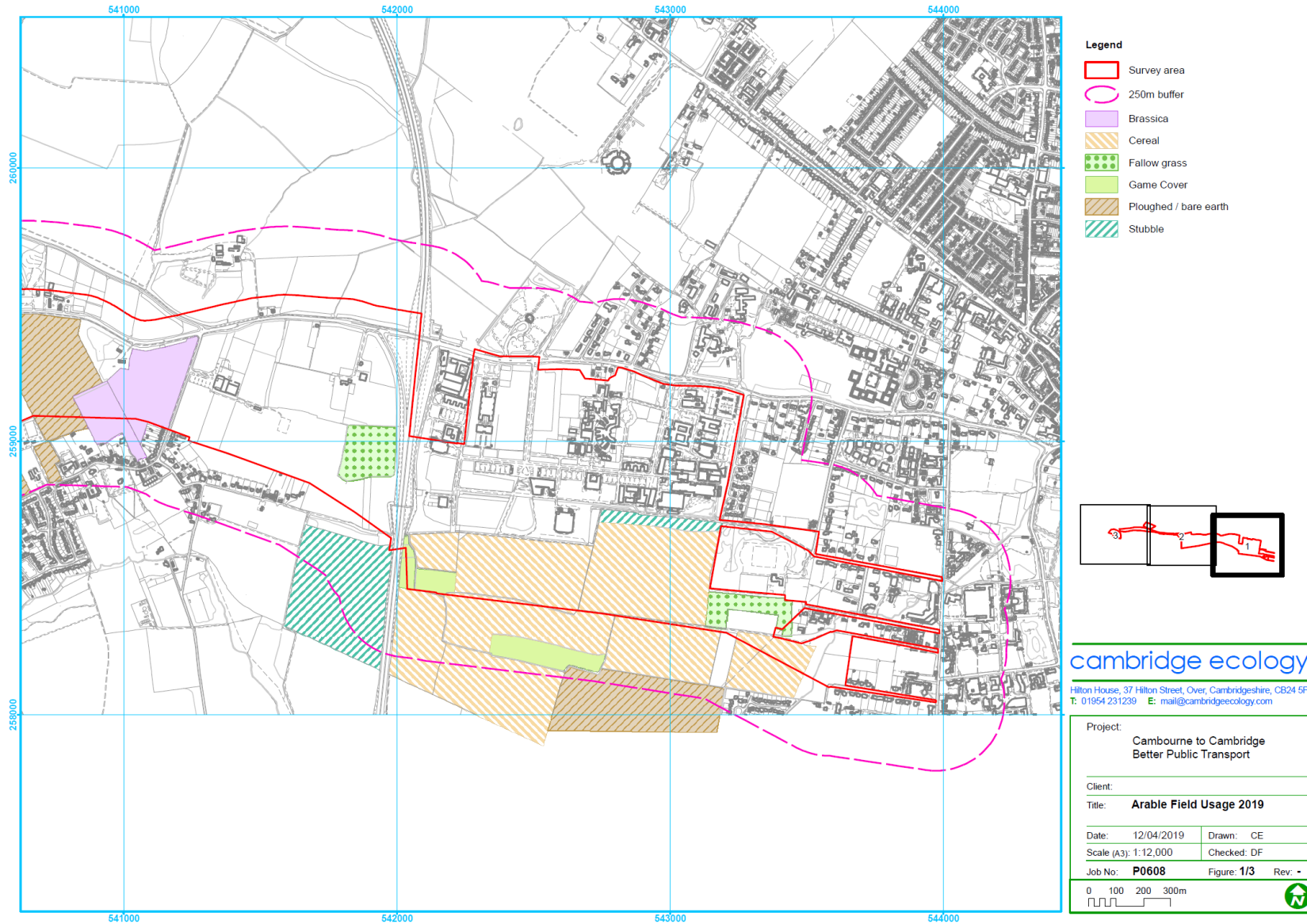


Figure 3.1b: Indicative arable field usage in the eastern section of the survey area (sheet 2 of 3)

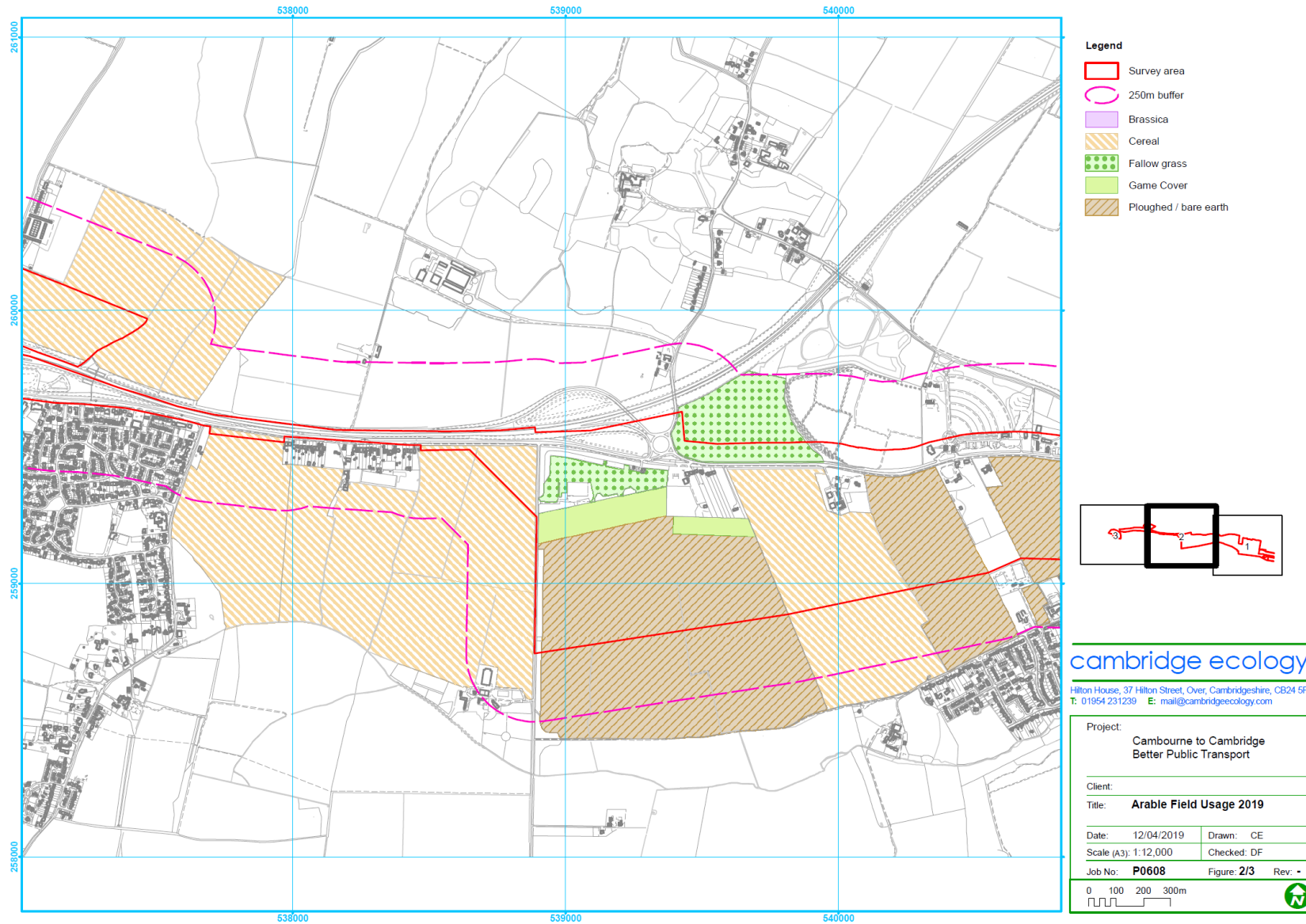


Figure 3.1c: Indicative arable field usage in the eastern section of the survey area (sheet 3 of 3)

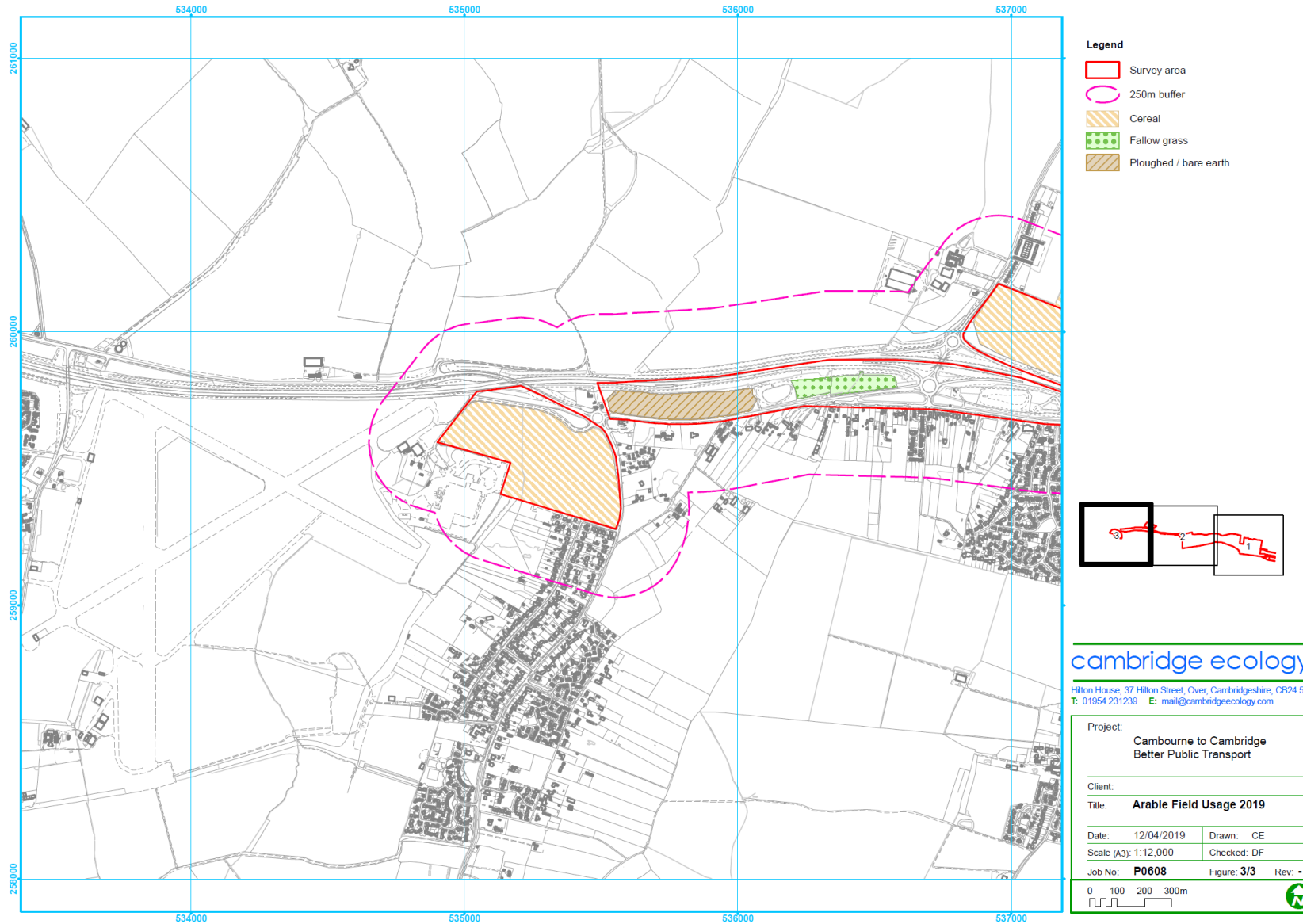


Figure 3.2a: Plan showing the indicative location of Barn Owl observations (sheet 1 of 2)

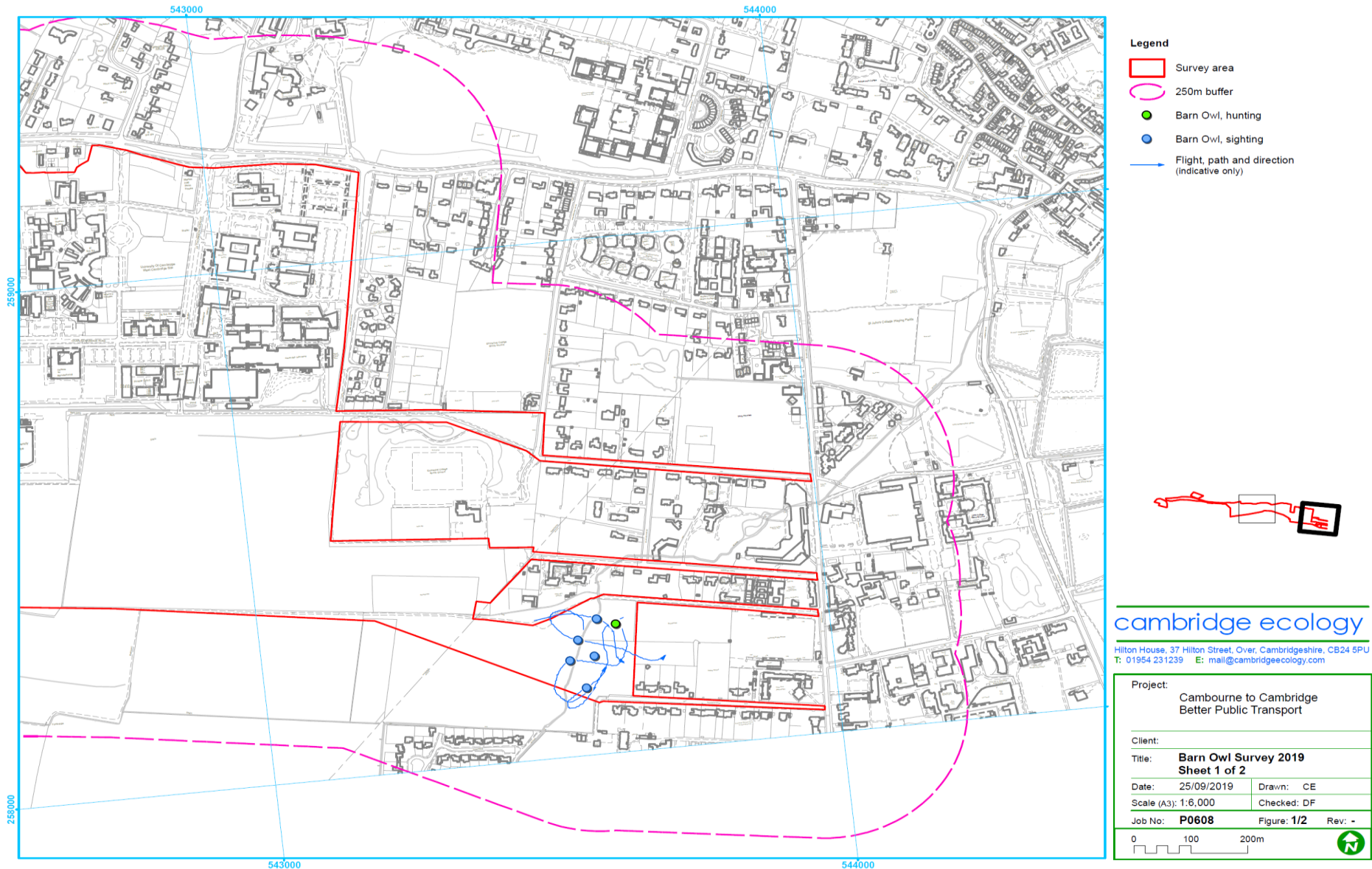
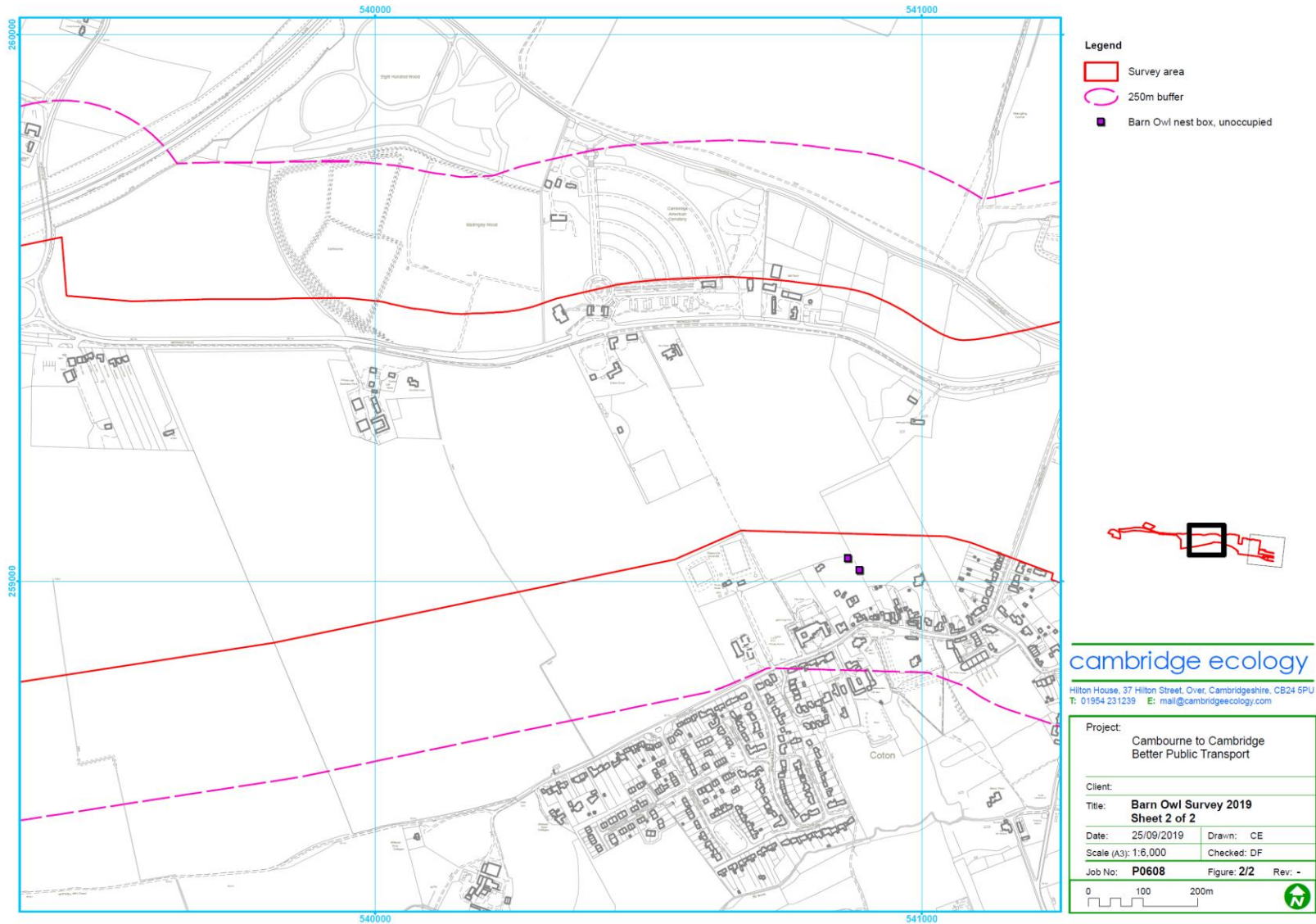


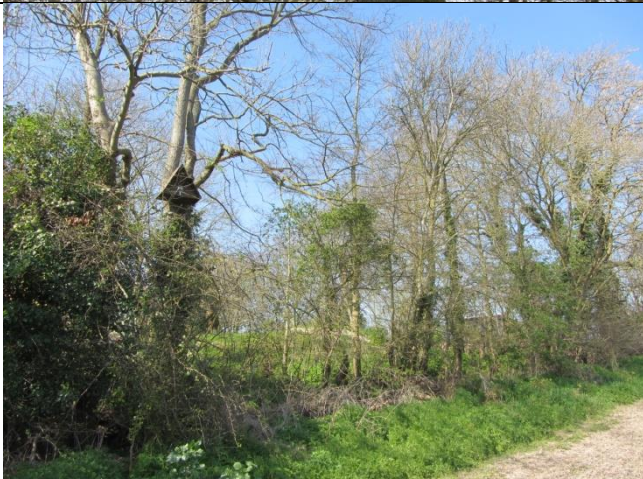


Figure 3.2b: Plan showing the indicative location of Barn Owl Observations (sheet 2 of 2)

**Confidential: To avoid potential persecution the maps showing the locations of Barn Owl Boxes have been removed
REENA PLEASE REMOVE MAP FROM PUBLISHED VERSION**



7 PHOTOGRAPHS

Photo No.	Photograph	Description
1		<p>View of Barn Owl nest box on boundary of mature garden next to arable land north of Coton Village.</p> <p>Box Number EM1100</p>
2		<p>View of Barn Owl nest box. Hawk and Owl trust Box Number EM1100.</p>
3		<p>View of Barn Owl nest box on boundary of mature garden next to arable land north of Coton Village.</p> <p>Box Number EM1099</p>

4		View of Barn Owl nest box. Hawk and Owl trust Box Number EM1099.
5		Tussocky grassland east of Bin Brook used by foraging Barn Owl
6		Tussocky grassland east of Bin Brook used by foraging Barn Owl

7



Tussocky grassland east of Bin Brook used by foraging Barn Owl