

Ecology Solutions Limited
Farncombe House
Farncombe Estate
Broadway
Worcestershire
WR12 7LJ

+44(0)1451 870767
info@ecologysolutions.co.uk
www.ecologysolutions.co.uk



8923: KETTERING ENERGY PARK

BRIEFING NOTE: ECOLOGICAL SURVEYS

Introduction

1. Ecology Solutions was commissioned by Michael Sparks Associates on behalf of Panattoni in September 2020 to undertake ecological survey and assessment work at the Kettering Energy Park site (hereafter referred to as the site).
2. This Note outlines the methodology and results of the survey work completed at the site to date and provides initial guidance in relation to ecological constraints and opportunities, in order to inform the emerging development proposals for the site.

Survey Methodology

Habitats

3. A habitat survey was carried out in September 2020 to ascertain the general ecological value of the land contained within the boundaries of the site and to identify the main habitats and associated plant species.
4. The site was surveyed based around extended Phase 1 survey methodology¹, as recommended by Natural England, whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey attention. Any such areas identified can then be examined in more detail.
5. Using the above method, the site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified.

Protected and Notable Species

6. General faunal activity observed during the course of the Phase 1 survey was recorded, whether visually or by call. Specific attention was paid to the potential

¹ Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit*. England Field Unit, Nature Conservancy Council, reprinted JNCC, Peterborough.

presence of any protected, rare, notable or Priority species, and the extent to which the site could provide any potential opportunities for these species / groups.

7. In addition, specific survey and assessment work was undertaken in respect of bats, Badgers *Meles meles*, reptiles, amphibians and wintering birds.

Bats

8. All trees and buildings present within and immediately adjacent to the site were assessed for their potential to support roosting bats during the habitat survey in September 2020.
9. Bat activity surveys were also undertaken to ascertain the level of use of the site by foraging and commuting bats. Monthly dusk activity surveys were completed in September and October, with further work scheduled for 2021. Surveys included walkover transects and the deployment of static detectors in strategic locations within the site.
10. For the walked transects, routes were identified to ensure comprehensive coverage of all habitats present within the site. Surveyors utilised Echo Meter 2 (EMT2) bat detectors to aid identification of bats and record data, which was subsequently analysed using specialist software. Activity bat surveys were conducted from 15 minutes before sunset to approximately 2 hours after sunset. As with the emergence / re-entry survey, walked transect survey work was completed during optimal conditions for bat surveys.
11. For static detector surveys, SM4 bat detectors were deployed each month for a minimum of five consecutive nights in strategic locations within the site. All data recorded was subsequently analysed using bat sound analysis software, providing long-term data regarding the use of the application site by foraging and commuting bats. Detectors were set to record each night from 20 minutes prior to sunset until 20 minutes after sunrise.
12. All data recorded during the walked transects and static detector surveys were subsequently analysed using Kaleidoscope bat sound analysis software.

Badgers

13. Specific survey work was undertaken in September 2020 to search for evidence of Badgers within the site.
14. The survey work entailed two elements, the first of which was a thorough search for evidence of any Badger setts. For any setts encountered, each entrance would be recorded and plotted, even if the entrance appeared disused. The following information was recorded:
 - i. The number and location of well used or very active entrances; these are clear of any debris or vegetation and are obviously in regular use and may, or may not, have been excavated recently.
 - ii. The number and location of inactive entrances; these are not in regular use and have debris such as leaves and twigs in the entrance, or have plants growing in or around the edge of the entrance.

- iii. The number of disused entrances; these have not been in use for some time, are partly or completely blocked and cannot be used without considerable clearance. If the entrance has been disused for some time all that may be visible is a depression in the ground where the hole used to be together with the remains of the spoil heap.
15. Secondly, evidence of Badger activity such as well-worn paths, run-throughs, snagged hair, footprints, latrines, and foraging signs was recorded so as to build up a picture of the use of the site by Badgers.

Reptiles

16. Specific surveys to ascertain the presence or absence of common reptiles at the site were undertaken between September and October 2020.
17. A total of 255 artificial refugia or 'tins' (0.5 x 0.5 metre squares of heavy roofing felt which are often used as refuges by reptiles) were distributed throughout all suitable reptile habitat across the site.
18. These tins were initially left in place to 'bed in' and were subsequently surveyed for reptiles beneath or upon the tins during suitable weather conditions. The tins provide shelter and heat up quicker than the surroundings in the morning and can remain warmer than the surroundings in the late afternoon. Being ectothermic (cold blooded), reptiles use them to bask and raise their body temperature which allows them to forage earlier and later in the day.
19. Suitable weather conditions to carry out surveys are when the air temperature is between 9°C and 18°C. Heavy rain and windy conditions were avoided. A total of seven surveys were undertaken during suitable weather conditions. All surveyors were mindful to record all reptiles present on top of and under the tins, in addition to any observed when walking through the suitable habitats between the tins. All reptiles observed were recorded by the surveyor.

Amphibians

20. All waterbodies located within and in close proximity to the site boundary were subject to Habitat Suitability Index (HSI) assessment work in September 2020, to assess the suitability of these features to support breeding Great Crested Newts *Triturus cristatus*.
21. The HSI assessment methodology involves a numerical index which identifies a score between 0 and 1, indicating the suitability of a waterbody for breeding Great Crested Newts. Each waterbody was subject to a visual assessment (where access was possible), with the feature 'scored' in relation to each of the criteria which comprise the HSI methodology.
22. These scores can then be used to determine pond suitability using the categorisation shown in Table 1 below. The intention of this method is to seek to scope out the requirement for further specific survey work, where possible and robust.

HSI Score	Pond Suitability
<0.5	Poor
0.5 – 0.59	Below Average
0.6 – 0.69	Average
0.7 – 0.79	Good
>0.8	Excellent

Table 1: Categorisation of HSI Scores

Wintering Birds

23. Specific wintering bird surveys have been undertaken at the site in November and December 2020, with further work scheduled for January and February 2021.
24. Given the size of the application site, the survey methodology was based around a transect and vantage point survey, with reference to the Common Bird Census and BTO/RSPB Guidelines.
25. Transect routes and vantage points were chosen prior to undertaking the survey so as to observe the entire area which was to be surveyed. Transects were chosen in order to ensure adequate coverage of the survey area and in order to reduce the likelihood of disturbing birds when moving through the survey area.
26. The surveyors walked the chosen transects, with occasional stops at suitable vantage points, and recorded the following information using arrange of high-quality optics including binoculars and scopes where appropriate:
 - Maximum count of each species of bird recorded on the ground;
 - Record any notable movements of birds recorded (also identified on a map);
 - Details regarding weather conditions, including cloud cover, temperature and wind speed/direction.
27. Surveys were undertaken during suitable weather conditions; specifically good visibility and light winds. Surveys were avoided where light levels are low, visibility is considered to be poor or there were high winds.

Survey Findings and Initial Appraisal

Habitats

28. The following habitats were identified during the survey:
 - Arable Fields;
 - Broadleaved Plantation Woodland;
 - Hedgerows;
 - Scrub and Ruderal Vegetation;
 - Improved Grassland;
 - Pond; and
 - Existing Buildings / Structures and Hardstanding.

Arable Land

29. The site primarily comprises intensively managed arable fields. At the time of the survey in September, all of the fields appeared to have been recently ploughed with the exception of a limited number of Maize strips providing game cover.
30. The field margins comprise species-poor semi-improved grassland and were generally narrow (less than one metre in width), with the exception of the margin at the west of the site and areas surrounding the residential dwellings.
31. Areas of arable land are of negligible ecological value and provide few (if any) opportunities for faunal species. As such, losses to this habitat are not of any significance in ecological terms and no mitigation would be required.

Broadleaved Plantation Woodland

32. The site supports two areas of broadleaved plantation: one adjacent to the eastern boundary of the site, and a smaller area in the north west. Both of these areas support a relatively broad range of semi-mature native tree and scrub species.
33. Whilst these have been planted relatively recently, the areas of plantation woodland are of comparatively greater value than other habitats present within the site, both on account of their botanical diversity but perhaps more importantly because of the opportunities that they provide for faunal groups (see below).
34. However, it is clear that these habitats are far from irreplaceable and as such subject to the provision of suitable new areas of planting losses can be offset under emerging development proposals for the site.

Hedgerows

35. A number of hedgerows are present around the field boundaries at the site that are subject to varying levels of management. The majority of the hedgerows and treelines have a good structure, are regularly managed and support a range of native species, although they are typically dominated by either Blackthorn *Prunus spinosa* or Hawthorn *Crataegus monogyna*.
36. None of the hedgerows present within the site are likely to qualify as 'important' under the Hedgerow Regulations 1997 and in general are relatively limited in terms of the species diversity present. However, these features do provide potential opportunities for faunal groups in the form of linear features for foraging and commuting bats and habitats for nesting birds.
37. Where losses to existing hedgerows are required to facilitate the emerging development proposals, there should be ample scope at the site to mitigate for such losses through the provision of new native planting and/or the enhancement of retained features.

Scrub and Ruderal Vegetation

38. Areas of longer scrub, ruderal and rough grassland vegetation are present surrounding the tree plantation on the eastern boundary and along some of the hedgerow bases.

39. Whilst these habitats provide some limited opportunities for faunal species, these are not considered to be of particular ecological value, and the retention of existing features and provision of new landscaping would offset losses which are required.

Improved Grassland

40. Areas of species-poor improved grassland are present within the site typically along the narrow field margins. A more extensive area of improved grassland is present in the central part of the site, including land adjacent to Wold Lodge (airstrip).
41. Given the lack of diversity in the sward and the regular management regime, these habitats are also considered to be of very low ecological interest and provide few opportunities for faunal groups.

Pond

42. A pond is present at the centre of the site to the south of the Wold Lodge. This feature contains marginal vegetation such as Bullrush *Typha latifolia* and Common Reed *Phragmites australis* and is surrounded by regularly mown amenity grassland.
43. The pond offers potential opportunities for faunal groups such as breeding amphibians and invertebrates, although its value is limited given its isolation from other such habitats in the local area. Assuming that the emerging development proposals will require SuDS as part of the drainage strategy, there is likely to be scope to argue that wetland habitats within the site would be enhanced compared to the existing situation.

Existing Buildings / Structures and Hardstanding

44. The site supports a number of existing buildings and structures, including three residential dwellings with associated outbuildings and sheds and several large modern agricultural barns. Areas of hardstanding are also present in the site in the form of roads and tracks.
45. Whilst a limited number of buildings provide potential opportunities for roosting bats (see below), they are not of any intrinsic ecological value and as such no mitigation would be required for losses.

Protected and Notable Species

Bats

46. **Roosting.** The majority of the existing buildings and structures present within the site do not offer any opportunities for roosting bats on account of their structure and construction.
47. However, the stone farmhouse which adjoins the western boundary of the site is considered to have moderate potential to support roosting potential for bats on account of the gaps present in the stonework and at the roofline of the building. Moreover, the other two residential dwellings located within the site were identified to have low potential to support roosting bats.

48. There are no trees present within or adjacent to the site which support features of potential value for roosting bats (such as cracks, splits and holes).
49. If buildings identified to have potential to support roosting bats are likely to be impacted by the emerging development proposals (i.e. demolished, converted or subject to an increase in artificial lighting), it is recommended that further survey work should be undertaken in the form of an internal survey, followed by emergence / re-entry survey work (if roosting potential cannot be scoped out). This level of work would ascertain the presence or absence of roosting bats, and therefore determine whether a licence from Natural England would be required.
50. With the exception of internal surveys (which can be undertaken at any time), emergence and re-entry survey work for bats can only be completed during the active period (from April to late September / early October inclusive), during suitable weather conditions.
51. **Foraging and Commuting.** Existing habitats present within the site, including the hedgerows, broadleaved plantations, scrub and pond are considered to provide potential opportunities for foraging and commuting bats. As such, specific survey work is underway to record both the level of bat activity and species present within the site and to ascertain whether there are any features of particular importance for this group.
52. To date, surveys have been undertaken in September and October 2020, including both walked transect surveys and automated static detector surveys. Appendix 1 attached to this Note summarises the survey results.
53. The vast majority of activity recorded during the September and October surveys pertains to Pipistrelle *Pipistrellus* spp. bats, which are the most common and widespread species in the UK. However, surveys have identified that the site is utilised by Barbastelle bats *Barbastella barbastellus*, a rarer bat species which typically roosts in woodlands. Barbastelle bats are known to prefer more densely vegetated corridors of vegetation (woodland and dense hedgerows / scrub) to move between roosts and foraging habitats and are considered to have a larger home range (foraging area) than other bat species.
54. Surveys completed in September and October identified that the area of broadleaved plantation woodland in the eastern part of the site (shown as Location 2 on the plans at Appendix 1 of this Note) supported the highest level of Barbastelle activity, although this species was also recorded on static detectors deployed adjacent to the woodland to the north-west of the site and the mature hedgerow passing through the centre of the site.
55. It is recommended that bat activity surveys should continue from April 2021, to ensure that a robust baseline position can be established for a forthcoming planning application. In light of the guidance, it is recommended that surveys should be undertaken on a monthly basis until July 2021 at the earliest, to provide sufficient coverage of the survey season.
56. Given that the vast majority of the site comprises intensively managed arable land (which offers nothing for foraging or commuting bats, including Barbastelles), it remains the case that the bat activity recorded is unlikely to affect the proposals for the majority of the site. However, given that existing woodland, trees and scrub are of particular value for Barbastelle bats, and that connectivity passing through the landscape for this species is likely to be perceived by consultees as important,

it is recommended that the emerging masterplan proposals should seek to retain existing vegetation along field boundaries (where possible). Given the level of activity recorded adjacent to the mixed plantation in the eastern part of the site it would be beneficial in particular to retain this area.

57. It is recommended that the green infrastructure strategy for the site should seek to retain and provide strong corridors passing east/west and north/south through the site, with a focus on woodland, tree, scrub and hedgerow planting (to provide tall, dark features). The provision of wetland features (SuDS) should also be complementary to a degree. Subject to a lighting design which minimises lightspill into these areas, this would enable a clear argument that Barbastelle (and indeed other bat species) can utilise these wildlife corridors to pass across and through the site, whilst at the same time minimising ecological constraints associated with development parcels.

Badgers

58. No evidence of Badger activity, including any setts, foraging signs, latrines, footprints, hairs, well-used pathways or push-throughs, was recorded within the site or immediate vicinity during the survey.
59. Given the absence of any evidence to indicate the presence of Badgers, it is considered unlikely that they would be present within the site. As such no further survey work or mitigation would be required in respect of this species.

Birds

60. As noted previously, Upper Nene Valley Gravel Pits Special Protection Area (SPA) / Ramsar site / Site of Special Scientific Interest (SSSI), which is designated on account of its breeding bird and wintering water bird assemblages, is located approximately 3km to the east of the site at its closest point. As the arable habitats present within the site may provide potential opportunities for wintering wetland birds associated with the SPA / SSSI such as Golden Plover *Pluvialis apricaria*, and mindful of the strict protection afforded to such sites under the Habitats Regulations, wintering bird surveys are underway to ascertain the extent to which qualifying species utilise the site.
61. To date, wintering bird surveys have been undertaken in November and December 2020, with the results illustrated on the two figures at Appendix 2 of this Note. In general, survey work completed to date has identified that the site is utilised by an assemblage of common and widespread bird species during the winter period.
62. With regard to bird species associated with the SPA / SSSI, a flock of 19 Lapwing *Vanellus vanellus* was recorded flying over the northern part of the site in the November survey, although no other wetland species were recorded during this survey visit. During the December survey, a single Golden Plover was recorded in the southern part of the site.
63. Whilst wintering bird surveys are ongoing, at the present time there is no evidence to indicate that the site is of any particular importance for wintering birds associated with the nearby SPA / SSSI. Whilst individual / small numbers of Lapwing and Golden Plover have been recorded, there is no evidence to date to suggest that the site would be likely to qualify as 'supporting habitat' for the SPA.

64. The hedgerows and plantation woodland present within the site also provide potential nesting and foraging habitats for breeding birds, although the arable land which comprises much of the site provides few opportunities. To ascertain the value of the site for this group, it is recommended that breeding bird surveys should be completed in Spring 2021 (March to May inclusive); however, at first blush it is likely that sufficient mitigation can be included within the emerging development proposals, in the form of retained vegetation, new species-rich planting and the provision of new nesting features.

Reptiles

65. Specific surveys were undertaken to ascertain the presence or absence of reptiles from suitable habitats within the site (specifically longer grassland and tall ruderal vegetation associated with field margins and the plantation woodland in the east of the site).
66. No reptiles were recorded during the course of the survey work undertaken in September and October 2020. As such, it is considered that the site does not support common reptiles, and no mitigation will therefore be required in respect of this group.

Amphibians

67. The site supports a number of ditches associated with hedgerows along field boundaries; however, these were all recorded as being dry at the time of survey in September 2020. Should these remain dry during the amphibian breeding season (March to June inclusive), then they would not offer any potential breeding habitats for this group.
68. The survey work identified the presence of a pond within the site boundary (at Wold Lodge; P1). A second pond is located approximately 250 metres to the west of the site boundary (P2). Both of these features were subject to HSI assessment.
69. P1 received an overall HSI score of 0.68 and is therefore initially assessed to be of 'Average' suitability to support Great Crested Newts. P2 received a HSI score of 0.7 and is therefore initially assessed to be of 'Good' suitability to support breeding Great Crested Newts.
70. Given that the presence or absence of Great Crested Newts can not be robustly determined from the HSI assessment alone, it is recommended that further surveys should be undertaken in April 2021, in the form of environmental DNA (eDNA) assessments. This would provide a firm basis upon which to submit a planning application, given the strict protection afforded to Great Crested Newts under the Habitats Regulations.

APPENDICES

APPENDIX 1

Interim Bat Survey Results

September and October 2020

21/09/2020 – 26/09/2020						
Species	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6
Common Pipistrelle	139	445	1338	662	494	165
Soprano Pipistrelle	124	172	144	255	54	46
Nathusius's Pipistrelle	3	2	9	3	4	1
Brown Long-eared	0	4	9	3	3	2
Noctule	5	16	7	2	7	10
Nyctalus sp.	5	23	3	8	2	8
Myotis	0	24	20	9	13	2
Barbastelle	1	46	7	2	12	0

15/10/2020 – 20/10/2020						
Species	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6
Common Pipistrelle	16	101	189	145	6	52
Soprano Pipistrelle	51	73	168	239	10	132
Nathusius's Pipistrelle	0	0	0	2	0	1
Brown Long-eared	1	2	7	1	0	0
Noctule	1	6	0	0	0	0
Nyctalus sp.	5	23	3	8	2	8
Myotis sp.	0	51	5	3	0	7
Barbastelle	1	96	15	19	5	12

21/09/2020			
Species	Transect 1	Transect 2	Transect 3
Common Pipistrelle	33	53	22
Soprano Pipistrelle	9	10	15
Nathusius's Pipistrelle	2	5	0
Noctule	5	1	2
Brown Long-eared	0	3	1
Myotis	0	1	1
Barbastelle	1	1	0

15/10/2020		
Species	Transect 1	Transect 2
Common Pipistrelle	2	5
Soprano Pipistrelle	5	1
Noctule	0	1
Barbastelle	0	1



- KEY:**
- SITE BOUNDARY
 - TRANSECT 1
 - TRANSECT 2
 - TRANSECT 3
 - n STATIC DETECTOR LOCATION







 ECOLOGYSOLUTIONS <small>Part of the ES Group</small>	Farncombe House Farncombe Estate Broadway Worcestershire WR12 7LJ +44(0)1451 870767 info@ecologysolutions.co.uk ecologysolutions.co.uk
---	---

8923: KETTERING EAST ENERGY PARK

BAT SURVEY PLAN	Rev: A OCT 2020
-----------------	--------------------



- KEY:**
-  SITE BOUNDARY
 -  TRANSECT 1
 -  TRANSECT 2
 -  STATIC DETECTOR LOCATION



 ECOLOGYSOLUTIONS <small>Part of the ES Group</small>	Farncombe House Farncombe Estate Broadway Worcestershire WR12 7LJ
	+44(0)1451 870767 info@ecologysolutions.co.uk ecologysolutions.co.uk

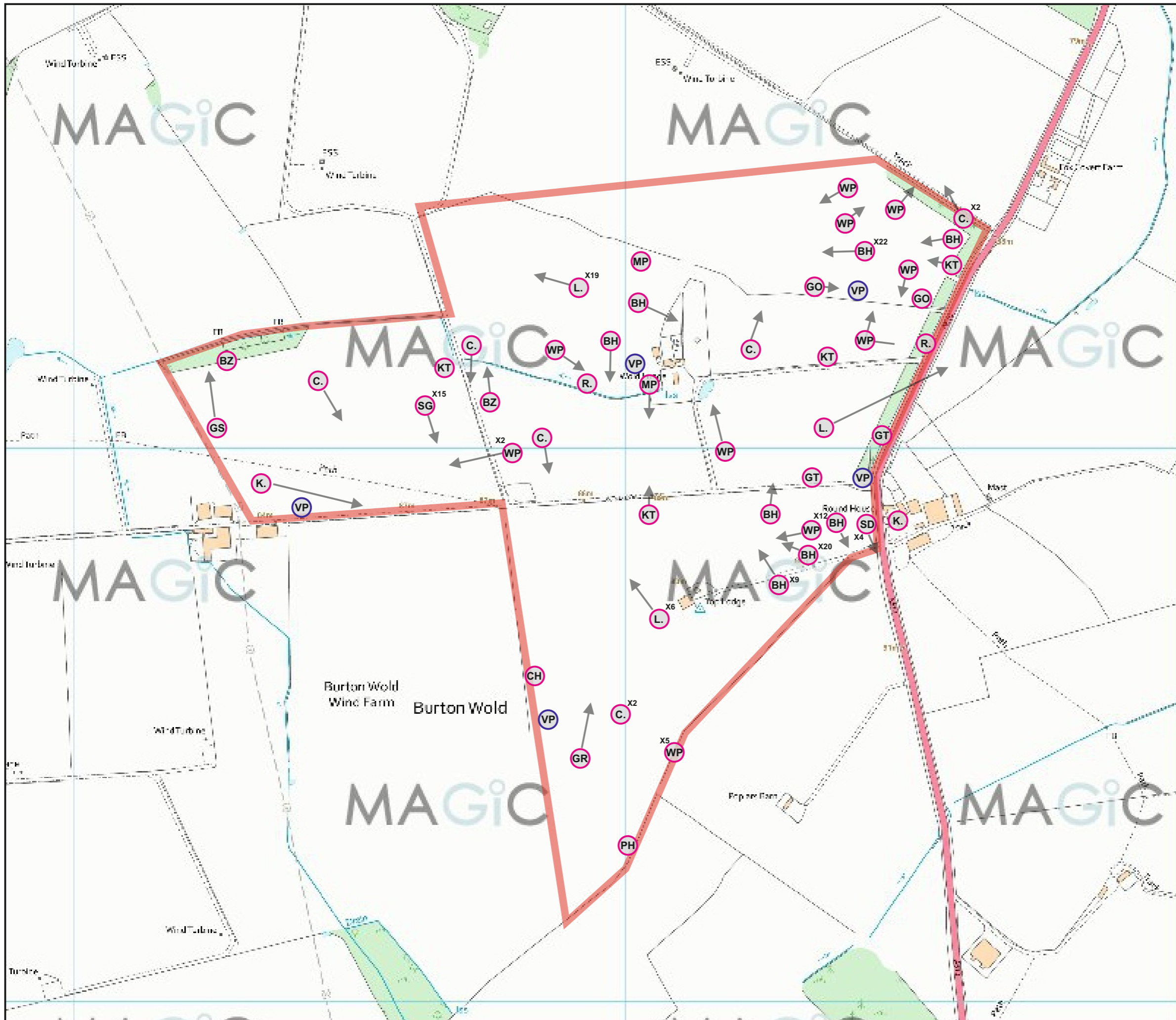
8923: KETTERING EAST ENERGY PARK

OCTOBER BAT SURVEY PLAN	Rev: A OCT 2020
-------------------------	--------------------

APPENDIX 2

Interim Wintering Bird Survey Results

November and December 2020



- KEY:**
- SITE BOUNDARY
 - BIRD SIGHTED
 - VANTAGE POINT
 - DIRECTION OF FLIGHT

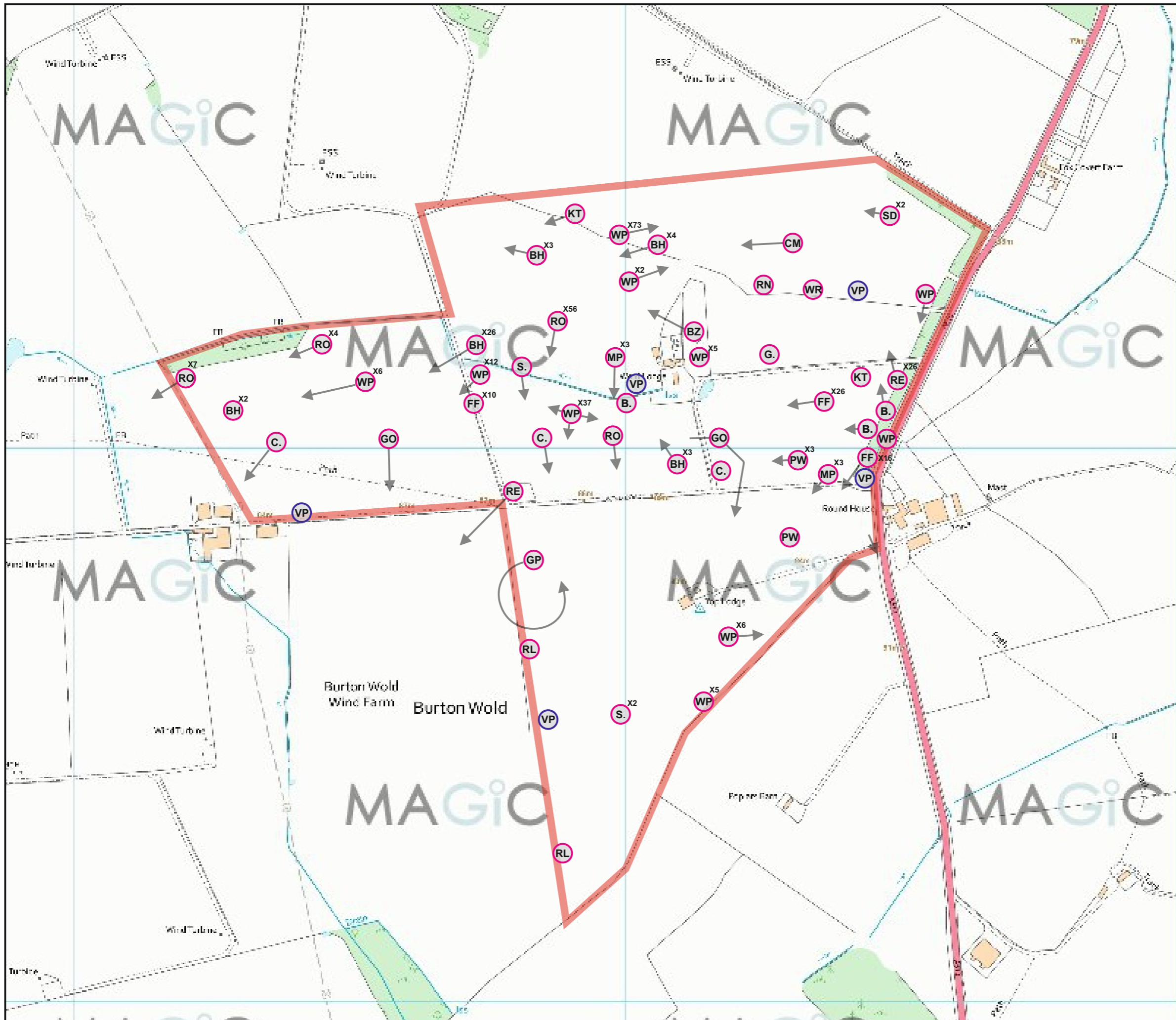
- BH BLACK HEADED GULL
- BZ BUZZARD
- C. CARRION CROW
- CH CHAFFINCH
- GO GOLDFINCH
- GR GREENFINCH
- GS GREAT SPOTTED WOODPECKER
- GT GREAT TIT
- K. KESTREL
- KT RED KITE
- L. LAPWING
- MP MEADOW PIPIT
- PH PHEASANT
- R. ROBIN
- SD STOCK DOVE
- SG STARLING
- WP WOODPIGEON



<p>ECOLOGYSOLUTIONS <small>Part of the ES Group</small></p>	<p>Farncombe House Farncombe Estate Broadway Worcestershire WR12 7LJ</p> <p>+44(0)1451 870767 info@ecologysolutions.co.uk ecologysolutions.co.uk</p>
--	--

8923: KETTERING

<p>WINTERING BIRD SURVEY NOVEMBER 2020</p>	<p>Rev: A Dec 2020</p>
--	----------------------------



KEY:

- SITE BOUNDARY
- BIRD SIGHTED
- VANTAGE POINT
- DIRECTION OF FLIGHT

- B. BLACKBIRD
- BH BLACK HEADED GULL
- BZ BUZZARD
- C. CARRION CROW
- CM COMMON GULL
- FF FIELDFARE
- G. GREY HERON
- GO GOLDFINCH
- GP GOLDEN PLOVER
- KT RED KITE
- MP MEADOW PIPIT
- PW PIED WAGTAIL
- R. ROBIN
- RE REDWING
- RL RED LEGGED PARTRIDGE
- RN RAVEN
- RO ROOK
- S. SKYLARK
- SD STOCK DOVE
- WP WOODPIGEON
- WR WREN



Farncombe House
Farncombe Estate | Broadway
Worcestershire | WR12 7LJ

+44(0)1451 870767
info@ecologysolutions.co.uk
ecologysolutions.co.uk

8923: KETTERING

WINTERING BIRD SURVEY
DECEMBER 2020

Rev: A
Dec 2020



ECOLOGYSOLUTIONS

Part of the ES Group

Ecology Solutions Limited | Farncombe House | Farncombe Estate | Broadway | Worcestershire | WR12 7LJ

01451 870767 | info@ecologysolutions.co.uk | www.ecologysolutions.co.uk