



HELIOS RENEWABLE
ENERGY
PROJECT

Preliminary Environmental Information Report

Volume 3: Technical Appendices

Appendix 8.2: Ornithological Survey
Report

Helios Renewable Energy Project
on behalf of Enso Green Holdings D Limited
Ornithological Survey Report



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1 INTRODUCTION

1.1 Project Background

1.1.1 Avian Ecology Ltd. was commissioned to undertake ornithological surveys in relation to the proposed development of a renewable energy generating project, consisting of ground-mounted solar photovoltaic ('PV') arrays, together with on-site energy storage, associated infrastructure, and grid connection (the 'Proposed Development'). The Proposed Development is located on land to the south-west of the village of Camblesforth and to the north of the village of Hirst Courtney in North Yorkshire (the 'Site').

1.1.2 The objectives of this report are to:

- Provide baseline information on the current ornithological features within the Site and Wider Survey Area (area defined below in Section 2.1);
- Identify the presence of notable bird species within the Site and Wider Survey Area; and,
- Assess the importance of the non-breeding and breeding bird assemblage which the Site and Wider Survey Area support.

1.1.3 Only common bird species names are referred to within the main text of this Appendix. A summary of all bird species recorded during the surveys or referenced within the text are presented with their scientific names and conservation status in **Annex 1**.

1.2 Site Overview

1.2.1 The Site as illustrated by the red-line boundary, shown on **Figure 1**, comprises predominantly multiple fields containing agricultural land, located at the approximate central grid reference of SE 6323 2629.

1.2.2 The Site predominantly comprises arable fields marked by a series of wet and dry ditches, species-poor hedgerows, roads, woodlands, and trees. In the wider context, the Site is surrounded by further extensive areas of farmland and areas of woodland. The most north-eastern fields within the Site (Field 374: **Figures 1 –5**) are separated from the Drax Power Station by New Road. The south-western field (Field 239: **Figures 1 –5**) is approximately 4.2km south-west of the Drax Power Station, at its closest point.

1.2.3 On review of the Multi-Agency Geographic Information for the Countryside ('MAGIC')¹ website the Site is located within 10km of the following international statutory designated sites with ornithological qualifying features:

- Lower Derwent Valley Special Protection Area ('SPA');
- Lower Derwent Valley Ramsar site;
- Humber Estuary SPA;
- Humber Estuary Ramsar site; and,
- Thorne & Hatfield Moors SPA.

1.2.4 A summary of the above sites qualifying features is presented in **Table 1.1**.

¹ available at: <https://magic.defra.gov.uk/> (accessed 14.06.2023)

Table 1.1: Designated sites with avian qualifying interests

Designation	Approximate Distance from the Site	Qualifying Features
Lower Derwent Valley SPA	6.47km north-east	<p>The site is designated for the following ornithological qualifying features:</p> <ul style="list-style-type: none"> • Bewick's swan (non-breeding); • Eurasian wigeon (non-breeding); • Eurasian teal (non-breeding); • Northern shoveler (breeding); • European golden plover (non-breeding); • Ruff (non-breeding); and, • Waterbird assemblage.
Lower Derwent Valley Ramsar site	6.55km north-east	<p>Designated under Ramsar criterion 1, 2, 4, 5 and 6.</p> <p><i>Ramsar criterion 4</i> A staging post for passage birds in spring. Of particular note are the nationally important numbers of Ruff and Whimbrel.</p> <p><i>Ramsar criterion 5</i> Wintering bird assemblages of international importance (peak counts in winter: 31,942 waterfowl (5 year peak mean 1998/99-2002/2003)).</p> <p><i>Ramsar criterion 6</i> Wintering species occurring at levels of international importance:</p> <ul style="list-style-type: none"> • Eurasian wigeon; and, • Eurasian teal
Humber Estuary SPA	6.64km east	<p>The site is designated for the following ornithological qualifying features:</p> <ul style="list-style-type: none"> • Great bittern (non-breeding and breeding); • Common shelduck (non-breeding); • Eurasian marsh harrier (breeding); • Hen harrier (non-breeding); • Pied avocet (non-breeding and breeding); • European golden plover (non-breeding); • Red knot (non-breeding); • Dunlin (non-breeding); • Ruff (non-breeding); • Black-tailed godwit (non-breeding); • Bar-tailed godwit (non-breeding); • Common redshank (non-breeding); • Little tern (breeding); and, • Waterbird assemblage.
Humber Estuary Ramsar Site	6.64km east	<p>Designated under Ramsar criterion 1, 3, 5, 6 and 8. Qualifying species listed as part of qualification under Ramsar Criterion 5 and 6 include:</p> <p><i>Ramsar criterion 5</i> Wintering bird assemblages of international importance (peak counts in winter: 153,934 waterfowl (5 year peak mean 1996/97-2000/2001)).</p> <p><i>Ramsar criterion 6</i> Species with peak counts in spring/autumn occurring at levels of international importance:</p> <ul style="list-style-type: none"> • European golden plover; • Red knot;

Table 1.1: Designated sites with avian qualifying interests

Designation	Approximate Distance from the Site	Qualifying Features
		<ul style="list-style-type: none"> • Dunlin; • Black-tailed godwit; and, • Common redshank. <p>Species with peak counts in winter occurring at levels of international importance:</p> <ul style="list-style-type: none"> • Common shelduck; • European golden plover; • Red knot; • Dunlin; • Black-tailed godwit; and, • Bar-tailed godwit.
Thorne & Hatfield Moors SPA	9.09km south	European nightjar (Breeding)

1.3 Legislation

- 1.3.1 All wild birds, their nests and eggs are, with few exceptions, protected under the Wildlife and Countryside Act 1981 (as amended)². Over eighty species or groups of species are listed under Schedule 1 of the Act, which confers special protection with increased penalties for offences committed.
- 1.3.2 Additionally, a further forty-nine bird species are listed under Section 41 of the Natural Environment and Rural Communities ('NERC') Act (2006)³, and are therefore, a material consideration within the planning process.

² Available at: <https://www.legislation.gov.uk/ukpga/1981/69> (accessed 12th June 2023)

³ Available at: <https://www.legislation.gov.uk/ukpga/2006/16/contents> (accessed 12th June 2023)

2 METHODOLOGY

2.1 Desk Study

2.1.1 A desk study was undertaken to identify any known existing features or species of ecological importance within the Site and surrounding environment.

2.1.2 The desk study has included:

- A review of the MAGIC website to identify the proximity of the Site to any national or internationally designated sites for nature conservation, designated for bird species.
- A review of existing bird records within 2km of the Site, obtained from the North & East Yorkshire Ecological Data Centre ('NEYEDC')⁴;

2.1.3 Only recent records dated from 2005 onwards were used unless historic records (pre-2005) were received from within (or within close proximity to) the Site and/or historic records were considered otherwise pertinent to the Proposed Development.

2.2 Non-breeding Bird Surveys

2.2.1 The Study Area comprised the habitats within the Site and with a 600m 'buffer zone', defined as the surrounding fields within a 600m radius of the Site boundaries, as shown in **Figure 1**.

2.2.2 A total of twelve surveys were completed between October 2021 and March 2022, with 'walk-over' surveys adopting the 'look-see' methodology (Gilbert *et al.* 1998⁵) whereby surveyors observed each field, walked the boundaries, and stopped at intervals and scanned the fields for target species with binoculars and telescope. All target species heard or seen were recorded onto base maps. The number of secondary species was recorded during the survey, although these species were not mapped.

2.2.3 Following Site boundary alterations and grid connection route planning progress, a further twelve surveys were undertaken between October 2022 and March 2023, covering all suitable open land within 600m of the proposed underground cabling corridor to the grid connection and additional land that was not covered by the previous winter's survey effort.

2.2.4 In addition, four passage bird surveys were undertaken throughout the entire Site and 600m buffer zone between April and May 2023.

2.2.5 Due to redline boundary changes that have occurred since the 2021-2022 surveys, a number of surveyed fields are now located in a 'wider survey area' outside of the 600m buffer zone. For clarity, the survey data collected within these wider survey area fields is presented within this report but not discussed further. See **Table 2.3** for field allocations for the Site, 600m buffer zone and wider survey area.

2.2.6 Target species identified consisted of wetland birds such as waders, waterfowl and gulls and Annex 1⁶/Schedule 1⁷ raptors and owls. Records were also made of secondary species, which consisted of

⁴Where listed, descriptions of non-statutory designated sites are all provided by the North & East Yorkshire Ecological Data Centre <https://www.neyedc.org.uk/>

⁵ Gilbert G, Gibbons D.W. and Evans J. (1998) *Bird Monitoring Methods*. RSPB Sandy.

⁶ Available at: <https://lists.nbnatlas.org/speciesListitem/list/dr2401> Accessed on: 20th February 2023

⁷ Available at: <https://www.rspb.org.uk/birds-and-wildlife/advice/wildlife-and-the-law/wildlife-and-countryside-act/schedules/> Accessed on: 20th February 2023

non-Annex 1/Schedule 1 raptors, notable flocks of non-wetland species, Birds of Conservation Concern (BoCC Amber and Red List species (Stanbury *et al.* 2021))⁸, Natural Environment and Rural Communities ('NERC') Act (2006) Section 41 species⁹, and Selby Local Biodiversity Action Plan¹⁰ ('LBAP') species.

- 2.2.7 All target species observed in flight only were also recorded and data is presented within this report.
- 2.2.8 Suitable habitats for target species surveyed included arable/pasture fields and associated boundary features. Habitats, such as woodland and scrubland were considered unsuitable for target species and thus were omitted from the survey. Waterbodies were included in the survey area given their suitability to support target species. Land within the buffer zone and wider survey area was surveyed from public rights of way ('PRoWs') and access tracks, where possible.
- 2.2.9 All surveys were undertaken during daylight hours and the Site was surveyed over a range of tidal states to account for any potential dispersal of birds associated with the Humber Estuary SPA and Ramsar.
- 2.2.10 Field surveys were undertaken by a suitably qualified (MSc ACIEEM) ornithologist, who has at least 35 years of ornithological experience.
- 2.2.11 Survey effort is presented below in **Table 2.1**. Full breakdown of survey conditions are presented in **Annex 1.2**.

Table 2.1: Non-breeding Bird Survey Effort (Winter 2021-2022)

Survey Visit	Date	Start Time (24hrs)	End Time (24hrs)	High ¹¹ Tide (24hrs)	High Tide (m)	Survey Conditions
1	13/10/2021	10:15	14:00	13:19	4.4	Dry, overcast, light westerly breeze (3 on the Beaufort Scale), good visibility.
	14/10/2021	10:15	15:00	14:58	3.68	
2	27/10/2021	08:00	14:00	11:51	3.92	Dry with occasional light shower on 27 th October 2021, overcast, light south westerly breeze (3 on the Beaufort Scale), good visibility.
	28/10/2021	09:00	13:00	13:07	3.47	
3	11/11/2021	09:15	15:00	12:12	4.17	Dry with light shower on 12 th November 2021, overcast, light southerly breeze to stiff south westerly breeze (1-4 on the Beaufort Scale), good visibility.
	12/11/2021	10:45	16:40	13:38	3.84	
4	24/11/2021	07:45	13:00	09:46	4.4	Dry, overcast (broken cloud), gentle south westerly breeze (1 on the Beaufort Scale), good visibility.
	25/11/2021	07:30	12:15	10:36	4.06	
5	08/12/2021	08:00	12:50	09:51	5.34	Mostly dry with some heavy showers on 8 th December 2021, overcast with broken

⁸ Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. 2021. The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* 114: 723-747

⁹ Available at: <https://www.legislation.gov.uk/ukpga/2006/16/section/41> Accessed on: 20th February 2023

¹⁰ Available at: <https://www.selby.gov.uk/sites/default/files/Documents/Biodiversity%20Action%20Plan%20Aug%202004.pdf> Accessed on: 08th June 2023

¹¹ Available at: <https://www.tidetimes.org.uk/goole-tide-times> Accessed on: 31st May 2023

Survey Visit	Date	Start Time (24hrs)	End Time (24hrs)	High ¹¹ Tide (24hrs)	High Tide (m)	Survey Conditions
	09/12/2021	08:00	13:50	10:51	4.88	cloud, stiff south westerly breeze (3-4 on the Beaufort Scale), good visibility.
6	22/12/2021	08:00	11:50	08:53	4.7	Dry, sunny (22 nd December 2021), broken cloud (23 rd December 2021), light south easterly breeze (1-2 on the Beaufort Scale), good visibility.
	23/12/2021	08:00	11:30	09:34	4.57	
7	13/01/2022	13:30	16:40	16:17	4.04	Dry, overcast (broken cloud), gentle south westerly breeze (1 on the Beaufort Scale), good visibility.
	14/01/2022	14:10	16:40	17:09	4.24	
8	27/01/2022	11:40	16:40	14:40	4.11	Dry, sunny, and partial cloud, moderate south westerly and north westerly breeze (3 on the Beaufort Scale), good visibility.
	28/01/2022	12:40	17:00	15:41	4.25	
9	07/02/2022	08:40	13:40	11:38	4.46	Dry, overcast (broken cloud), gentle south westerly breeze (3-4 on the Beaufort Scale), good visibility.
	08/02/2022	09:30	13:30	12:26	4.09	
10	23/02/2022	08:30	14:30	11:30	4.52	Dry, overcast (broken cloud), strong south westerly breeze (5-7 on the Beaufort Scale), good visibility.
	24/02/2022	10:00	15:00	12:31	4.11	
11	10/03/2022	09:30	14:00	12:14	3.91	Dry, overcast (and broken cloud), gentle south easterly breeze (3-4 on the Beaufort Scale), good visibility.
	11/03/2022	10:30	15:00	13:18	3.57	
12	23/03/2022	07:16	13:16	10:16	5.11	Dry, clear, and sunny, gentle south and south westerly breeze (1 on the Beaufort Scale), good visibility.
	24/03/2022	09:00	13:30	11:05	4.63	

2.2.12 Due to the changes in the redline boundary and proposed grid connection routes, additional areas were surveyed between October 2022 and March 2023. Survey effort for these surveys are presented below in **Table 2.2**. Additional areas surveyed incorporated fields: 32, 36, 91-99, 218, 251, 255, 330 and 355-377 using identical methodology to that detailed above.

Table 2.2: Non-breeding Bird Survey Effort (Winter 2022-2023)

Survey Visit	Date	Start Time (24hrs)	End Time (24hrs)	High ¹² Tide (24hrs)	High Tide (m)	Survey Conditions
1	20/10/2022	14:00	17:30	16:59	3.51	Heavy rain, overcast, light south westerly breeze (3 on the Beaufort Scale), good visibility.

¹² Available at: <https://www.tidetimes.org.uk/goole-tide-times> Accessed on: 31st May 2023

Survey Visit	Date	Start Time (24hrs)	End Time (24hrs)	High ¹² Tide (24hrs)	High Tide (m)	Survey Conditions
2	27/10/2022	08:00	11:30	08:48	5.95	Light showers, overcast, light south easterly breeze (3 on the Beaufort Scale), good visibility.
3	08/11/2022	07:00	10:00	06:44	5.59	Dry, overcast, light southerly breeze (3 on the Beaufort Scale), good visibility.
4	22/11/2022	07:45	10:45	05:29	5.05	Dry, broken cloud, light north westerly breeze (3 on the Beaufort Scale), good visibility.
5	15/12/2022	12:00	16:00	12:00	3.83	Dry and clear, light north westerly breeze (2 on the Beaufort Scale), good visibility. Thick frost.
6	29/12/2022	11:00	15:00	12:04	4.63	Dry and mostly overcast with sunnier spells, light south westerly breeze (3-4 on the Beaufort Scale), good visibility.
7	12/01/2023	10:00	14:00	10:30	4.44	Dry, sunny spells and broken cloud, gentle south westerly breeze (2 on the Beaufort Scale), good visibility.
8	26/01/2023	10:00	13:45	10:38	5.26	Dry, sunny with scattered cloud, light northerly breeze (3 on the Beaufort Scale), good visibility.
9	09/02/2023	09:00	13:30	09:24	4.92	Dry, Scattered cloud, light south westerly breeze (3-4 on the Beaufort Scale), good visibility.
10	28/02/2023	10:30	14:00	13:16	3.70	Light showers, overcast and light north easterly breeze (2 on the Beaufort Scale), good visibility.
11	29/03/2023	11:45	15:30	13:28	3.79	Light shower, but mostly dry, overcast, gentle southerly breeze (2 on the Beaufort Scale), good visibility.
12	31/03/2023	13:00	17:00	15:54	3.35	Dry with light shower, overcast, gentle north easterly breeze (2-3 on the Beaufort Scale), good visibility.

2.2.13 Passage surveys of the entire Site and buffer zone where also undertaken during April and May 2023. Survey effort for these surveys are presented below in **Table 2.3**.

Table 2.3: Non-breeding Bird Survey Effort (Spring Passage 2024)

Survey Visit	Date	Start Time (24hrs)	End Time (24hrs)	High Tide (24hrs)	High Tide (m)	Survey Conditions
1	20/04/2023	07:20	11:20	08:21	5.52	Dry, sunny with scattered cloud, gentle north easterly breeze (2 on the Beaufort Scale), good visibility.
	21/04/2023	06:50	10:30	08:54	5.53	Dry with light shower, overcast, light north easterly breeze (3 on the Beaufort Scale), good visibility.
2	28/04/2023	12:00	14:00	14:00	3.58	Dry, overcast, gentle northerly air (1 on the Beaufort Scale), good visibility.

Survey Visit	Date	Start Time (24hrs)	End Time (24hrs)	High Tide (24hrs)	High Tide (m)	Survey Conditions
	29/04/2023	13:00	17:00	15:12	3.41	Light shower but mostly dry, overcast to scattered cloud, gentle south westerly air (1 on the Beaufort Scale), good visibility.
3	09/05/2023	07:45	12:30	10:07	5.42	Dry, scattered to predominant cloud, gentle south westerly air to gentle north westerly breeze (1 to 2 on the Beaufort Scale), good visibility.
	10/05/2023	08:45	12:30	10:53	5.08	Dry with light shower, clear skies to overcast, light westerly air (1 on the Beaufort Scale), good visibility.
4	24/05/2023	08:45	13:00	10:52	4.84	Dry and sunny with light north easterly air (0-1 on the Beaufort Scale), good visibility.
	25/05/2023	09:30	13:30	11:38	4.53	Dry and sunny (scattered cloud) with light north easterly air (0-1 on the Beaufort Scale), good visibility.

2.2.14 For ease of interpreting the survey results, fields within the entire survey area were numbered 1-377, and the fields with the Site, buffer zone and in the wider survey area are shown separately in **Table 2.4** and on **Figure 1**.

Table 2.4: Field Allocations for the Site, Buffer Zone and Wider Survey Area

Area	Field Number Range
The Site	5-12, 14-25, 27-29, 33, 38, 182-183, 198-199, 201-204, 222-223, 226-229, 232, 234-236, 238-239, 269.
600m Buffer Zone	1-4, 13, 26, 30-32, 34-37, 39-51, 56-57, 59, 62, 65, 69-71, 74-91, 93-119, 121-162, 164, 166-181, 184-197, 200, 205-207, 214, 221, 224-225, 230-231, 233, 237, 240-250, 252-253, 255-261, 267-268, 270-274, 278, 282-283, 296-322, 330-341, 358-365, 367-377
Wider Survey Area	52-54, 58, 60-61, 63-64, 66-68, 72-73, 92, 120, 163, 165, 208-213, 215-220, 251, 254, 262-266, 275-277, 279-281, 284-295, 323-329, 342-357 and 366.

2.2.15 The aim of the non-breeding bird surveys is to ascertain whether the Site (and adjacent habitats, within 600m) are functionally linked to Lower Derwent Valley SPA, Lower Derwent Valley Ramsar site, Humber Estuary SPA and Humber Estuary Ramsar site (**Table 1.1**). The most recent population estimates (5-year average) for these sites are taken from the BTO WeBS website¹³.

2.2.16 Some Target Species are qualifying features of the above named statutory designated sites, alone, under Article 4.1 or 4.2 of the Directive, and others collectively make up a qualifying waterbird assemblage, under Article 4.2 of the SPA citations. For those species which are, alone, qualifying species, the peak number was compared to the population estimate for the SPA and other considerations have been made, with regards to whether the fields are functionally linked to the SPA, for example, the frequency in which the fields supported the target species. Further information is provided below. Thorne & Hatfield Moors SPA has been discounted from this analysis of functional linkage due to distance from the SPA and the qualifying species (nightjar) only being designated as a

¹³ The population estimates can be found on the WeBS page of the BTO website, and is available at: <https://app.bto.org/webs-reporting/> (accessed 16.05.2023)

breeding species within specific habitat associated with the designated Site (lowland raised bog) not present within the Site and surrounding land.

Criteria for Significance

- 2.2.17 A report by Natural England (2021¹⁴) investigated the threshold whereby the functional link between species associated with an SPA and those habitats outside of the SPA land. The report concluded that a 'functional link' occurs between an SPA and external habitat if a species count associated with an SPA regularly exceeds either 0.5% of the British population (generally wintering population) or more than 1000 individuals for a total of 2/3rds of the survey visits.
- 2.2.18 The Natural England report determines that regular usage is defined as being used by significant numbers of birds (based on the criteria above) for seven or more years since 2010. Clearly this is not compatible with the wintering bird surveys undertaken; however, the Natural England report further states that Stroud *et al.* (2001)¹⁵ define 'regular' as when a threshold is met in two thirds of the season for which adequate data is available.
- 2.2.19 For those species which are only part of a qualifying assemblage (so are not individually a qualifying species), one of three thresholds would need to be reached to appraise the specific study area as being potentially functionally linked to the SPA for that species. These are:
- 1% of each and every listed species that make up the assemblage;
 - 1%, or more, of the designated species nationally important population; or,
 - Over 2000 birds of the at species.
- 2.2.20 Great Britain population data for this report has been derived from BTO Wetland Bird Survey (WeBS) reports, which are available online¹⁶. The most recently available WeBS report covers the winter of 2021/2022 and therefore does not directly correlate with the most recent field survey data available (2022/2023). Whilst this is acknowledged, WeBS population data are based on trends over data and therefore the absence of 2021/2022 national data is not considered a significant limitation to analysis.

2.3 Breeding Bird Survey

- 2.3.1 Breeding bird surveys were undertaken between April and June 2021, with one survey undertaken each month (total of three surveys). Following the first survey in April 2021, the Site boundary was extended in two areas. An additional survey on 29th May 2021 was therefore undertaken in these two areas of extension to the Site, hereby referred to as the 'Supplementary Survey', as illustrated in **Figure 8**. Data from the Supplementary Survey was incorporated into the April 2021 survey results (**Figure 8**). May and June 2021 surveys were conducted within the entire updated Site boundary (**Figures 9 and 10**).
- 2.3.2 Since the completion of the 2021 surveys, the Site boundary has been subject to changes, therefore breeding bird surveys of these additional areas (including the underground cabling corridor to the grid connection) were undertaken between April and June 2023.
- 2.3.3 Surveys were carried out from early morning and finished by 11:00hrs and undertaken in conditions suitable for breeding bird surveys (avoiding heavy rain and strong winds). Breeding bird surveys were

¹⁴ Bowland Ecology (2021). *Identification of Functionally Linked Land supporting SPA waterbirds in the North West of England*. NERC361. Natural England

¹⁵ Stroud, D.A., Chambers, D., Cook, S., Buxton, N., Fraser, B., Clement, P., Lewis, P., McLean, I., Baker, H. & Whitehead, S. (eds). 2001. *The UK SPA network: its scope and content*. JNCC, Peterborough, p56.

¹⁶ Available at: <https://www.bto.org/our-science/projects/wetland-bird-survey/data> (accessed 15.06.2023)

carried out within the Site, including an additional 100m buffer recorded from within the Site; as shown on **Figures 8-10**.

2.3.4 Breeding bird surveys were undertaken by a suitably qualified (MSc ACIEEM) ornithologist, who has at least 35 years of ornithological experience.

2.3.5 The methodology employed was based upon a scaled-down version of the British Trust for Ornithology ('BTO') Common Bird Census ('CBC') technique, as detailed in Gilbert *et al.* (1998¹⁷). All bird registrations were recorded on suitably scaled field maps using standard BTO species codes and behaviour notations (such as singing, carrying food, and active nesting). The approximate locations of bird territories within the Site and 100m buffer were determined using standard territory mapping techniques to identify and isolate areas within which birds consistently displayed breeding behaviours (following Gilbert *et al.* 1998). The territory mapping method is based on the observation that many species during the breeding season are territorial. This is most marked in passerines¹⁸, where territories are often determined by conspicuous song, display and territorial disputes with neighbouring conspecifics¹⁹. The expected outcome of this technique is that mapped registrations fall into clusters, approximately coinciding with territories. Records of birds only visiting the Site (e.g., gulls feeding in fields) and birds in flight only, were also made and the records of these summarised. However, these have been discounted from further analysis, given they are not breeding within the Site (and 100m buffer) and are therefore not considered relevant to the assessment.

2.3.6 For the purposes of informing the assessment process, although the estimated number of breeding territories for all species is provided, only the breeding territories of notable species are mapped, given these are the most relevant species to the assessment. Notable species consist of Birds of Conservation Concern (BoCC Amber and Red List Species (Stanbury *et al.* 2021), Annex 1 raptors and owls, Schedule 1 species, birds listed on Section 31 of the NERC Act and Selby LBAP species.

2.3.7 Details of the surveys are presented in **Table 2.3 and Table 2.4**.

Table 2.3: Breeding Bird Survey Effort - 2021

Survey number	Date	Start time (24hrs)	End time (24hrs)	Sunrise (24hrs)	Survey conditions
1	26/04/2021	07:00	11:00	05:38	Clear to overcast, with a light breeze and no rain. Good visibility. Temperature 4-9°C.
	27/04/2021	07:00	11:00	05:36	
	28/04/2021	07:00	11:00	05:34	
2	19/05/2021	07:00	11:00	04:56	Clear to overcast, with a light breeze. No rain to slight drizzle. Good visibility. Temperature 8-9°C.
	20/05/2021	07:00	11:00	04:54	
	21/05/2021	07:00	11:00	04:53	
	27/05/2021	07:00	11:00	04:45	
3	21/06/2021	07:00	10:00	04:33	Partial cloud to overcast, with a light breeze and no rain. Good visibility. Temperature 12-14°C.
	28/06/2021	07:00	11:00	04:36	
	29/06/2021	07:00	10:30	04:36	
	30/06/2021	07:00	10:30	04:37	
Supplementary Survey	29/05/2021	07:00	11:00	04:43	Cloudy with a light breeze and no rain. Good visibility. Temperature 11°C.

¹⁷ Gilbert, G., Gibbons, D.W & Eans, J. (1998) *Bird monitoring methods*. A manual of techniques for key UK species. RSPB.

¹⁸ A passerine is any bird of the order Passeriformes, which includes more than half of all bird species. Sometimes known as perching birds, passerines are distinguished from other orders of birds by the arrangement of their toes, which facilitates perching.

¹⁹ a member of the same species.

Table 2.4: Breeding Bird Survey Effort - 2023

Survey number	Date	Start time (24hrs)	End time (24hrs)	Sunrise (24hrs)	Survey conditions
1	24/04/2023	06:00	09:00	05:44	Overcast, with a light breeze and no rain. Good visibility. Temperature 5-8°C.
2	11/05/2023	06:00	10:00	05:10	Scattered cloud, with light air. No rain to light showers. Good visibility. Temperature 10-13°C.
3	05/06/2023	05:30	09:00	04:37	Cloudy with light air and no rain. Good visibility. Temperature 7-13°C.

Limitations

Non-breeding Bird Survey

2.3.8 Non-breeding bird surveys were undertaken between October 2021 and March 2022 and October 2022 and May 2023 which is within the period considered suitable to survey wintering and passage bird species. All fields within the Site were accessed and if direct land access was not available within the buffer zone and wider survey area, observations were made via PROWs and roads. All fields were observed during the survey period.

2.3.9 Non-breeding bird surveys are considered to represent a snapshot in time whereby it is accepted that some birds that use the Site, buffer zone or wider survey area may not be present during the duration of the surveys. In addition, it is accepted that cropping regime and human disturbance through agricultural activities may change the species composition using the Site, buffer zone and wider survey area during the non-breeding bird survey period.

Breeding Bird Survey

2.3.10 Breeding bird surveys undertaken in April 2021 did not initially include two areas subject to an increase in the extent of the Site in May 2021. To facilitate three surveys in these two additional areas, a supplementary survey was conducted on 29th May 2021, with the data incorporated into the April 2021 survey results. Although these two areas were not surveyed in April 2021, it is considered that this is not a significant limitation to the survey results, as all species would have been captured during the survey period, with the breeding season for species also including May. As these areas are also small in relation to the remainder of the Site, and with such areas still subject to three comprehensive surveys with the inclusion of a Supplementary Survey, it is considered that no significant limitation is derived from the amended Site boundary following April 2021.

2.3.11 The results of the surveys are only a snapshot in time of the habitat use and activity of the bird assemblage within the Site and buffer zone; however, the surveys have provided indicative evidence of the breeding bird assemblages.

2.3.12 It is appreciated that factors, including cropping regime/ land use and disturbance will influence habitat use within the Site by birds. It is an assumption that the cropping regime / land use during the survey period is typical. No significant disturbance events were recorded during the surveys. Disturbance such as agricultural activities, traffic and pedestrians along roads/ProWs were recorded. However, such events are not considered significant in terms of having an influence on the target bird species when regarding the survey period in its entirety and as such are not considered further in this assessment.

2.3.13 Access was permitted to all parts of the Site during all surveys.

3 RESULTS

3.1 Desk Study

- 3.1.1 The NEYEDC data search returned numerous records of notable bird species within 2km of the Site, including a variety of priority species commonly associated with the farmland and woodland habitats surrounding the Site. No records were returned within the Site itself.
- 3.1.2 Since 2005, the data search returned 140 records for 60 bird species within the search area, including a total of forty-four notable bird species within 2km of the Site. This includes seven species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). Schedule 1 species returned during the data search include little ringed plover, marsh harrier, barn owl, kingfisher, peregrine, redwing and fieldfare. Historic Schedule 1 species returned include whooper swan and hobby.
- 3.1.3 The data return also included three species listed on Annex 1 of the Directive 2009/147/EC (Birds Directive). These species include marsh harrier, kingfisher and peregrine. Historical Annex 1 species returned include whooper swan only.
- 3.1.4 Seventeen NERC Act Section 41 Species are included in the NEYEDC data return. Species include lesser redpoll, skylark, cuckoo, corn bunting, yellowhammer, reed bunting, herring gull, linnet, spotted flycatcher, tree sparrow, grey partridge, marsh tit, dunnock, bullfinch, starling, song thrush and lapwing. Historical records include nine priority species. Historical species returned include grey partridge, cuckoo, turtle dove, curlew, skylark, song thrush, spotted flycatcher, yellowhammer and reed bunting.
- 3.1.5 Nine species returned in the data search since 2005 are further listed as priority species under the Selby Biodiversity Action Plan. This includes skylark, corn bunting, yellowhammer, snipe, linnet, tree sparrow, grey partridge, starling and barn owl. Historical local priority species returned in the data search also include whooper swan, lapwing, turtle dove and redshank.
- 3.1.6 Recent records from the data search returned eighteen species listed as Red Listed BoCC and twenty-two species listed as Amber Listed BoCC.
- 3.1.7 A review of MAGIC shows that the Site is not allocated as an Important Bird Area ('IBA'). Two IBAs are situated within 10km of the Site. This includes Lower Derwent Valley IBA and Thorne and Hatfield Moors IBA, which are respectively located c. 6.47km north-east and c. 9.09km south-east from the Site.

3.2 Non-breeding Bird Surveys

2021-2022 Wintering Bird Surveys

The Site

- 3.2.1 Activity within the Site remained low throughout the survey period, with target species being limited to sporadic small flocks. Lapwings were recorded in field 25 in eight of the twelve survey visits, with a maximum flock size of 72 birds in February 2022, and in Field 234 during two of the twelve survey visits, with a maximum flock size of 92 birds in October 2021. Additional Target Species recorded comprised: pink-footed geese (in-flight only), mallard, little egret, grey heron, little grebe, golden plover (maximum of two birds), and common gull.
- 3.2.2 Secondary species comprised modest numbers of buzzard, kestrel, mistle thrush, starling and corn bunting, all species typical of farmland habitats in the wider landscape. Results are presented below

in Table 3.1. The indicative locations of target species are provided in **Figures 1-5: Non-breeding Bird Survey Results**.

Table 3.1: Target and Secondary Species recorded within the Site.

Field N°	Species	Survey Visits											
		1	2	3	4	5	6	7	8	9	10	11	12
Target Species													
7	Little egret	-	-	1	-	-	-	-	-	-	-	-	-
17	Little grebe	-	-	-	-	-	-	1	-	1	-	-	-
	Mallard	-	-	-	-	-	-	-	-	2	-	-	-
18	Grey heron	-	-	-	1	-	-	-	-	-	-	-	-
	Lapwing	-	-	-	-	-	-	2	-	-	-	-	-
25	Lapwing	1	8	-	52	47	53	65	61	72	-	-	-
	Golden plover	-	-	-	-	-	-	-	-	2	-	-	-
	Pink-footed goose	-	-	-	-	-	(250)	-	-	-	-	-	-
	Common gull	-	-	-	-	-	-	-	-	-	-	33	-
29	Lapwing	118	-	-	-	-	-	-	-	-	-	-	-
198	Mallard	-	-	-	-	-	-	-	-	-	-	-	1
199	Pink-footed goose	-	-	(48)	-	-	-	-	-	-	-	-	-
	Little egret	-	-	-	-	-	(2)	-	-	-	-	-	-
201	Lapwing	-	-	-	-	4	-	-	-	-	-	-	-
202	Lapwing	-	-	-	-	-	-	4	-	-	-	-	-
203	Little egret	-	-	-	1	1	-	1	-	-	-	-	-
222	Lapwing	-	8	6	-	-	2	-	-	-	-	-	-
226	Mallard	-	-	-	4	-	3	-	-	-	2	-	-
	Pink-footed goose	-	-	-	-	-	-	(120)	-	-	-	-	-
	Lapwing	-	-	-	-	-	-	-	2	-	2	4	-
228	Mallard	-	-	-	-	-	-	-	-	-	-	-	3
234	Lapwing	92	55	-	-	-	-	-	-	-	-	-	-
	Pink-footed goose	-	-	-	-	(12)	-	-	-	-	-	-	-
235	Pink-footed goose	-	(72)	-	-	-	-	-	-	-	-	-	-
Secondary Species													
5	Corn bunting	-	-	-	-	-	-	-	-	8	-	-	-
10	Buzzard	-	-	-	-	-	-	-	-	(4)	-	-	-
23	Mistle thrush	-	-	-	-	-	-	-	-	-	1	-	-
25	Starling	-	-	-	-	-	-	-	270	450	-	-	-
27	Buzzard	-	-	-	-	-	-	-	-	-	-	-	1
198	Corn bunting	-	-	3	1	-	-	4	-	-	-	-	-

Field N°	Species	Survey Visits												
		1	2	3	4	5	6	7	8	9	10	11	12	
204	Starling	-	-	-	-	-	-	-	-	-	-	250	-	-
226	Corn bunting	-	-	2	-	-	-	-	-	-	-	-	-	-
228	Buzzard	-	-	-	-	-	-	-	-	-	-	-	(1)	-
234	Corn bunting	-	-	-	-	-	-	-	-	-	-	-	-	1
235	Starling	-	-	-	-	-	-	-	250	-	-	-	300	-
235	Kestrel	-	-	-	-	-	-	-	(1)	-	-	-	-	-

'-' refers to no observation in this field during that specific survey.
Numbers in brackets refers to flocks or individual birds seen in flight only.

600m Buffer Zone

- 3.2.3 The 600m Buffer Zone similarly supported generally low numbers of target species sporadically spread across fields. Within fields, target species consisted of pink-footed goose (110 in Field 194 on one occasion), mallard, little grebe, little egret, oystercatcher, lapwing, peregrine and merlin.
- 3.2.4 Additionally, target species were recorded with more regularity on the lake within Field 339, these consisted of mute swan, greylag goose, shoveler, teal, gadwall, mallard, wigeon, tufted duck, pochard, goldeneye, coot, great crested grebe, little grebe and cormorant.
- 3.2.5 Secondary species included species typical of farmland habitats and adjacent wetland habitats including buzzard and corn bunting. Results are presented below in **Table 3.2**.

Table 3.2: Target and Secondary Species recorded in the 600m Buffer Zone

Field N°	Species	Survey Visits												
		1	2	3	4	5	6	7	8	9	10	11	12	
Target species														
2	Mallard	-	-	-	-	2	-	-	-	-	-	-	-	-
37	Pink-footed goose	-	-	-	(27)	-	-	-	-	-	-	-	-	-
47	Pink-footed goose	-	-	-	-	-	-	-	-	(120)	-	-	-	-
59	Merlin	-	-	-	-	-	-	-	-	-	1	-	-	-
	Oystercatcher	-	-	-	-	-	-	-	-	-	-	-	2	-
169	Lapwing	-	-	-	-	-	-	-	-	-	-	-	3	-
171	Mallard	-	-	-	-	-	4	-	-	-	-	-	-	-
175	Lapwing	-	2	-	-	-	-	-	-	-	-	-	-	-
177	Peregrine	-	-	-	-	-	-	-	-	-	1	-	-	-
190	Lapwing	-	-	-	-	-	-	-	-	-	-	-	2	-
191	Lapwing	-	4	-	-	-	-	-	-	2	-	-	-	-
194	Pink-footed goose	-	110	-	-	-	-	-	-	-	-	-	-	-
196	Little egret	-	-	-	1	-	-	-	-	-	-	-	-	-
	Lapwing	-	-	-	-	-	-	-	-	-	-	-	5	-
200	Little egret	-	-	-	-	-	-	2	-	-	-	1	-	-
249	Lapwing	-	-	2	-	-	-	-	-	-	-	-	-	-

Field N°	Species	Survey Visits											
		1	2	3	4	5	6	7	8	9	10	11	12
252	Pink-footed goose	-	-	-	-	-	(120)	-	-	-	-	-	-
259	Pink-footed goose	-	-	-	-	-	-	-	-	(72)	-	-	-
Pond (100)	Mallard	-	-	-	2	-	-	-	3	-	-	-	-
Pond (103)	Mallard	-	-	2	-	-	-	-	2	-	-	-	-
	Little grebe	-	-	1	-	-	-	-	1	-	-	-	-
Lake (339)	Mute swan	3	2	4	2	3	1	3	2	2	3	3	3
	Greylag goose	-	-	-	-	-	-	-	-	-	-	-	1
	Shoveler	-	4	-	-	-	8	-	-	-	2	5	4
	Teal	-	-	-	-	-	12	-	12	21	3	-	-
	Gadwall	49	58	62	58	52	52	41	58	64	3	2	6
	Mallard	52	37	27	25	41	27	22	17	25	12	2	-
	Wigeon	-	-	-	67	62	73	63	72	63	-	-	-
	Tufted duck	12	17	12	17	27	-	18	11	18	5	18	12
	Pochard	-	-	1	1	6	-	2	-	-	-	-	-
	Goldeneye	-	-	-	1	2	2	2	-	2	-	-	-
	Coot	8	12	-	-	-	-	-	-	-	-	-	-
	Great crested grebe	-	-	-	-	-	-	-	-	-	-	2	2
	Little grebe	-	-	-	-	-	-	1	-	-	-	-	-
Cormorant	-	-	-	-	-	5	-	-	-	1	2	-	
Secondary Species													
1	Buzzard	-	-	-	-	-	-	-	-	-	-	1	-
43	Corn bunting	-	-	-	-	-	-	-	-	-	2	-	-
230	Buzzard	-	-	-	-	-	-	-	-	-	-	-	2
Lake (339)	Canada goose	-	-	8	-	6	-	-	-	-	1	4	3
'-' refers to no observation in this field during that specific survey. Numbers in brackets refers to flocks or individual birds seen in flight only.													

Wider Survey Area

- 3.2.6 The results of surveys within the wider survey area (located outside of the 600m buffer zone) will not be discussed further within this report. However, the observations of Target and Secondary Species recorded during surveys is presented below for clarity.
- 3.2.7 Target Species consisted of mallard, lapwing, golden plover and hen harrier.
- 3.2.8 Secondary species included species typical of adjacent wetland habitats including corn bunting and kestrel. Results are presented below in **Table 3.3**.

Table 3.3: Target and Secondary Species recorded in the Wider Survey Area

Field N°	Species	Survey Visits												
		1	2	3	4	5	6	7	8	9	10	11	12	
Target species														
60	Lapwing	-	-	-	-	8	-	-	-	-	-	22	-	-
	Golden plover	-	-	-	-	-	-	-	-	-	-	2	-	-
	Hen harrier	-	-	-	-	-	(1)	(1)	-	-	-	-	-	-
277	Mallard	-	-	-	-	-	-	-	-	-	-	2	-	-
293	Lapwing	-	-	-	-	-	-	-	-	-	-	-	-	13
Secondary Species														
68	Corn bunting	-	-	-	-	-	-	-	-	-	-	-	-	1
165	Kestrel	-	-	-	-	-	-	-	-	-	-	-	-	1
'-' refers to no observation in this field during that specific survey. Numbers in brackets refers to flocks or individual birds seen in flight only.														

2022-23 Wintering Bird Surveys

The Site

3.2.9 No Target Species or Secondary Species were recorded within the Site during 2022-2023 Wintering Bird Surveys.

3.2.10 The indicative locations of Target Species are provided in **Figures 6-7: Non-breeding Bird Survey Results 2022-23**.

600m Buffer Zone.

3.2.11 Within the 600m Buffer Zone, a total of 16 target species were recorded during the 2022-23 survey period. Target species consisted of greylag goose, pink-footed goose (in flight only), mallard, grey heron, little egret, cattle egret (in flight only), moorhen, coot, oystercatcher, lapwing, snipe, woodcock, common gull, herring gull (in flight only), marsh harrier and merlin.

3.2.12 Flock sizes of all grounded birds exceeding 20 birds consisted of one flock of lapwing (28 birds) in Field 255 and one flock of common gull (39 birds) in Field 358.

3.2.13 Secondary species included: Canada goose, grey partridge, buzzard, sparrowhawk, kestrel, skylark, rook, meadow pipit, redwing, fieldfare, starling and yellow wagtail.

Table 3.4: Target and Secondary Species recorded in the 600m Buffer Zone

Field N°	Species	Survey Visits												
		1	2	3	4	5	6	7	8	9	10	11	12	
Target species														
91	Little egret	-	-	-	-	-	-	-	-	-	-	-	(1)	-
94	Pink-footed goose	-	(64)	-	-	-	-	-	-	-	-	-	-	-

Field N°	Species	Survey Visits											
		1	2	3	4	5	6	7	8	9	10	11	12
	Greylag goose	-	-	-	-	-	-	-	-	(6)	-	12	-
	Lapwing	-	-	-	-	-	-	-	2	-	-	-	-
95	Grey heron	-	-	-	-	-	(1)	-	-	-	-	-	-
	Oystercatcher	-	-	-	-	-	-	-	-	-	-	-	(1)
	Lapwing	-	-	-	(18)	-	-	-	-	-	-	-	-
97	Pink-footed goose	-	(21)	-	-	-	-	-	-	-	-	-	-
	Mallard	-	-	-	-	-	-	-	-	(2)	-	-	-
98	Pink-footed goose	-	-	(16)	-	-	-	-	-	-	-	-	-
	Lapwing	-	-	-	-	-	-	-	-	-	-	-	(6)
244	Pink-footed goose	-	(163)	-	-	-	-	-	-	-	-	-	-
	Lapwing	-	-	-	2	-	-	-	-	-	-	-	-
255	Lapwing	-	-	-	-	28	-	-	-	-	-	-	1
355	Pink-footed goose	(30)	-	-	-	-	-	-	-	-	-	-	-
	Herring gull	-	-	-	-	-	-	(42)	-	-	-	-	-
358	Pink-footed goose	-	-	-	(121)	-	-	-	-	-	-	-	-
	Cattle egret	-	-	-	-	(1)	-	-	-	-	-	-	-
	Oystercatcher	-	-	-	-	-	-	-	-	-	-	-	(2)
	Common gull	-	-	-	-	-	-	39	18	-	-	-	-
	Merlin	-	-	-	-	-	-	-	-	-	(1)	-	-
359	Mallard	-	-	-	-	-	-	5	-	-	-	-	-
	Snipe	-	-	-	-	-	-	-	-	2	-	-	-
	Woodcock	-	-	-	-	-	-	1	-	-	-	-	-
360	Lapwing	-	-	-	-	-	-	-	-	-	-	(11)	-
361	Merlin	-	-	-	-	-	-	-	-	-	(1)	-	-
362	Lapwing	-	-	-	-	-	12	-	-	-	-	-	-
	Merlin	-	-	-	-	-	-	-	-	-	-	-	(1)
364	Mallard	-	-	-	2	-	-	-	-	-	12	3	6
	Coot	-	-	-	-	-	-	-	-	-	-	-	1
	Moorhen	-	-	-	-	2	2	-	-	-	-	2	1
	Grey heron	-	-	-	-	-	-	-	-	-	-	-	1
	Marsh harrier	-	-	-	-	-	1	-	-	-	-	-	-
365	Mallard	-	-	-	-	-	-	-	-	-	2	-	-
	Moorhen	-	-	-	-	-	-	-	(2)	-	-	-	-
	Grey heron	-	-	-	-	-	-	-	-	(1)	-	-	-
	Snipe	-	-	-	-	1	-	-	-	-	-	-	-
Secondary Species													
36	Skylark	-	-	-	-	-	-	-	-	-	(1)	-	-
97	Sparrowhawk	-	-	-	-	(1)	-	-	-	-	-	-	-

Field N°	Species	Survey Visits											
		1	2	3	4	5	6	7	8	9	10	11	12
	Kestrel	-	-	-	-	-	-	-	(1)	-	-	-	-
	Meadow pipit	-	-	-	-	-	(6)	-	-	-	-	-	-
149	Buzzard	-	-	-	-	-	-	-	-	1	-	-	-
	Rook	-	-	-	-	-	-	(150)	-	-	-	-	-
244	Buzzard	-	-	-	-	-	-	1	-	1	-	-	(1)
358	Buzzard	-	-	-	-	(1)	-	-	-	-	1	-	-
	Rook	-	-	-	-	34	27	50	10	-	-	-	-
359	Grey partridge	-	-	-	-	-	-	4	-	-	-	-	-
	Buzzard	-	-	-	-	-	-	-	-	-	(1)	-	-
	Kestrel	-	-	-	-	-	-	-	-	-	-	(1)	-
	Redwing	-	-	-	-	-	-	-	-	(1)	-	-	-
360	Grey partridge	-	-	-	-	-	-	-	-	-	-	2	-
	Buzzard	-	-	-	-	-	-	-	-	-	(1)	-	-
	Rook	-	-	-	-	-	-	-	(6)	-	-	-	-
	Redwing	-	-	-	-	-	-	48	-	-	150	-	-
	Fieldfare	-	-	-	-	-	-	5	-	-	52	-	-
361	Sparrowhawk	-	-	-	-	-	-	-	-	(1)	-	-	-
	Rook	52	-	-	61	-	-	-	-	-	-	-	-
	Redwing	-	-	-	-	-	-	-	-	10	-	-	-
	Fieldfare	-	-	-	-	(45)	-	-	-	-	-	-	-
362	Rook	-	42	-	-	-	-	-	22	-	-	7	-
363	Buzzard	-	-	-	-	-	-	1	-	-	-	(1)	-
	Redwing	-	-	-	-	-	-	-	-	6	-	-	-
	Fieldfare	-	-	-	-	-	-	-	18	(8)	-	-	-
364	Rook	-	-	-	-	-	-	-	-	-	30	26	30
	Redwing	-	-	-	-	-	20	-	12	(10)	-	-	-
	Fieldfare	-	-	-	-	-	-	-	-	(2)	-	-	-
365	Buzzard	-	-	-	-	-	-	(1)	(1)	-	-	-	-
	Sparrowhawk	-	-	-	-	-	-	-	(1)	-	-	-	-
369	Buzzard	-	-	-	-	-	1	-	-	-	-	-	-

‘-’ refers to no observation in this field during that specific survey.
Numbers in brackets refers to flocks or individual birds seen in flight only.

Wider Survey Area

3.2.14 In the Wider Survey Area, mute swan (in flight only), pink-footed goose, grey heron, little egret, oystercatcher, lapwing and peregrine were recorded. No flocks exceeded 20 birds.

3.2.15 Secondary species comprised buzzard, sparrowhawk, skylark, redwing, fieldfare and starling.

3.2.16 Results are shown below in **Table 3.5**.

3.2.17 The results of surveys within the Wider Survey Area will not be discussed further.

Table 3.5: Target and Secondary Species recorded in the Wider Survey Area

Field N°	Species	Survey Visits											
		1	2	3	4	5	6	7	8	9	10	11	12
Target species													
92	Mute swan	-	-	-	-	-	-	-	-	-	-	-	(2)
	Pink-footed goose	-	1	-	-	-	-	-	-	-	-	-	-
	Grey heron	-	-	-	-	-	-	-	-	1	-	-	-
	Little egret	-	-	-	-	-	-	-	(1)	-	-	-	-
	Lapwing	-	-	-	-	12	12	-	2	2	-	-	-
	Peregrine	-	-	-	-	-	-	-	-	-	(1)	-	-
218	Oystercatcher	-	-	-	-	-	-	-	-	1	-	-	-
	Lapwing	-	-	-	-	9	18	-	-	12	-	6	(3)
Secondary species													
92	Buzzard	-	-	-	-	-	-	2	-	-	-	1	-
	Skylark	-	-	-	-	-	-	-	-	-	(2)	-	-
218	Buzzard	-	-	-	-	-	-	-	1	-	-	-	-
	Fieldfare	-	-	-	-	4	-	-	-	-	-	-	-
	Starling	-	-	-	-	-	62	-	-	-	-	-	-
288	Redwing	-	-	-	-	-	-	-	-	-	-	-	10
	Fieldfare	-	-	-	-	-	-	-	-	-	-	-	1
355	Sparrowhawk	-	-	-	-	-	(1)	-	-	-	-	-	-
‘-’ refers to no observation in this field during that specific survey. Numbers in brackets refers to flocks or individual birds seen in flight only.													

April – May 2023 Passage Bird Surveys

Site

- 3.2.18 Passage surveys in Spring 2023 yielded seven Target Species (Greylag goose, shelduck, mallard, little egret, lapwing, oystercatcher and Mediterranean gull) within the Site. Observations referred to peak counts of no more than two birds within fields. A maximum count of four greylag geese flew over Field 222.
- 3.2.19 Secondary species consisted of buzzard, kestrel and yellow wagtail as observations of single birds or pairs.
- 3.2.20 Results are shown below in **Table 3.6**.
- 3.2.21 The indicative locations of Target Species are provided in **Figures 6-7: Non-breeding Bird Survey Results**.

Table 3.6: Target and Secondary Species recorded within the Site

Field N°	Species	Survey Visits			
		1	2	3	4
Target species					
12	Grey heron	-	-	-	(1)
	Little egret	-	-	-	(1)
15	Lapwing	-	-	-	2
18	Oystercatcher	-	(2)	-	
23	Oystercatcher	2	-	-	
	Lapwing	1	-	-	
	Shelduck	-	2	-	
29	Shelduck	(2)	-	-	
191	Shelduck	-	-	-	2
	Oystercatcher	-	-	-	2
	Lapwing	-	-	-	3
199	Little egret	-	-	(1)	
201	Mallard	-	-	(3)	
222	Mediterranean gull	(1)	-	-	
	Greylag goose	-	-	(4)	
223	Little egret	-	1	-	
228	Oystercatcher	-	-	-	1
	Lapwing	-	1	-	
229	Oystercatcher	-	-	2	
Secondary species					
19	Buzzard	-	(1)	-	
23	Buzzard	(1)	-	-	
29	Buzzard	(1)	-	-	
	Yellow wagtail	-	1	-	
183	Buzzard	-	-	1	
191	Yellow wagtail	-	-	-	2
198	Yellow wagtail	-	-	-	2
201	Yellow wagtail	-	-	-	1
203	Buzzard	(1)	-	(1)	
227	Kestrel	-	-	-	(1)
233	Kestrel	-	-	-	(1)
'- refers to no observation in this field during that specific survey. Numbers in brackets refers to flocks or individual birds seen in flight only.					

600m Buffer Zone

3.2.22 Passage surveys in Spring 2023 yielded 16 Target Species (Mute swan, greylag goose, shelduck, mallard, gadwall, shoveler, wigeon, tufted duck, goosander, great crested grebe, little grebe, grey

heron, coot, moorhen, lapwing and oystercatcher) within the 600m Buffer Zone. Numbers of birds were considered to be low. However, the lake adjacent to Field 339 held higher numbers of target species, with flocks of mallard and tufted duck exceeding ten birds with peak counts of 16 and 14 respectively.

3.2.23 Secondary species consisted of buzzard and Canada goose as single observations.

3.2.24 Results are shown below in **Table 3.7**.

3.2.25 The indicative locations of Target Species are provided in **Figures 6-7: Non-breeding Bird Survey Results**.

Table 3.7: Target and Secondary Species recorded within the 600m Buffer Zone

Field N°	Species	Survey Visits			
		1	2	3	4
Target species					
31	Tufted duck	-	-	(2)	-
94	Grey heron	-	(2)	-	-
Pond (100)	Tufted duck	1	1	2	1
	Moorhen	-	1	-	2
	Coot	-	-	5	-
	Little grebe	-	-	1	1
	Mallard	-	-	1	5
115	Shelduck	2	-	-	-
131	Lapwing	-	(2)	-	-
149	Lapwing	-	-	-	(1)
191	Lapwing	-	-	2	-
	Oystercatcher	-	-	2	-
195	Mallard	(3)	-	-	-
207	Shelduck	-	(2)	-	-
	Lapwing	-	-	-	(2)
244	Lapwing	-	-	(2)	-
273	Oystercatcher	-	1	-	-
274	Mallard	-	-	-	(3)
320	Oystercatcher	-	-	1	-
Lake (339)	Greylag goose	-	-	-	1
	Tufted duck	12	14	12	6
	Gadwall	6	-	-	-
	Coot	6	4	7	4
	Mute swan	1	4	2	2
	Moorhen	1	2	-	2
	Mallard	-	16	3	11
	Goosander	-	4	-	-
Shoveler	-	6	-	-	

	Wigeon	-	1	-	-
	Great crested grebe	2	2	1	2
	Little grebe	-	-	-	1
362	Oystercatcher	-	2	-	-
374	Oystercatcher	-	-	-	(2)
Secondary Species					
246	Buzzard	-	-	-	(1)
Lake (339)	Canada goose	-	-	-	4
‘-’ refers to no observation in this field during that specific survey. Numbers in brackets refers to flocks or individual birds seen in flight only.					

Assessment of Significance

- 3.2.26 Three of the target species recorded (shelduck, golden plover and marsh harrier) are qualifying features of the Humber Estuary SPA under article 4.1 and 4.2 of the Directive (79/409/EEC) as the designated site is regularly used by >1% of the biogeographical population of each migratory species. Additionally, five target species (wigeon, teal, mallard, oystercatcher and lapwing) are listed on the waterbird assemblage of the Humber Estuary SPA. No Target Species were recorded associated with non-breeding populations of the and Lower Derwent Valley SPA (shoveler, whilst recorded, is listed as a qualifying breeding species).
- 3.2.27 Three of the target species recorded (wigeon and teal) are qualifying features of the Humber Estuary Ramsar and two target species recorded (golden plover and shoveler) are qualifying features of the Lower Derwent Valley Ramsar under criterion 6, as the designated site is regularly used by >1% of the biogeographical population of each migratory species.
- 3.2.28 No Target Species associated with either of the nearby SPAs or Ramsar sites were recorded in significant numbers =, suggesting the Site and 600m Buffer Zone does not have any functionality with nearby SPAs/Ramsar sites.
- 3.2.29 **Tables 3.8 and 3.9** below provide information regarding the potential functional linkage for designated species and overall waterbird assemblages for the surrounding designated sites.

Table 3.8: Qualifying Species recorded within the Site and 600m buffer between October 2021 and March 2022, October 2022-March 2023

Species	Month recorded (If month not stated then species not present)	Peak count	% of GB population	Significant numbers criteria met? (Y = Yes, N = No)
Golden plover	February*	2	<0.01	N
Marsh harrier	December*	1	0.17	N
Shelduck	April	8	0.12	N
	May	2	0.03	N
Wigeon	November*	67	0.01	N
	December*	73	0.01	N
	January*	72	0.01	N

Species	Month recorded (If month not stated then species not present)	Peak count	% of GB population	Significant numbers criteria met? (Y = Yes, N = No)
	February*	63	0.01	N
Teal	December*	12	<0.01	N
	January*	12	<0.01	N
	February*	21	<0.01	N
Mallard	October*	52	<0.01	N
	November*	29	<0.01	N
	December*	41	<0.01	N
	January*	27	<0.01	N
	February*	37	<0.01	N
	March*	9	<0.01	N
Shoveler	October*	4	0.02	N
	December*	8	0.04	N
	February*	2	0.01	N
	March*	5	0.02	N
Oystercatcher	February*	1	<0.01	N
	March*	2	<0.01	N
Lapwing	October*	118	0.02	N
	November*	54	<0.01	N
	December*	81	0.01	N
	January*	67	0.01	N
	February*	72	0.01	N
	March*	13	<0.01	N
** Refers to both 2021-2022 and 2022-2023 survey combined totals				

3.2.30 **Table 3.9** presents the maximum wetland bird assemblages recorded during each month within the Site and surrounding 600m buffer zone, wetland bird assemblages are a qualifying feature of Humber Estuary SPA²⁰ and Lower Derwent Valley SPA²¹ under article 4.2 of the Directive (79/409/EEC).

²⁰ According to the most recent available data, available at <https://app.bto.org/webs-reporting/principal.jsp> (accessed 19.06.2023) the five-year average wetland bird assemblage between 2017/2018 and 2021/2022 for the Humber Estuary SPA is 141,614.

²¹ According to the most recent available data, available at <https://app.bto.org/webs-reporting/principal.jsp> (accessed 19.06.2023) the five-year average wetland bird assemblage between 2017/2018 and 2021/2022 for the Lower Derwent Valley SPA is 33,468.

Table 3.9: Total Wetland Bird Assemblages Recorded.

Month recorded	Wetland Species Assemblage Count – Site	Wetland Species Assemblage Count – 600m Buffer	Total Wetland Species Assemblage Count	Significant numbers criteria met ²² ?
October*	211	124	335	No
November*	58	178	236	No
December*	58	228	286	No
January*	73	199	272	No
February*	77	199	276	No
March*	37	52	89	No
April	4	59	63	No
May	10	38	48	No

* Refers to both 2021-2022 and 2022-2023 survey combined totals

3.3 Breeding Bird Surveys

2021

- 3.3.1 The breeding bird assemblage recorded within the Site is representative of farmland and woodland habitats. A total of 49 species were recorded breeding within the Site boundary. Of these, 25 breeding notable species were recorded on-Site, consisting of 12 Red List species (corn bunting, greenfinch, house martin, house sparrow, lapwing, linnet, mistle thrush, skylark, starling, tree sparrow, yellowhammer, and yellow wagtail) and 13 Amber List species (mallard, sparrowhawk, stock dove, woodpigeon, kestrel, rook, wren, dunnoek, song thrush, willow warbler, whitethroat, bullfinch and reed bunting). Of the 25 notable species recorded on-Site, 13 are also species listed as rare and most threatened species under Section 41 of the NERC Act (2006) (lapwing, skylark, dunnoek, song thrush, starling, house sparrow, tree sparrow, yellow wagtail, bullfinch, linnet, corn bunting, yellowhammer and reed bunting) with eight listed under the Selby LBAP (lapwing, skylark, starling, house sparrow, tree sparrow, linnet, corn bunting and yellow wagtail). No Schedule 1 species were recorded during breeding bird surveys.
- 3.3.2 The maximum number of breeding territories for nine of these species were ≤ 4 territories, although higher numbers for sixteen notable species were recorded. Notable species with higher than 4 territories, included corn bunting (10 territories), dunnoek (10 territories), greenfinch (6 territories), house sparrow (18 territories), linnet (8 territories), reed bunting (5 territories), rook (14 territories), skylark (27 territories), song thrush (7 territories), starling (7 territories), whitethroat (11 territories), woodpigeon (14 territories), wren (22 territories), yellowhammer (20 territories) and yellow wagtail (6 territories).
- 3.3.3 The notable species breeding assemblage was typically associated with vegetation along field margins, principally hedgerows, scrub, watercourses, treelines, and woodland habitats. House martin was associated with urban structures bordering the Site.
- 3.3.4 Ground-nesting notable species which use open agricultural fields on-Site consisted of corn bunting, lapwing, skylark, and yellow wagtail. A maximum of 10 corn bunting territories and 27 skylark territories were located throughout and immediately adjacent to the Site. Yellow wagtail were

²² Methodology for assessing significance is provided within paragraph 2.2.19.

recorded within the Site, with six estimated maximum territories, and a maximum of four lapwing territories recorded.

- 3.3.5 All breeding species (or potential breeding species) recorded along with an estimated number of the breeding pairs for each monthly survey are detailed within **Table 3.10** below. Those species in **bold** are considered notable species. The indicative locations of the maximum number of breeding territories of notable species are provided in **Figures A1.8-10**.

Table 3.10: Breeding Bird Survey Results – 2021.

Common Name	Estimated Number of Territories (per visit)			Maximum Territories (total)	Comments
	April	May	June		
Mallard	0	1	0	1	Recorded in the eastern section of the Site
Stock Dove	1	4	2	4	Recorded within field boundary habitats.
Woodpigeon	4	14	8	14	Recorded throughout field boundary habitats.
Collared Dove	0	0	3	3	Recorded within hedgerows.
Lapwing	4	1	1	4	Recorded in open ground in the northern section of the Site.
Sparrowhawk	0	1	0	1	Potentially nesting in trees within the northern section of the Site.
Buzzard	3	5	3	5	Widespread tree nesting pairs.
Great Spotted Woodpecker	0	1	0	1	Recorded within neighbouring woodland south-east of the Site.
Kestrel	0	0	2	2	Recorded within the northern section of the Site.
Magpie	1	1	1	1	Observed in field boundary vegetation.
Rook	14	14	10	14	Observed in woodland bordering the northern Site boundary.
Carrion Crow	1	7	6	7	Located in trees throughout the Site.
Coal Tit	2	0	0	2	Located in woodland to the south-east of the Site.
Blue Tit	19	13	13	19	Recorded throughout field boundary habitats.
Great Tit	5	5	4	5	Recorded throughout field boundary habitats.
Skylark	27	27	16	27	Observed singing throughout the Site in open habitat.
Swallow	0	2	0	2	Recorded in the southern Site section of the Site.
House Martin	0	2	0	2	Recorded nesting on farm buildings adjacent to the northern Site boundary.
Long-tailed Tit	11	3	7	11	Recorded throughout field boundary habitats.
Willow Warbler	1	0	0	1	Observed singing in vegetation in the north of the Site.

Common Name	Estimated Number of Territories (per visit)			Maximum Territories (total)	Comments
	April	May	June		
Chiffchaff	10	8	4	10	Recorded throughout field boundary habitats.
Reed Warbler	0	1	1	1	Recorded in field boundary vegetation.
Blackcap	10	13	10	13	Recorded throughout field boundary habitats.
Garden Warbler	0	2	0	2	Recorded in field boundary vegetation.
Lesser Whitethroat	0	2	0	2	Recorded in field boundary vegetation.
Whitethroat	7	8	11	11	Recorded throughout field boundary habitats.
Goldcrest	0	2	0	2	Recorded in field boundary vegetation.
Wren	22	18	12	22	Recorded throughout field boundary habitats.
Starling	0	7	5	7	Recorded mostly along the south-western Site boundary.
Song Thrush	5	5	7	7	Recorded throughout field boundary habitats.
Mistle Thrush	0	1	0	2	Recorded in Site boundary vegetation.
Blackbird	29	20	26	29	Recorded throughout field boundary habitats.
Robin	32	35	21	35	Recorded throughout field boundary habitats.
Tree Sparrow	0	0	1	1	Recorded in field boundary vegetation in the north western part of the Site.
House Sparrow	0	5	18	18	Mostly recorded in field boundary vegetation within the northern section of the Site.
Dunnock	10	8	2	10	Recorded throughout field boundary habitats.
Yellow Wagtail	5	6	4	6	Recorded in open field habitats.
Pied Wagtail	0	2	0	2	Recorded in Site boundary vegetation.
Chaffinch	16	22	9	22	Recorded throughout field boundary habitats.
Bullfinch	1	0	0	1	Recorded in Site boundary vegetation.
Greenfinch	4	4	5	6	Recorded throughout field boundary habitats.
Linnet	4	8	4	8	Recorded throughout field boundary habitats.
Goldfinch	11	6	5	11	Recorded throughout in Site boundary vegetation.
Corn Bunting	5	10	4	10	Recorded throughout in open fields.
Yellowhammer	17	20	19	20	Recorded throughout field boundary habitats

Common Name	Estimated Number of Territories (per visit)			Maximum Territories (total)	Comments
	April	May	June		
Reed Bunting	1	4	5	5	Recorded throughout field boundary habitats.

3.3.6 During the surveys, several birds were recorded within the Site which were not considered as breeding, as these consisted of individuals flying over the Site only, or those considered only visiting the Site to feed²³. The majority of species recorded breeding with the Site (as listed in Table 3.6) included some individuals of these species considered to not be breeding during the surveys. However, nine species recorded were considered to only be non-breeding species. These non-breeding species include grey heron, jackdaw, pheasant, pied wagtail, red-legged partridge, mute swan, tufted duck, greylag goose and little egret. Non-breeding cuckoo and sand martin were recorded in the Wider Survey Area.

2023

3.3.7 The breeding bird assemblage recorded within the additional surveyed land is representative of farmland and woodland habitats. A total of 29 species were recorded breeding within the Site or within 100m of the Site boundary. Of these, 14 breeding notable species were recorded on-Site, consisting of 6 Red List species (greenfinch, house sparrow, linnets, skylark, yellowhammer, and yellow wagtail) and 8 Amber List species (mallard, woodpigeon, rook, wren, dunnoek, song thrush, willow warbler and whitethroat). Of the 14 notable species recorded on-Site, 7 are also species listed as rare and most threatened species under Section 41 of the NERC Act (2006) (skylark, dunnoek, song thrush, house sparrow, yellow wagtail, linnets and yellowhammer) with 4 listed under the Selby LBAP (skylark, house sparrow, linnets and yellow wagtail). No Schedule 1 species were recorded during breeding bird surveys.

3.3.8 The maximum number of breeding territories for most notable species were under 4 territories, although higher numbers of 5 species were recorded, these being, rook (25 territories), song thrush (6 territories), woodpigeon (7 territories) and wren (22 territories).

3.3.9 The notable species breeding assemblage was typically associated with vegetation along field boundaries on-Site, principally woodland, hedgerows, scrub and open farmland habitats. House sparrow and pied wagtail was associated with urban structures bordering the Site.

3.3.10 Ground-nesting notable species which use open agricultural fields on-Site consisted of skylark (3 breeding territories) and yellow wagtail (1 breeding territory).

3.3.11 All breeding species (or potential breeding species) recorded along with an estimated number of the breeding pairs for each monthly survey are detailed within **Table 3.11** below. Those species in **bold** are considered notable species. The indicative locations of the maximum number of breeding territories of notable species are provided in **Figures 8-10**.

²³ This was based on a number of factors including the number and gender of birds recorded (e.g., only one record of one female during the survey period), unsuitability of habitats within and immediately surrounding the Site to accommodate the nesting requirements of some species, and movement of birds from the Site and the wider landscape to a suspected nest site outside of the Site and the immediately surrounding 100m survey buffer.

Table 3.11: Breeding Bird Survey Results – 2023.

Common Name	Estimated Number of Territories (per visit)			Maximum Territories (total)	Comments
	April	May	June		
Mallard	1	1	0	1	Recorded close to pond on golf course.
Woodpigeon	2	7	6	7	Recorded within woodland within Site and Buffer.
Coot	1	1	0	1	Recorded on pond on golf course.
Great spotted woodpecker	1	0	1	1	Recorded in woodland within golf course.
Rook	25	20	25	25	Recorded in rookery located in woodland within golf course.
Jackdaw	1	0	1	1	Recorded within woodland within Site and Buffer.
Coal tit	1	0	0	1	Recorded in woodland within golf course.
Blue tit	5	3	1	5	Recorded within woodland within Site and Buffer.
Great tit	2	2	0	2	Recorded within woodland within Site and Buffer.
Skylark	3	3	0	3	Recorded in arable fields within Site and Buffer.
Long-tailed tit	1	1	1	1	Recorded within woodland within Site and Buffer.
Willow warbler	1	2	0	2	Recorded within woodland within Site and Buffer.
Chiffchaff	6	7	3	7	Recorded within woodland within Site and Buffer.
Blackcap	5	11	3	11	Recorded within woodland within Site and Buffer.
Whitethroat	1	4	2	4	Recorded within hedgerows and scrub within Site and Buffer.
Goldcrest	1	1	0	1	Recorded in woodland north of golf course.
Wren	22	14	4	22	Recorded within woodland and scrub within Site and Buffer.
Song thrush	3	6	2	6	Recorded within woodland within Site and Buffer.
Blackbird	5	10	5	10	Recorded within woodland within Site and Buffer.
Robin	8	13	4	13	Recorded within woodland within Site and Buffer.
House sparrow	2	3	2	3	Recorded near housing and in trees within Site and Buffer.

Common Name	Estimated Number of Territories (per visit)			Maximum Territories (total)	Comments
	April	May	June		
Duncock	2	2	0	2	Recorded within woodland and scrub within Site and Buffer.
Pied wagtail	1	0	0	1	Recorded in car park of club house.
Yellow wagtail	0	1	1	1	Recorded in arable field within Site.
Chaffinch	6	8	2	8	Recorded within woodland within Site and Buffer.
Greenfinch	0	1	1	1	Recorded in woodland within golf course.
Linnet	1	1	0	1	Recorded within hedgerow within Site.
Goldfinch	3	2	0	3	Recorded within woodland within Site and Buffer.
Yellowhammer	1	2	0	2	Recorded within hedgerows and arable fields within Site.

3.3.12 During the surveys, several birds were recorded within the Site which were not considered as breeding, as these consisted of individuals flying over the Site only, or those considered only visiting the Site to feed²⁴. The majority of species recorded breeding with the Site (as listed in Table 3.7) included some individuals of these species considered to not be breeding during the surveys. However, nine species recorded were considered to only be non-breeding species. These non-breeding species include grey heron, jackdaw, pheasant, red-legged partridge, greylag goose, starling, carrion crow, magpie, buzzard, swallow, kestrel and reed bunting.

Additional Breeding Bird Records

Schedule 1 Species

3.3.13 Further confidential information is provided within **Annex 3**.

²⁴ This was based on a number of factors including the number and gender of birds recorded (e.g., only one record of one female during the survey period), unsuitability of habitats within and immediately surrounding the Site to accommodate the nesting requirements of some species, and movement of birds from the Site and the Wider Survey Area to a suspected nest site outside of the Site and the immediately surrounding 100m survey buffer.

4 SUMMARY

Non-breeding Bird Survey Results

- 4.1.1 A total of 12 visits were carried out between October 2021 and March 2022. Within the survey period, a total of eight Target Species were recorded within the Site and within the 600m Buffer Zone.
- 4.1.2 An additional 12 visits were carried out on additional land between October 2022 and March 2023. Within this survey period, a total of seven target species were recorded within the Site and 25 Target Species within the 600m Buffer Zone.
- 4.1.3 Four passage surveys between April and May 2023 were also carried out over the entire Site and 600m Buffer Zone. A total of seven target species within the Site and 16 target species were recorded within the 600m Buffer Zone.
- 4.1.4 The survey results indicate that fields within the Site and wider 600m buffer zone are utilised on an occasional basis by non-significant numbers of waterbird species and waterbird assemblages. Therefore, the Proposed Development is likely to displace non-significant numbers of non-breeding wetland bird species. However, these species were also noted within the buffer zone and wider survey area, suggesting that the fields in the adjacent habitats provide equally suitable foraging habitat for these species.
- 4.1.5 The 600m buffer from the Site boundary which comprised the survey buffer zone (and some fields within the Wider Survey Area) was introduced to record any species using the surrounding habitats, because studies have shown that birds can be displaced or discouraged from using habitats within 600m of development activities²⁵; however, it is assumed that this maximum visual displacement radius is only pertinent during the construction and decommissioning phases of the Proposed Development, due to the anticipated relatively low human presence during the operational phase.
- 4.1.6 No Target Species associated as qualifying features of the adjacent Humber Estuary SPA, Humber Estuary Ramsar, Lower Derwent Valley SPA or Lower Derwent Valley Ramsar were recorded within the Site or 600m in significant numbers (alone or in combination). Therefore, based on the results of the Non-breeding Bird Surveys, the Site and 600m Buffer Zone are not considered to be functionally linked with nearby internationally important designated sites with qualifying bird interests.

Breeding Bird Survey Results

- 4.1.7 The results presented in **Table 3.10** and **Table 3.11** detail the estimated number of territories recorded during each monthly survey, as well as an interpretation of the quantity of territories within the Site and immediately surrounding land (within 100m). The number of estimated territories for notable species recorded within the current redline boundary and within the 100m buffer during the 2021 and 2023 surveys are as follows: mallard (2), stock dove (4), woodpigeon (21), lapwing (4), sparrowhawk (1), kestrel (2), rook (39 (two rookeries)), skylark (30), house martin (2), willow warbler (3), whitethroat (15), wren (44), starling (7), song thrush (13), mistle thrush (2), tree sparrow (1), house sparrow (21), dunnock (12), yellow wagtail (7), bullfinch (1), greenfinch (7), linnet (9), corn bunting (16), yellowhammer (22) and reed bunting (5).
- 4.1.8 The Site and immediately surrounding land (within 100m) supports a breeding bird assemblage indicative of farmland and woodland habitats and is considered to be of only local value. Most breeding species were associated with the field boundary vegetation (such as hedgerows and trees), with some species recorded along ditches and urban structures. These habitats are unlikely to be

²⁵ Available at: <https://www.rspb.org.uk/globalassets/downloads/documents/positions/climate-change/wind-power-publications/birdlife-international-report-to-the-bern-convention.pdf> Accessed on: 08th June 2023

directly impacted by the Proposed Development. The only ground-nesting notable species recorded within the Site were corn bunting, lapwing, skylark, and yellow wagtail. Whilst estimates of territories initially appear large e.g., 44 wren territories and 30 skylark territories, it should be noted that these estimates occur within the c53 fields of the Site. Therefore, the overall density of ground-nesting bird species is considered to be very low, and the success of ground nesting species will be significantly impacted by current intensive agricultural operations within the Site.

- 4.1.9 Species such as corn bunting, lapwing, skylark, and yellow wagtail may be displaced during the construction phase of the Proposed Development, but the impact is likely to be short-term, given habitat enhancement within solar development has been shown to benefit birds, including ground-nesting species. These four species are likely to be displaced during the construction phase, but with habitat enhancement measures adopted and with abundantly suitable habitat present off-Site, the Proposed Development is unlikely to significantly impact corn bunting, lapwing, skylark, and yellow wagtail.

FIGURE 1 – NON BREEDING BIRD SURVEY RESULTS 2021-22 – OVERVIEW

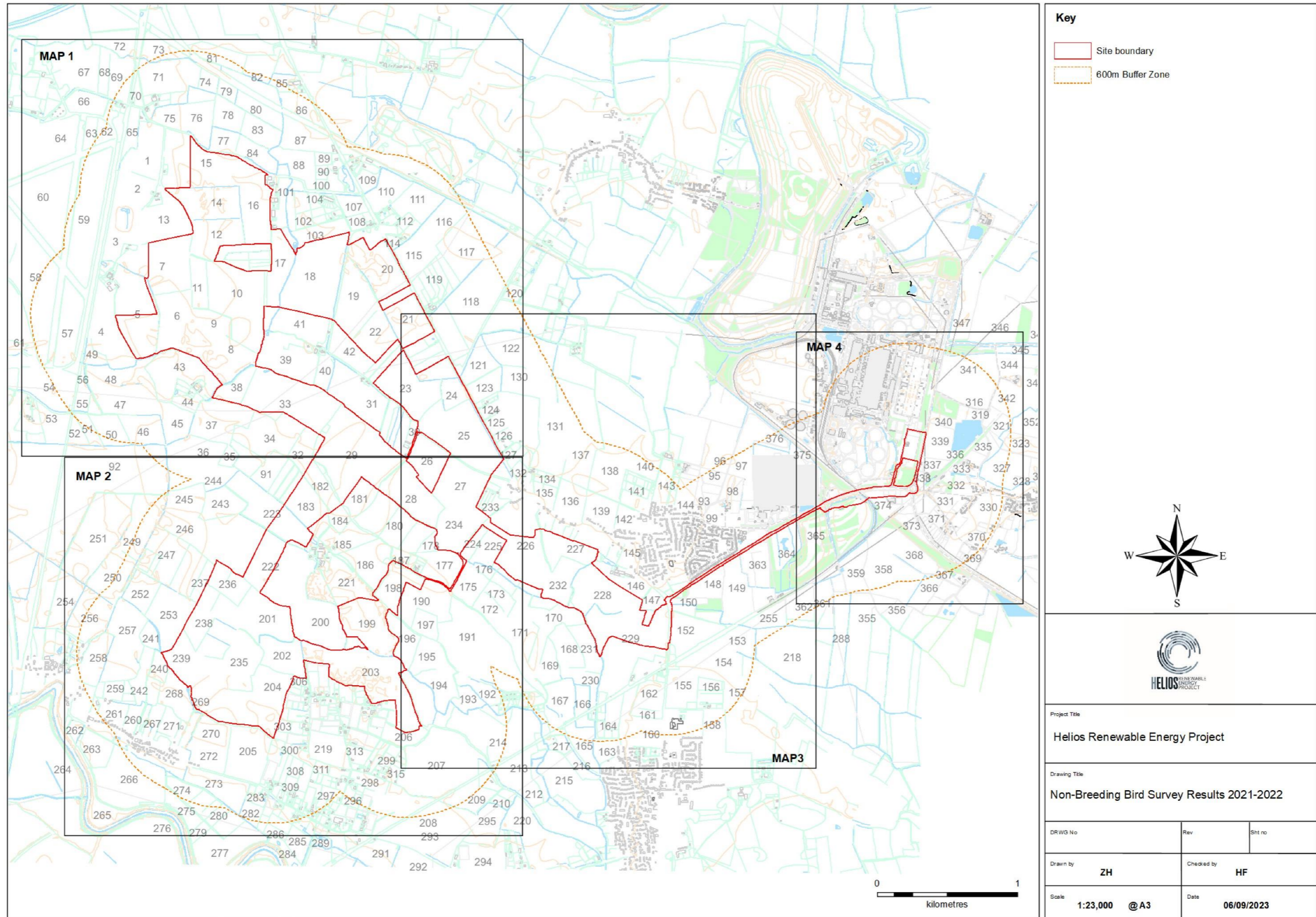


FIGURE 2 – NON BREEDING BIRD SURVEY RESULTS 2021-22 – MAP 1

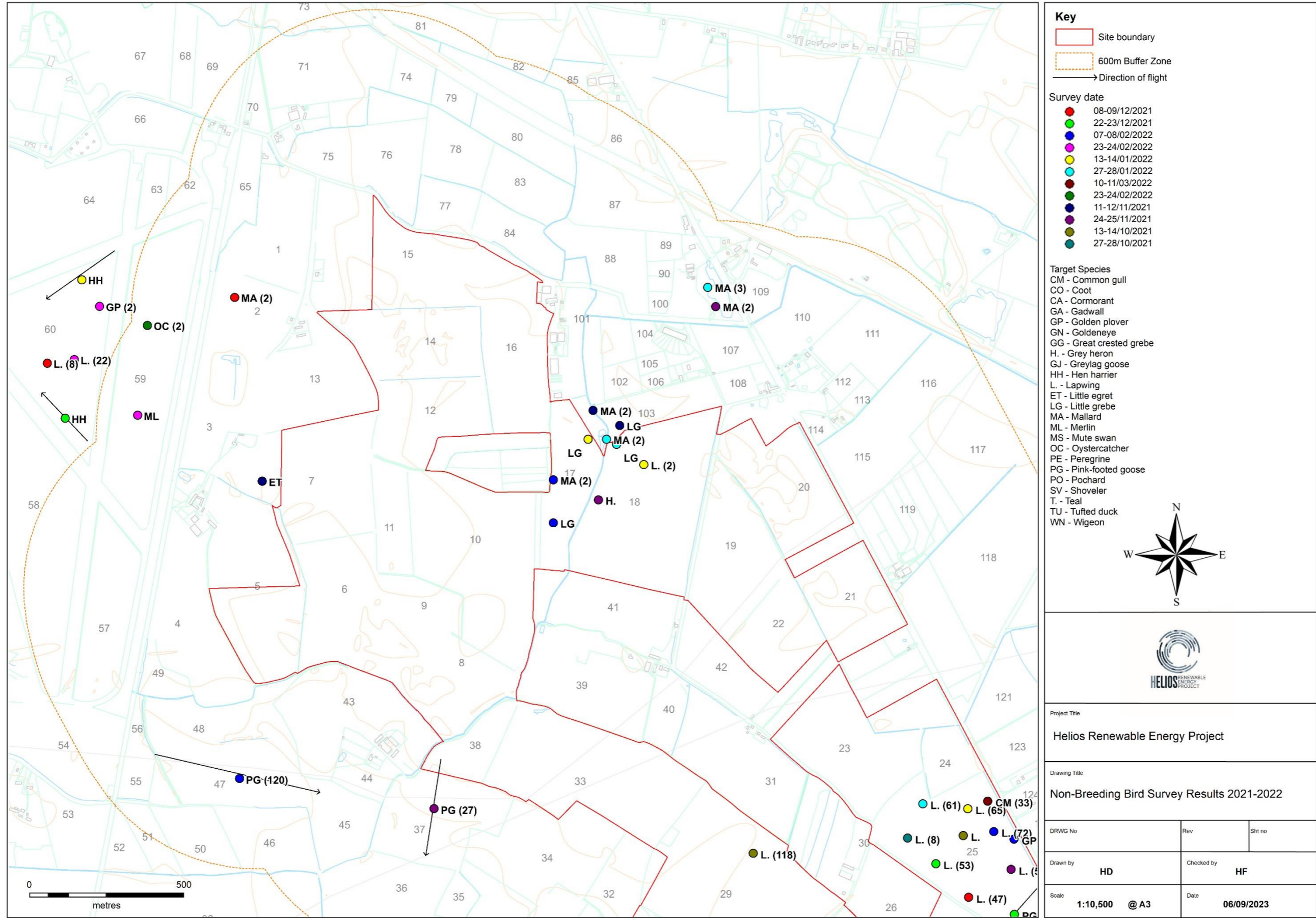


FIGURE 4 – NON BREEDING BIRD SURVEY RESULTS 2021-22 – MAP 3

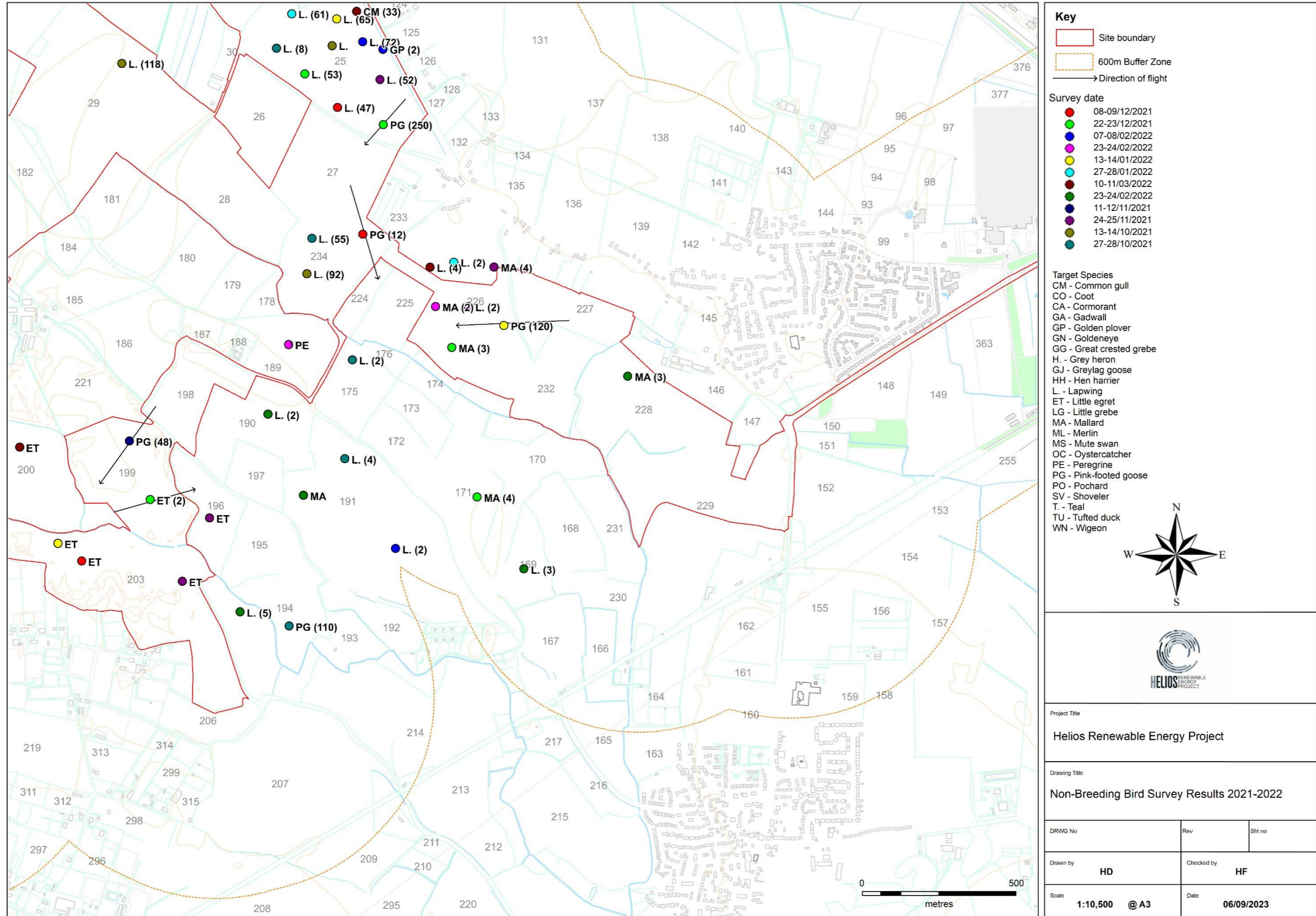


FIGURE 5 – NON BREEDING BIRD SURVEY RESULTS – 2021-22 – MAP 4

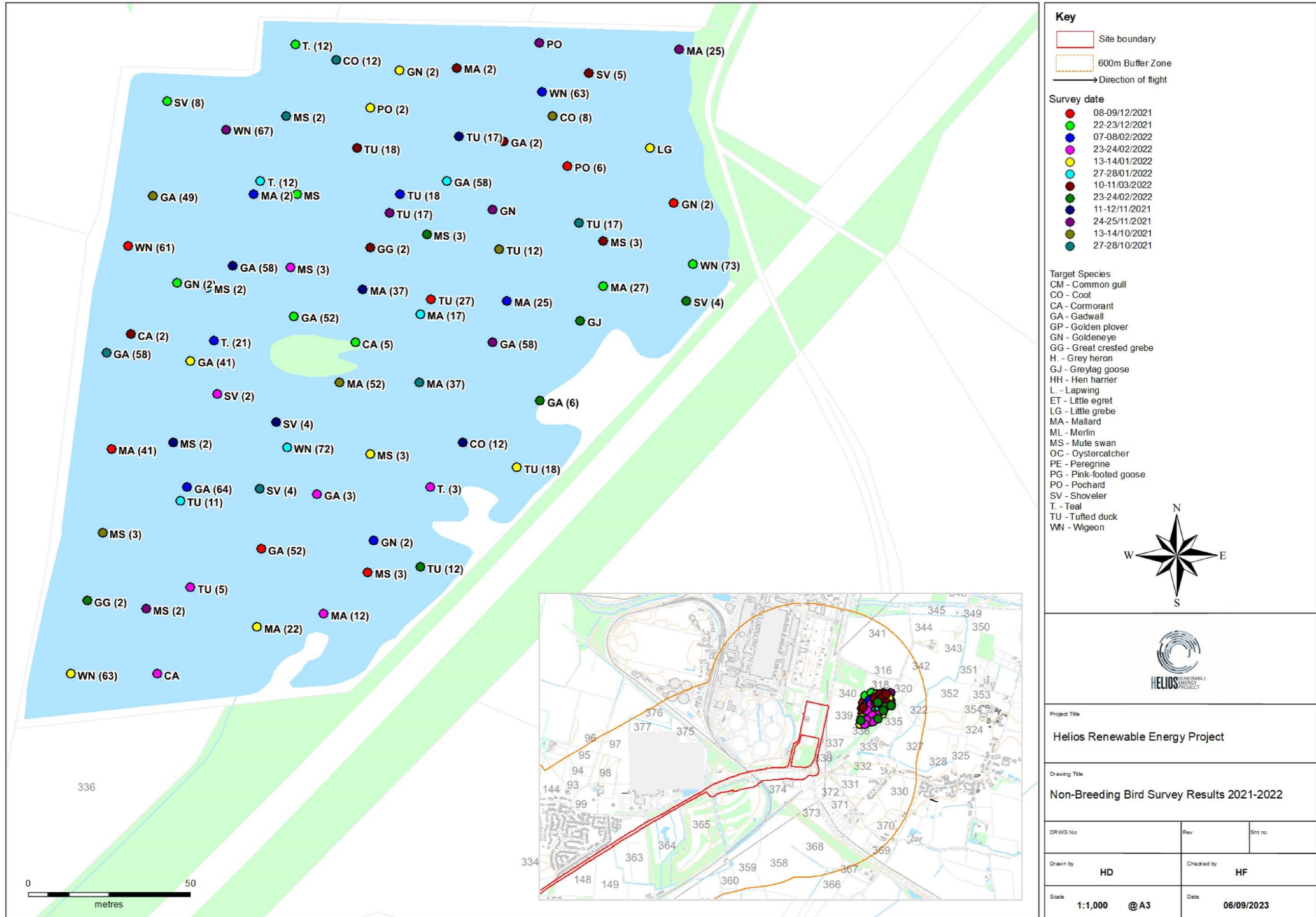
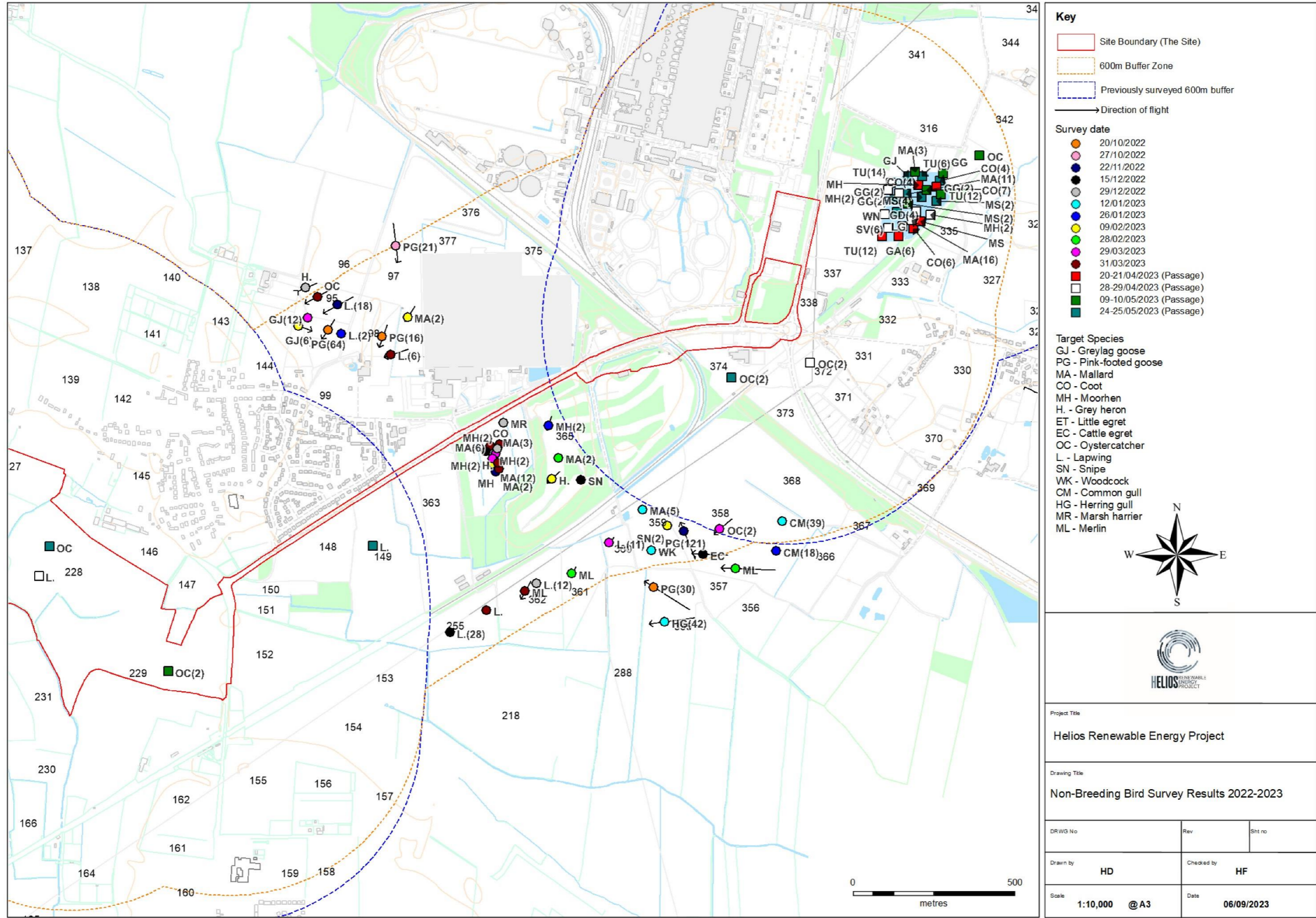
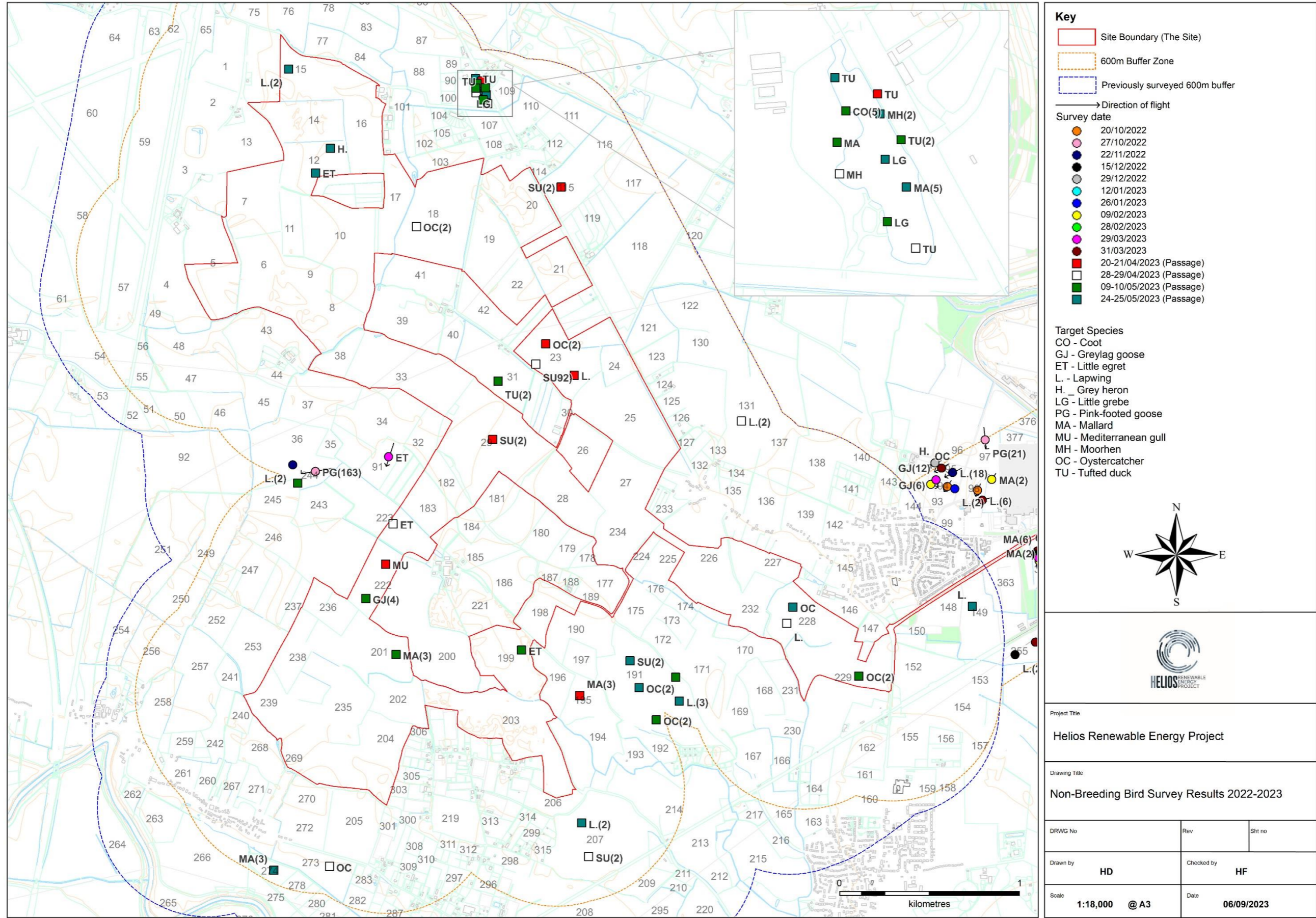


FIGURE 6 – NON BREEDING BIRD SURVEY RESULTS – 2022-23 – MAP 1



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FIGURE 7 – NON BREEDING BIRD SURVEY RESULTS – 2022-23 – MAP 2



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FIGURE 8 – BREEDING BIRD SURVEY RESULTS – APRIL

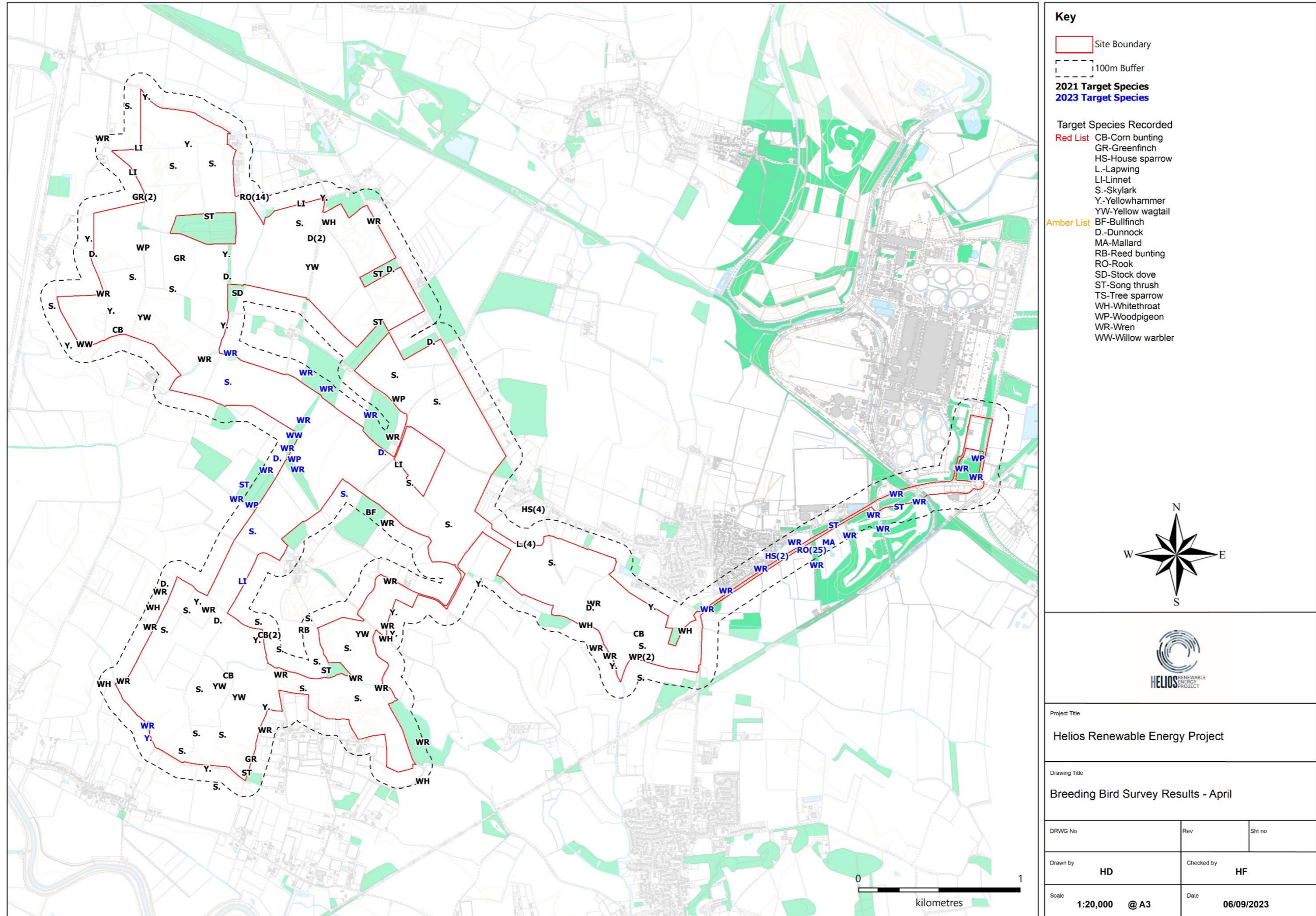
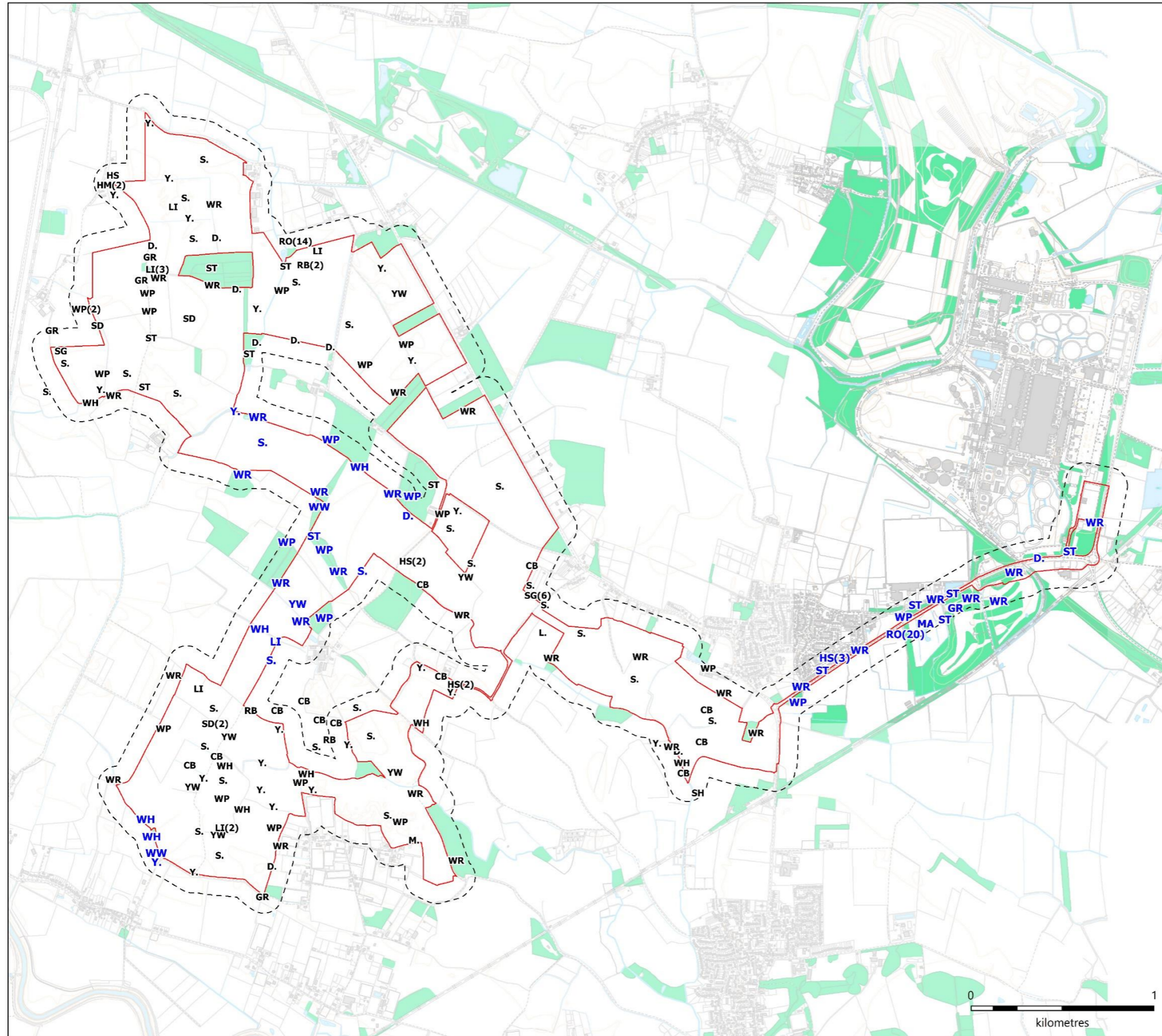


FIGURE 9 – BREEDING BIRD SURVEY RESULTS – MAY



Key

- Site Boundary
- 100m Buffer
- 2021 Target Species**
- 2023 Target Species**

Target Species Recorded

Red List

- CB-Corn bunting
- GR-Greenfinch
- HM-House martin
- HS-House sparrow
- L-Lapwing
- LI-Linnet
- M-Mistle thrush
- S-Skylark
- SG-Starling
- Y-Yellowhammer
- YW-Yellow wagtail

Amber List

- BF-Bullfinch
- D-Dunnock
- MA-Mallard
- RB-Reed bunting
- RO-Rook
- SD-Stock dove
- SH-Sparrowhawk
- ST-Song thrush
- TS-Tree sparrow
- WH-Whitethroat
- WP-Woodpigeon
- WR-Wren

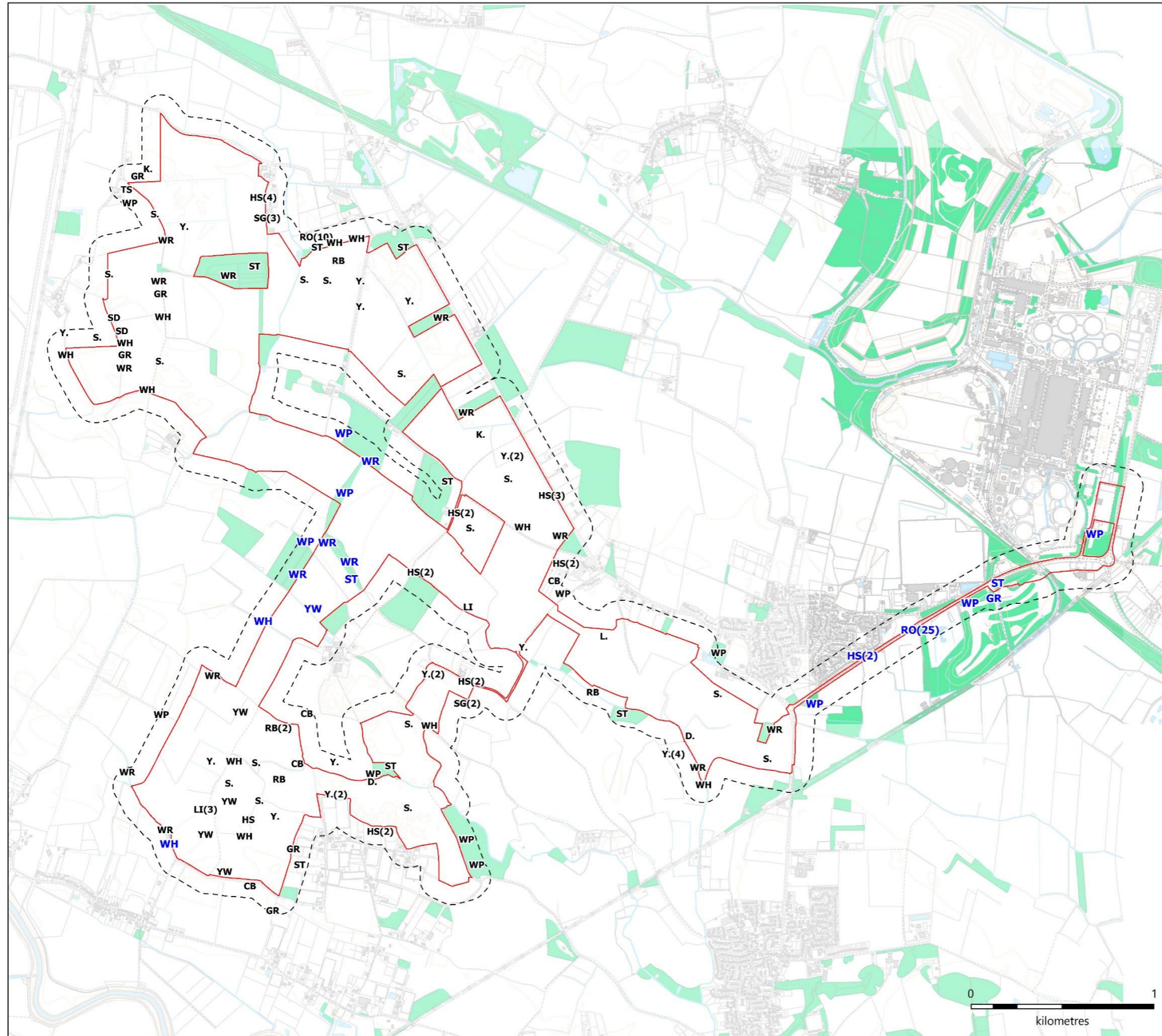
Project Title
Helios Renewable Energy Project

Drawing Title
Breeding Bird Survey Results - May

DRWG No	Rev	Sht no
Drawn by HD	Checked by HF	
Scale 1:20,000 @ A3	Date 06/09/2023	

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FIGURE 10 – BREEDING BIRD SURVEY RESULTS – JUNE



- Key**
- Site Boundary
 - 100m Buffer
 - 2021 Target Species**
 - 2023 Target Species**
- Target Species Recorded**
- Red List**
 - CB-Corn bunting
 - GR-Greenfinch
 - HS-House sparrow
 - L-Lapwing
 - LI-Linnet
 - S-Skylark
 - SG-Starling
 - Y-Yellowhammer
 - YW-Yellow wagtail
 - Amber List**
 - BF-Bullfinch
 - D-Dunnock
 - K-Kestrel
 - RB-Reed bunting
 - RO-Rook
 - SD-Stock dove
 - ST-Song thrush
 - TS-Tree sparrow
 - WH-Whitethroat
 - WP-Woodpigeon
 - WR-Wren
 - WW-Willow warbler



Project Title		
Helios Renewable Energy Project		
Drawing Title		
Breeding Bird Survey Results - June		
DRWG No	Rev	Sht no
Drawn by	Checked by	
HD	HF	
Scale	Date	
1:20,000 @ A3	06/09/2023	

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Annex 1

ANNEX 1. BIRD SPECIES SUMMARY

Table A1.1 provides a list of bird species recorded during the breeding bird surveys. Both common and species names are presented along with a summary of each species conservation status using the following abbreviations:

- Annex 1 – European Birds Directive Annex I species.
- S1 – Schedule 1 of the Wildlife & Countryside Act 1981 (as amended)
- S9 – Schedule 9 invasive non-native species listed on the Wildlife & Countryside Act 1981 (as amended)
- BoCC – Birds of Conservation Concern as listed by leading bird conservation organisations in the UK, including the RSPB and BTO. Red and Amber categories are given (Stanbury *et al.*, 2021);
- NERC S41 - species listed as rare and most threatened on the NERC Act (2006); and,
- LBAP – Selby Local Biodiversity Action Plan Species.

Table A1.1: Summary of bird species.

Common name	Species name	Conservation status
Red-legged partridge	<i>Alectoris rufa</i>	-
Pheasant	<i>Phasianus colchicus</i>	-
Brent goose	<i>Branta bernicla</i>	BoCC – Amber, LBAP.
Mute swan	<i>Cygnus olor</i>	BoCC – Amber.
Bewick's swan	<i>Cygnus columbianus bewicki</i>	S1, Annex 1, NERC S41, BoCC – Red.
Pink-footed goose	<i>Anser brachyrhynchos</i>	BoCC – Amber.
Greylag goose	<i>Anser anser</i>	BoCC – Amber.
Canada goose	<i>Branta canadensis</i>	-
Shelduck	<i>Tadorna tadorna</i>	BoCC – Amber.
Shoveler	<i>Spatula clypeata</i>	BoCC – Amber, LBAP.
Wigeon	<i>Mareca penelope</i>	BoCC – Amber, LBAP.
Gadwall	<i>Mareca strepera</i>	BoCC – Amber, LBAP.
Teal	<i>Anas crecca</i>	BoCC – Amber, LBAP.
Mallard	<i>Anas platyrhynchos</i>	BoCC – Amber.
Tufted duck	<i>Aythya fuligula</i>	-
Pochard	<i>Aythya ferina</i>	BoCC – Red, LBAP.
Scaup	<i>Aythya marila</i>	S1, NERC S41, BoCC - Red
Goldeneye	<i>Bucephala clangula</i>	BoCC – Red.
Goosander	<i>Mergus merganser</i>	LBAP
Little egret	<i>Egretta garzetta</i>	Annex 1.
Cattle egret	<i>Bubulcus ibis</i>	BoCC - Amber
Grey heron	<i>Ardea cinerea</i>	-
Little grebe	<i>Tachybaptus ruficollis</i>	-
Great crested grebe	<i>Podiceps cristatus</i>	-
Hen harrier	<i>Circus cyaneus</i>	Annex 1, S1, BoCC – Amber.

Common name	Species name	Conservation status
Sparrowhawk	<i>Accipiter nisus</i>	BoCC – Amber.
Buzzard	<i>Buteo buteo</i>	-
Coot	<i>Fulica atra</i>	-
Moorhen	<i>Gallinula chloropus</i>	-
Avocet	<i>Recurvirostra avosetta</i>	Annex 1, S1, BoCC – Amber, LBAP.
Golden plover	<i>Pluvialis apricaria</i>	Annex 1, LBAP.
Grey plover	<i>Pluvialis squatarola</i>	BoCC – Amber, LBAP.
Ringed plover	<i>Charadrius hiaticula</i>	BoCC – Red.
Oystercatcher	<i>Haematopus ostralegus</i>	BoCC – Amber.
Lapwing	<i>Vanellus vanellus</i>	BoCC – Red, NERC S41, LBAP.
Whimbrel	<i>Numenius phaeopus</i>	S1, BoCC – Red.
Curlew	<i>Numenius arquata</i>	NERC S41, BoCC – Red, LBAP.
Bar-tailed Godwit	<i>Limosa lapponica</i>	Annex 1, BoCC – Amber, LBAP.
Black-tailed Godwit	<i>Limosa limosa</i>	S1, NERC S41, BoCC – Red.
Turnstone	<i>Arenaria interpres</i>	BoCC - Amber.
Knot	<i>Calidris canutus</i>	BoCC – Amber, LBAP.
Ruff	<i>Calidris pugnax</i>	S1, Annex 1, BoCC – Red, LBAP.
Sanderling	<i>Calidris alba</i>	BoCC – Amber, LBAP.
Dunlin	<i>Calidris alpina</i>	BoCC – Red, LBAP.
Redshank	<i>Tringa totanus</i>	BoCC – Amber, LBAP.
Common gull	<i>Larus canus</i>	BoCC – Amber.
Mediterranean gull	<i>Ichthyaetus melanocephalus</i>	S1, Annex 1, BoCC – Amber
Little tern	<i>Sternula albifrons</i>	S1, Annex 1, BoCC – Amber.
Bittern	<i>Botaurus stellaris</i>	S1, Annex 1, NERC S41, BoCC – Amber, LBAP.
Woodpigeon	<i>Columba palumbus</i>	BoCC – Amber.
Stock dove	<i>Columba oenas</i>	BoCC – Amber.
Collared dove	<i>Streptopelia decaoto</i>	-
Cuckoo	<i>Cuculus canorus</i>	BoCC – Red.
Marsh harrier	<i>Circus aeruginosus</i>	S1, Annex 1, BoCC – Amber.
Kestrel	<i>Falco tinnunculus</i>	BoCC – Amber.
Peregrine	<i>Falco peregrinus</i>	S1, LBAP.
Merlin	<i>Falco columbarius</i>	Annex 1, S1, BoCC – Red, LBAP.
Hobby	<i>Falco subbuteo</i>	S1.
Barn owl	<i>Tyto alba</i>	S1.
Great spotted woodpecker	<i>Dendrocopus major</i>	-
Magpie	<i>Pica pica</i>	-
Rook	<i>Corvus frugilegus</i>	BoCC – Amber.
Jackdaw	<i>Coloeus monedula</i>	-

Common name	Species name	Conservation status
Carrion crow	<i>Corvus corone</i>	-
Coal tit	<i>Periparus ater</i>	-
Blue tit	<i>Cyanistes caeruleus</i>	-
Great tit	<i>Parus major</i>	-
Skylark	<i>Alauda arvensis</i>	NERC S41, BoCC – Red, LBAP.
Sand martin	<i>Riparia riparia</i>	LBAP.
House martin	<i>Delichon urbicum</i>	BoCC – Amber.
Swallow	<i>Hirundo rustica</i>	BoCC – Amber, LBAP.
Long-tailed tit	<i>Aegithalos caudatus</i>	-
Willow warbler	<i>Phylloscopus trochilus</i>	BoCC – Amber
Chiffchaff	<i>Phylloscopus collybita</i>	-
Reed warbler	<i>Acrocephalus scirpaceus</i>	-
Blackcap	<i>Sylvia atricapilla</i>	-
Garden warbler	<i>Sylvia borin</i>	-
Lesser whitethroat	<i>Curcucca curucca</i>	-
Whitethroat	<i>Curucca communis</i>	BoCC – Amber.
Goldcrest	<i>Regulus regulus</i>	-
Wren	<i>Troglodytes troglodytes</i>	BoCC – Amber.
Starling	<i>Sturnus vulgaris</i>	BoCC – Red, NERC S41, LBAP.
Song thrush	<i>Turdus philomelos</i>	NERC S41, BoCC – Amber, LBAP.
Mistle thrush	<i>Turdus viscivorus</i>	NERC S41, BoCC – Red.
Blackbird	<i>Turdus merula</i>	-
Robin	<i>Erithacus rubecula</i>	-
Tree sparrow	<i>Passer montanus</i>	NERC S41, BoCC – Red, LBAP.
House sparrow	<i>Passer domesticus</i>	NERC S41, BoCC – Red
Pied wagtail	<i>Motacilla alba yarelli</i>	-
Yellow wagtail	<i>Motacilla flava flavissima</i>	NERC S41, BoCC – Red, LBAP.
Chaffinch	<i>Fringella coelebs</i>	-
Bullfinch	<i>Pyrrhula pyrrhula</i>	NERC S41, BoCC – Amber.
Linnet	<i>Linnaria connabina</i>	NERC S41, BoCC – Red, LBAP
Greenfinch	<i>Chloris chloris</i>	BoCC – Red.
Goldfinch	<i>Carduelis carduelis</i>	-
Corn bunting	<i>Emberiza calandra</i>	NERC S41, BoCC – Red, LBAP.
Yellowhammer	<i>Emberiaa citronella</i>	NERC S41, BoCC – Red.
Reed bunting	<i>Emberiza schoeniclus</i>	NERC S41, BoCC – Amber.

Annex 2

ANNEX 2. BIRD SURVEY EFFORT

Table A2.1: Survey Condition Categorisation for Non-breeding Bird 2021-22 (Table A2.2), Non-breeding Bird 2022-23 (Table A2.3) and Breeding Bird (Table A2.4) Survey Efforts.

Wind Speed		W-Direction	Rain		Cloud Cover		Cloud Height	
Calm	0	Use 16-point Compass	None	0	In eighths e.g.,	3/8	<150m	0
Light air	1		Light Showers	1			150-500m	1
Light breeze	2	N	Heavy Showers	2			>500m	2
Mod. breeze	4	NE	Light rain	3				
Fresh breeze	5	ENE	Heavy rain	4				
Strong breeze	6	E						
Mod. gale	7	Etc	Visibility		Snow		Frost	
Fresh gale	8		Poor	0	None	0	None	0
Strong gale	9		< 1km	1	On site	1	Ground	1
Whole gale	10		>1km	2	High ground	2	All day	2
Storm	11							

Table A2.2: Non-breeding Bird Survey Effort 2021-22.

Date	Surveyor	Start Time (24 hrs)	End time (24 hrs)	Wind Speed	Wind Direction	Rain	Cloud Height	Cloud Cover	Visibility	Frost	Snow
13/10/2021	CD	10:15	14:00	3	W	0	2	8/8	2	0	0
14/10/2021	CD	10:15	15:00	3	W	0	2	8/8	2	0	0
27/10/2021	CD	08:00	14:00	3	W	1	2	8/8	2	0	0
28/10/2021	CD	09:00	13:00	3	W	0	2	8/8	2	0	0

Date	Surveyor	Start Time (24 hrs)	End time (24 hrs)	Wind Speed	Wind Direction	Rain	Cloud Height	Cloud Cover	Visibility	Frost	Snow
11/11/2021	CD	09:15	15:00	1	W	0	2	8/8	2	0	0
12/11/2021	CD	10:45	16:40	4	W	1	2	8/8	2	0	0
24/11/2021	CD	07:45	13:00	1	W	0	2	6/8	2	0	0
25/11/2021	CD	07:30	12:15	1	W	0	2	6/8	2	0	0
08/12/2021	CD	08:00	12:50	3	SW	2	2	8/8	2	0	0
09/12/2021	CD	08:00	13:50	4	SW	0	2	6/8	2	0	0
22/12/2021	CD	08:00	11:50	1	SE	0	2	2/8	2	0	0
23/12/2021	CD	08:00	11:30	2	SE	0	2	5/8	2	0	0
13/01/2022	CD	13:30	16:40	1	W	0	2	6/8	2	0	0
14/01/2022	CD	14:10	16:40	1	W	0	2	6/8	2	0	0
27/01/2022	CD	11:40	16:40	3	NW	0	2	4/8	2	0	0
28/01/2022	CD	12:40	17:00	3	NW	0	2	4/8	2	0	0
07/02/2022	CD	08:40	13:40	3	SW	0	2	6/8	2	0	0
08/02/2022	CD	09:30	13:30	4	SW	0	2	6/8	2	0	0
23/02/2022	CD	08:30	14:30	5	SW	0	2	6/8	2	0	0
24/02/2022	CD	10:00	15:00	7	SW	0	2	6/8	2	0	0
10/03/2022	CD	09:30	14:00	3	SE	0	2	8/8	2	0	0
11/03/2022	CD	10:30	15:00	4	SE	0	2	6/8	2	0	0
23/03/2022	CD	07:16	13:16	1	W	0	2	1/8	2	0	0
24/03/2022	CD	09:00	13:30	1	W	0	2	2/8	2	0	0

Table A2.3: Non-breeding Bird Survey Effort 2022-23.

Date	Surveyor	Start Time (24 hrs)	End time (24 hrs)	Wind Speed	Wind Direction	Rain	Cloud Height	Cloud Cover	Visibility	Frost	Snow
20/10/2022	CD	14:00	17:30	3	SW	4	2	8/8	2	0	0
27/10/2022	CD	08:00	11:30	3	SE	1	2	8/8	4	0	0
08/11/2023	CD	07:00	10:00	3	S	0	2	6-8/8	2	0	0

Date	Surveyor	Start Time (24 hrs)	End time (24 hrs)	Wind Speed	Wind Direction	Rain	Cloud Height	Cloud Cover	Visibility	Frost	Snow
22/11/2022	CD	07:45	10:45	3	NW	0	2	4/8	2	0	0
15/12/2022	CD	12:00	16:00	2	NW	0	-	0/8	2	2	0
29/12/2022	CD	11:00	15:00	3-4	SW	0	2	6-8/8	2	0	0
12/01/2023	CD	10:00	14:00	2	SW	0	2	3-5/8	2	0	0
26/01/2023	CD	10:00	13:45	3	N	0	2	2-4/8	2	0	0
09/02/2023	CD	09:00	13:30	2-3	SW-W	0	2	4/8	2	0	0
28/02/2023	CD	10:30	14:00	2	NE	1	2	8/8	2	0	0
29/03/2023	CD	11:45	15:30	2	S	0-1	2	8/8	2	0	0
31/03/2023	CD	13:00	17:00	2-3	NE	0-1	2	8/8	2	0	0
20/04/2023	CD	07:20	11:20	2	NE	0	2	0/8	2	0	0
21/04/2023	CD	06:50	10:30	3	NE	0-1	2	8/8	2	0	0
28/04/2023	CD	12:00	14:00	1	N	0	2	8/8	2	0	0
29/04/2023	CD	13:00	17:00	1	SW	1-0	2	8/4	2	0	0
09/05/2023	CD	07:45	12:30	1-2	SW-NW	0	2	4-6/8	2	0	0
10/05/2023	CD	08:45	12:30	1	W	0-1	2	0-8/8	2	0	0

Table A2.4: Breeding Bird Survey Effort 2021.

Date	Surveyor	Start Time (24 hrs)	End time (24 hrs)	Wind Speed	Wind Direction	Rain	Cloud Height	Cloud Cover	Visibility	Frost	Snow	Temperature (°C)
26/04/2021	CD	07:00	11:00	2	E	0	2	2/8	2	0	0	5
27/04/2021	CD	07:00	11:00	2	SE	0	2	6/8	2	0	0	6
28/04/2021	CD	07:00	11:00	4	E	0	2	5/8	2	0	0	8
19/05/2021	CD	07:00	11:00	3	NW	0	2	1/8	2	0	0	15
20/05/2021	CD	07:00	11:00	2	SE	0	2	3/8	2	0	0	10
21/05/2021	CD	07:00	11:00	5	SW	0	2	7/8	2	0	0	10
27/05/2021	CD	07:00	11:00	2	W	0	2	5/8	2	0	0	9
21/06/2021	CD	07:00	10:00	4	NE	0	2	6/8	2	0	0	15

28/06/2021	CD	07:00	11:00	4	NE	0	2	5/8	2	0	0	15
29/06/2021	CD	07:00	10:30	2	N	0	2	7/8	2	0	0	12
30/06/2021	CD	07:00	10:30	3	NW	0	2	6/8	2	0	0	14
29/05/2021	CD	07:00	11:00	2	W	0	2	3/8	2	0	0	19

Table A2.5: Breeding Bird Survey Effort 2023.

Date	Surveyor	Start Time (24 hrs)	End time (24 hrs)	Wind Speed	Wind Direction	Rain	Cloud Height	Cloud Cover	Visibility	Frost	Snow	Temperature (°C)
24/04/2023	CD	06:00	09:00	2-3	NW	0	2	7-8/8	2	0	0	5-8
11/05/2023	CD	06:00	10:00	1	W-NW	0-1	2	6	2	0	0	10-13
05/06/2023	CD	05:30	09:00	1	NE	0	2	6	2	0	0	7-13

Annex 3

Schedule 1 Species

Barn Owl

Incidental observations of a pair of barn owls suspected to be breeding within a barn owl box located within the Site were made during bat surveys undertaken in Spring 2023, the box is located along the southern boundary. The grid reference can be made available on request.

Hobby

An observation of a hobby flying low over suitable woodland breeding habitat within the 600m buffer to the north-west of the Site was made whilst undertaking ecological surveys within the Site in May 2023. The grid reference can be made available on request.