



ARCUS

TECHNICAL APPENDIX 8.3: ORNITHOLOGY SURVEY REPORT

RETFORD CIRCULAR ECONOMY PROJECT

LOUND HIVE LIMITED

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TABLE OF CONTENTS

1	SUMMARY	2
2	INTRODUCTION AND BACKGROUND	3
	2.1 Structure of Report	3
	2.2 Legislation and Planning Policy	3
	2.3 Terminology and key references	3
	2.4 Consultation	4
3	METHODS	5
	3.1 Desk Study	5
	3.2 Non-breeding Season Survey	5
	3.3 Breeding Season Surveys	6
	3.4 Species/Surveys Scoped Out	7
4	RESULTS	8
	4.1 Desk Study	8
	4.2 Non-breeding Season Surveys	11
	4.3 Breeding Season Surveys	25
5	RESULTS SUMMARY	28
	5.1 Site Assemblage – Non-breeding Season	28
	5.2 Site Assemblage – Breeding Season	28
	5.3 Sutton and Lound Gravel Pits SSSI	29

APPENDIX A – LEGISLATION AND PLANNING POLICY

APPENDIX B – BIRD SPECIES NAMES AND CONSERVATION DESIGNATIONS

APPENDIX C – FIGURES

APPENDIX D – DATA TABLES

Survey visit details

Desk Study Species Records

NBBS raw data

1 SUMMARY

Arcus Consultancy Services Ltd (an ERM company) was commissioned by Lound Hive Limited to undertake ornithology surveys and assessment of land south of Lound Low Road, Nottinghamshire ('the Site').

This report presents the methods and results of the desk study and field surveys, which are used to inform an impact assessment within a separate ES Chapter.

The Site is primarily sheep-grazed pasture of low ornithological value; however, boundary habitats support a wider assemblage of birds, including birds of conservation concern throughout the year. The adjacent SSSI and nature reserve are regionally important, particularly for waterbirds, and winter surveys of waterbodies closest to the Site identified a variety of wildfowl species in small to moderate numbers.

Abbreviations used in this report:

BoCC	Birds of Conservation Concern
EcIA	Ecological Impact Assessment
ES	Environment Statement
LWS	Local Wildlife Site
NBBS	Non-breeding Bird Survey
NCC	Nottinghamshire County Council
NWT	Nottinghamshire Wildlife Trust
SBB	Survey of Breeding Birds
SSSI	Sites of special scientific interest

2 INTRODUCTION AND BACKGROUND

Arcus Consultancy Services Ltd (Arcus) was commissioned by Lound Hive Limited (the 'Applicant') to undertake ecology surveys on land south of Lound Low Road, Nottinghamshire (the 'Site'). The surveys were designed to inform an Ecological Impact Assessment (EcIA) which is presented within an Environmental Statement (ES) submitted in support of a planning application for the extraction of pulverised fuel ash (PFA) from former disposal lagoons (the 'Proposed Development').

This report describes the methods and results of the ornithology surveys, including a desk study, with non-breeding and breeding season surveys of the Site and surrounds undertaken, and forms a Technical Appendix to the Ecology and Ornithology chapter (Chapter 8) of the ES.

2.1 Structure of Report

The report is supported by the following appendices:

- Appendix A – Legislation and Planning Policy
- Appendix B – Bird Species Names and Conservation Status'
- Appendix C – Figures
 - Figure 1: Site and Survey Areas
 - Figure 2: Off-Site waterbodies
 - Figure 3a–3c: SBB Results
- Appendix D – Data Tables

2.2 Legislation and Planning Policy

Relevant legislation and planning policies are summarised in Appendix A.

2.3 Terminology and key references

Throughout this report, the following terms are frequently used:

The Site: The land area in which the Proposed Development would occur;

The Proposed Development: All works within the Site relating to the extraction, processing, and transport of PFA.

Species of conservation concern – This term refers to any species matching one or more of the following criteria, which will be a key focus of the assessment. The term is used to refer to species at all times of year, irrespective of the season of, or justification for, classification under the respective legislation or guidance:

- Schedule 1-listed species on the Wildlife and Countryside Act 1981 (as amended)¹;
- Annex I-listed species on the Birds Directive²;
- Species of Principal Importance listed on the Natural Environment and Rural Communities (NERC) Act, 2006³;
- Red- and Amber-listed Birds of Conservation Concern (BoCC)⁴;
- Nottinghamshire's Birds of Conservation Concern (2016)⁵; and/or

¹ <https://www.legislation.gov.uk/ukpga/1981/69> [Accessed October 2022]

² The Birds Directive (2009/147/EC). Available from: https://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm. [Accessed April 2022]

³ <https://www.legislation.gov.uk/ukpga/2006/16/contents> [Accessed October 2022]

⁴ 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.

⁵ Cornish, C., Crouch, N., & Parkin, D.T. Nottinghamshire's Birds of Conservation Concern (Revised and Updated 2016). Available to download from: <https://www.nottsbirders.net/recording.html> [Accessed April 2022]

- Interest features of Sutton and Lound Gravel Pits SSSI⁶.

For brevity and readability, British vernacular species names are used throughout this report. Bird nomenclature and taxonomy follow the British List, as maintained by the British Ornithologists' Union⁷, with a list of species, scientific names and conservation status' provided in Appendix B.

2.4 Consultation

Consultation with Nottinghamshire County Council (NCC), Natural England and Nottinghamshire Wildlife Trust (NWT) has been carried out.

All consultees confirmed the method and scope of surveys was appropriate and commented on the nature of effects to be considered as part of any impact assessment. Further details of consultation are included in the ES Chapter.

⁶ Sutton and Lound Gravel Pits SSSI citation. Available online at:
<https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S2000458&SiteName=&countyCode=33&responsiblePerson=&SeaArea=&IFCAArea=> [accessed April 2022]

⁷ <https://bou.org.uk/british-list/>

3 METHODS

3.1 Desk Study

Natural England's Multi Agency Geographic Information for the Countryside⁸ (MAGIC) website was consulted to obtain information about local or national statutory designated sites such as Local Nature Reserves (LNR) and Sites of Special Scientific Interest (SSSI) within 2 km of the Site. A search for sites in the National Site Network (Special Areas of Conservation (SAC), Special Protection Areas (SPA) or Ramsar sites) within 5 km of the Site was also undertaken.

Nottinghamshire Biological and Geological Records Centre (NBGR) was consulted for local records of features of ecological interest within 2 km of the Site, which included non-statutory designated Local Wildlife Sites (LWS) and notable and protected bird species. Records were filtered to those from 1st January 2012 onward with location accuracy to at least 1 km².

Additionally, Wetland Bird Survey (WeBS) Core Count data⁹ were obtained from the British Trust for Ornithology, to provide recent data from the adjacent Sutton and Lound Gravel Pits SSSI and give context to the observations collected during the surveys.

3.2 Non-breeding Season Survey

3.2.1 Complete non-breeding season, 2020–2021

Non-breeding Bird Surveys (NBBS) were carried out between October 2020 and March 2021 to identify the non-breeding season bird interests within the Site and surrounds.

Visits were carried out twice per month, at approximately fortnightly intervals, within the NBBS Area. The NBBS Area included the Site with an additional a 500 m buffer, where accessible (Figure 1, Appendix C). The NBBS included counts of waterbirds on the waterbodies closest to the Site, some of which fell partially or entirely outside the NBBS, but are included to provide additional information and context to other results. Surveying the Site was prioritised during all visits, with the buffer surveyed afterwards.

The NBBS used a variation of the "look-see" method by Bibby (2000)¹⁰, and involved the surveyor walking the NBBS Area and recording all bird species detected (by sight or sound). The NBBS focussed on recording species of conservation concern, with a particular focus on features of the adjacent Sutton and Lound Gravel Pits SSSI and aggregations of birds, such as waders, gulls, and granivorous species such as finches and buntings. To aid observation, a thermal imaging telescope was used to search potentially suitable habitat for cryptic species, notably roosting long-eared owl.

Details of survey dates, times, and hourly weather observations are provided in Appendix D.

3.2.2 Opportunistic surveys, 2022

The NBBS described above provided a full and robust dataset for use in the assessment and, as such, completion of a second complete year of surveys was not considered necessary. This was supported in conversations with consultees, including the NCC and NWT.

⁸ Multi Agency Geographic Information for Countryside (MAGIC) [Online] Available at: <https://magic.defra.gov.uk/home.htm>

⁹ Data were provided by WeBS, a Partnership jointly funded by the British Trust for Ornithology, Royal Society for the Protection of Birds and Joint Nature Conservation Committee, in association with The Wildfowl & Wetlands Trust, with fieldwork conducted by volunteers

¹⁰ Bibby, C.J., Burgess, N.D., Hill, D.A. and Mustoe, S.H. (2000). *Bird Census Techniques, 2nd edition*. Academic Press, London

However, in order to understand the potential inter-annual variation in non-breeding season bird interest, some opportunistic surveys were carried out in early 2022. The methods matched those described previously but surveys were timed to take place after periods of heavy or prolonged rainfall, conditions that, theoretically, could cause surface-flooding within the Site and therefore attract greater numbers of waterbirds, including features of the SSSI.

The 2021–22 winter had below average rainfall, and therefore only two visits were carried out, one in January and one in February 2022. There was no surface-water within the Site during either visit and it is understood that there was no flooding on Site during the 2021–22 winter period.

Details of survey dates, times, and hourly weather observations are provided in Appendix D.

3.2.3 Survey Limitations

Access to some land north of the Site was restricted, potentially resulting in elements of the wider bird assemblage being under-recorded. However, the land to the north of the Site has higher levels of disturbance and habitats less suited to target species, particularly those associated with the SSSI. Any notable waterbodies were viewed from a distance using a telescope and it is highly unlikely that the restricted areas would support any species or numbers that would influence the assessment and, therefore, this limitation is not considered significant.

Survey visits were generally carried out in good weather although, given the number of visits carried out, it was not always possible to avoid periods of rain or strong winds.

Overall, the results are considered an accurate reflection of the bird assemblage at the Site and surrounds.

3.3 Breeding Season Surveys

A Survey for Breeding Birds (SBB) was carried out between March and July 2021 to quantify the breeding bird assemblage within the Site and surrounds.

The SBB was carried out within the SBB Area (Figure 1, Appendix C), which included the Site and buffer of up to 500 m, where accessible. Surveying the Site was prioritised during all visits, with the buffer surveyed afterwards.

Initially, the SBB followed a reduced version of the British Trust for Ornithology's (BTO) method for the Common Birds Census (CBC)¹¹; however, during the course of the surveys new guidance was published and it was possible to adopt this for the latter part of the season¹². The overall recording methods are comparable, with the CBC being used as a basis for the revised guidance, and in line with the new guidance, a total of six visits were completed. During each visit the surveyor walked slowly around the SBB Area recording and mapping all species detected (by sight or sound), including behavioural observations where applicable. Survey efforts focused on field margins and hedgerows, with open habitats searched using binoculars.

Surveys were generally carried out in good weather and lasted for up to six hours. Five visits were completed primarily during the morning, with one visit in the afternoon/dusk period to detect species more active at this time.

Details of survey dates, times, and hourly weather observations are provided in Appendix D.

¹¹ Marchant, J. (1983) *Common Birds Census Instructions*. British Trust for Ornithology, Thetford.

¹² Bird Survey & Assessment Steering Group. (2022). Bird Survey Guidelines for assessing ecological impacts, v.0.1.6. <https://birdsurveyguidelines.org> [Accessed April 2022; May 2021 version was consulted at the time of the surveys]

3.3.1 Data analysis

Data analysis focused on identifying breeding territory locations of species of conservation concern, as defined in section 2.3.

To analyse the data, all registrations of species of conservation concern were transferred from the field maps to produce 'species summary maps' from which the number and distribution of likely territories for each species could be determined. The method was based on that described by Bibby *et al.*¹⁰ with an element of professional judgement.

For most species, a precautionary approach was taken and a bird was deemed to be holding territory if it was recorded singing or exhibiting other behaviour indicative of breeding during two of the six SBB visits. For some species, subject to their ecology and/or detectability, a pair recorded in apparently suitable breeding habitat or pairs or individuals recorded consistently in a location were considered indicative of a territory. For more mobile species (e.g., waders) a minimum of two registrations in an area, or definitive evidence (e.g., nest or young chicks), was recorded as a territory.

Between the completion of the surveys and the production of this report, BoCC 5⁴ was published, superseding BoCC 4¹³. For this assessment, BoCC 5 has been used as the prevailing measure of conservation status even though not all newly amber-listed species were recorded in detail. Some changes were foreseen but others, notably the elevation of woodpigeon and wren to the Amber list, were unexpected and due to the abundance and ubiquity of these species they were not mapped in detail. This is addressed in greater detail within the results (section 4.3).

3.3.2 Survey Limitations

The survey guidance states that the entirety of the Site should be sampled to a minimum distance of 50 m; however, given the very open nature and low value of habitats within the Site, this was not considered necessary to identify the breeding bird assemblage. Within the buffer, access was constrained to existing paths and/or public rights of way.

The bird breeding season can be protracted and influenced by local and national weather events, species ecology and the annual variation in on-site grazing practice, among many other factors. It is inevitable that not all birds will be recorded during every visit and as a result some species may be over- or under-recorded. Reactive application of the latest guidance, despite its release part way through the survey, combined with a precautionary approach to analysis, aims to address this potential limitation and provide the most accurate baseline possible from the available data.

Despite the limitations identified, the survey results are considered to be an accurate reflection of the breeding bird interest at the Site.

3.4 Species/Surveys Scoped Out

No species-specific or non-standard surveys were considered necessary to accurately identify the baseline condition.

The NBBS were thorough, with two visits per month, and included several methods to detect birds. The full application of the revised breeding season survey guidance¹² has provided a robust dataset for a project of this nature.

¹³ Eaton M.A., Aebischer N.J., Brown A.F., Hearn R.D., Lock L., Musgrove A.J., Noble D.G., Stroud D.A. and Gregory R.D. (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 108, 708–746.

4 RESULTS

4.1 Desk Study

4.1.1 Designated Sites

There are no National Site Network sites located within 5 km of the Site. The closest such site is Thorne & Hatfield Moors SPA, located approximately 18.3 km north of the Site. The SPA is designated for nightjar and, given the distance between the areas and habitat requirements of this species, there is not considered to be any realistic pathway of effects from the Proposed Development.

There is one UK statutory designated site within 2 km: Sutton and Lound Gravel Pits SSSI (Table 4.1).

There are six non-statutory LWS within 2 km of the Site, the closest being Sutton and Lound LWS, located within and adjacent to the Site. Those noted for their ornithological interest are included in Table 4.1. Further details of all designated sites are included in Technical Appendix 8.1: Ecology Results Report.

Table 4.1: Summary of Designated Sites within 2 km of the Site

Site and designation	Minimum distance and direction (km) from the Site	Description/reason for designation
Statutory designated sites		
Sutton and Lound Gravel Pits SSSI	Adjacent to the south (and partially within the Site boundary)	Extensive areas of open water lagoons that support a variety of breeding, wintering and passage birds. Also supports a nationally important population of wintering gadwall. Adjacent to the lagoons lie areas of open grassland, acidic scrub and willow dominated woodland. The site is one of the most important localities for passage and over-wintering wildfowl in the East Midlands. Designated features are: <ul style="list-style-type: none"> • Gadwall (aggregation of non-breeding birds); • Breeding bird assemblage (lowland open waters and their margins); and • Variety of passage bird species. Part of the SSSI is managed as the publicly accessible Idle Valley Nature Reserve by NWT.
Non-statutory designated sites		
Sutton and Lound LWS	Adjacent to the south (and partially within the Site boundary)	The site comprises sand and gravel pits covering approximately 450 ha. This includes part of the Sutton and Lound SSSI. The River Idle borders the site along the eastern boundary. The site contains a variety of habitats including large areas of open water, tall ruderal vegetation, grassland, secondary and relict woodland, scrub and marshes. The site supports a range of breeding and wintering wetland birds.
Tiln North and Conservation Lake LWS	1.1 km east	Several gravel pits, designated for ornithological interest.

4.1.2 Species Records

The filtered data from NGBR returned 23,542 records of 221 bird species. A high proportion of the records (>95 %) were from the adjacent Sutton and Lound gravel pit complex, including the nature reserve.

The high number of records includes a complete range of species likely to be found in the habitats surrounding the Site as well as regional and national rarities. The assemblage and volume of records highlights not only the importance and value of the area, but also the high presence of birdwatchers visiting the area.

A table summarising the records is included in Appendix D.

4.1.3 WeBS data

WeBS data was obtained for Sutton and Lound Gravel Pits (WeBS location code: 37262), for the most recent five years available (2016/17 to 2020/21). Annual peak counts (and the month recorded), together with the 5-year means of peak counts, are presented in Table 4.2 for each of the 58 species recorded during the 5-year period⁹.

Table 4.2: Summary of WeBS Peak Counts at Sutton and Lound Gravel Pits

Species	Annual peak count*					5-year mean of peak counts
	2016/17	2017/18	2018/19	2019/20	2020/21	
Canada goose	250 (Oct, Feb)	242 (Jun)	296 (Sep)	320 (Oct)	289 (Nov)	279
Barnacle goose	2 (Mar)	0	2 (Nov)	0	0	<1
Greylag goose (British/Irish)	999 (Jan)	1,303 (Nov)	1,151 (Sep)	1,015 (Oct)	742 (Oct)	1,042
Pink-footed goose	7 (Mar)	4 (Nov)	0	0	1 (Apr)	2
European white-fronted goose	21 (Mar)	0	0	0	0	4
Mute swan	229 (Jan)	226 (Jul)	198 (Sep)	203 (Sep)	207 (Nov)	213
Whooper swan	113 (Feb)	81 (Feb)	129 (Jan)	0	54 (Dec)	75
Egyptian goose	12 (Nov)	13 (Feb)	16 (Aug)	13 (May)	20 (Aug)	15
Shelduck	17 (Jan)	22 (Jan)	28 (Mar)	8 (Dec, Mar)	11 (Dec, Apr)	17
Mandarin duck	0	0	0	0	1 (Sep)	<1
Garganey	0	2 (Jun)	7 (Aug)	1 (May)	0	2
Shoveler	202 (Feb)	196 (Jan)	309 (Feb)	306 (Sep)	172 (Nov)	237
Gadwall	358 (Dec)	537 (Jan)	451 (Sep)	563 (Sep)	579 (Aug)	498
Wigeon	1,025 (Nov)	888 (Dec)	737 (Nov)	705 (Dec)	620 (Oct)	795
Mallard	359 (Jul)	526 (Jul)	525 (Aug)	266 (Dec)	343 (Dec)	404
Pintail	3 (Oct)	1 (Nov)	6 (Nov)	8 (Oct)	12 (Apr)	6
Teal	256 (Nov)	421 (Jan)	343 (Jan)	135 (Dec)	207 (Dec)	272

Species	Annual peak count*					5-year mean of peak counts
	2016/17	2017/18	2018/19	2019/20	2020/21	
Red-crested pochard	275 (Oct)	197 (Oct)	200 (Sep)	184 (Oct)	175 (Oct)	206
Pochard	219 (Nov)	159 (Jan)	299 (Jan)	163 (Sep)	175 (Sep)	203
Tufted duck	582 (Mar)	428 (Jul)	487 (Mar)	317 (Mar)	515 (Dec)	466
Goldeneye	48 (Mar)	48 (Jan)	65 (Feb)	51 (Mar)	31 (Dec)	49
Smew	0	1 (Feb, Apr)	4 (Mar)	1 (Dec, May)	1 (Apr)	1
Goosander	25 (Jan, Feb)	58 (Feb)	34 (Jan)	18 (Dec)	2 (Sep)	27
Water rail	6 (Nov)	2 (Jul, Sep, Oct, Nov, Dec)	4 (Mar)	2 (Sep)	1 (Oct, Nov, Apr)	3
Moorhen	26 (Jan)	25 (Jul)	56 (Jan)	24 (Oct)	24 (Aug, Sep, Apr)	31
Coot	1,561 (Nov)	1,460 (Oct, Dec)	1,286 (Dec)	1,226 (Dec)	1,624 (Nov)	1,431
Little grebe	52 (Oct)	28 (Sep)	58 (Sep)	32 (Oct)	94 (Sep)	53
Red-necked grebe	0	0	1 (Dec, Jan)	0	0	<1
Great crested grebe	43 (May)	35 (Jul)	42 (Sep)	14 (Sep)	26 (Sep)	32
Black-necked grebe	1 (Aug, Mar)	1 (Feb, Apr)	1 (Sep)	0	0	<1
Oystercatcher	30 (Mar)	21 (Feb)	19 (Mar)	24 (Mar)	13 (Jun)	21
Avocet	21 (May)	9 (Apr)	11 (Apr)	1 (Jul)	8 (Apr)	10
Lapwing	2,710 (Feb)	812 (Jul)	1,343 (Dec)	599 (Oct)	1,349 (Dec)	1,363
Golden plover	0	0	0	0	175 (Dec)	35
Grey plover	1 (May)	0	0	0	0	<1
Ringed plover	4 (Mar, Apr)	2 (Apr)	10 (Sep)	0	2 (Jun)	4
Little ringed plover	4 (May, Jun)	2 (Jun)	6 (Apr)	1 (May)	7 (Jun)	4
Whimbrel	0	0	0	1 (May)	0	<1
Curlew	0	1 (Sep, Feb)	0	0	0	<1
Black-tailed godwit	11 (Jul)	0	0	0	0	2
Turnstone	3 (May)	0	0	0	0	<1
Ruff	8 (Nov)	3 (Oct, Jan)	9 (Sep)	5 (Sep)	3 (Nov)	6
Dunlin	21 (May)	1 (Sep, Dec)	4 (Sep)	2 (Sep)	1 (Dec, May)	6
Little stint	4 (Aug)	1 (Sep)	0	0	0	1

Species	Annual peak count*					5-year mean of peak counts
	2016/17	2017/18	2018/19	2019/20	2020/21	
Woodcock	0	1 (Dec)	0	0	0	<1
Jack snipe	0	0	0	0	1 (Apr)	<1
Snipe	2 (Dec, Apr)	8 (Oct)	27 (Nov)	30 (Oct)	65 (Nov)	26
Common sandpiper	2 (Aug)	2 (Jul)	1 (Apr)	2 (Mar)	4 (Jul)	2
Green sandpiper	6 (Jul)	5 (Jul)	6 (Aug)	5 (Jul)	4 (Jul)	5
Redshank	13 (Apr)	3 (Apr, Jun)	7 (Apr)	8 (May, Jun)	10 (Apr)	8
Greenshank	3 (Aug)	2 (Sep)	6 (Aug)	1 (Jul, Sep)	0	2
Cormorant	47 (Feb)	41 (Feb)	43 (Dec)	56 (Dec)	46 (Oct)	47
Spoonbill	0	0	0	1 (Jul)	0	<1
Bittern	0	0	0	1 (Jun)	1 (Nov, Apr)	<1
Grey heron	17 (Jul)	9 (Nov)	10 (Jul)	7 (Jun)	5 (Jun)	10
Great white egret	3 (Mar)	3 (Nov)	8 (Jan)	4 (Sep)	6 (Dec)	5
Little egret	21 (Oct)	19 (Sep)	22 (Sep)	15 (Sep)	8 (Nov)	17
Kingfisher	1 (Jul, Mar, May)	2 (Sep)	2 (Mar, Apr)	2 (Mar)	1 (Dec)	2

4.2 Non-breeding Season Surveys

Table 4.3 provides a summary of count data for all waterfowl species, and other non-passerines of conservation concern associated with wetland habitats (e.g. marsh harrier and kingfisher) that were recorded during the 2020–21 NBBS within the NBBS Area and each of the seven surrounding waterbodies that were surveyed (shown in Figures 1 and 2, Appendix C). Full results for these species are presented in Appendix D.

Table 4.3: Summary of 2020–21 NBBS count data for all waterfowl species, and other non-passerines of conservation concern associated with wetland habitats

Species	Peak count (and recording month); and no. of visits birds recorded (<i>italicised</i>)									Summary
	Site	Lake 1	Lake 2	Lake 3	Lake 4	Lake 5	Lake 6	Lake 7	In flight only	
Canada goose	350 (Feb); <i>5</i>	140 (Jan); <i>2</i>	49 (Oct); <i>5</i>	120 (Feb); <i>1</i>	126 (Nov); <i>6</i>	27 (Mar); <i>1</i>	133 (Jan); <i>9</i>	18 (Oct); <i>1</i>	296 (Jan); <i>6</i>	Flocks of Canada goose (numbering 22–350 birds) were recorded on the Site in December, February and March. This included registrations of foraging geese during both December visits, including a flock of 116 Canada geese in the west of the Site and 94 in the east during the first visit, and 142 in the west during the second visit. The species was also frequently present at Lake 6 (51–133 birds) and regularly at Lakes 2 (4–49 birds) and 4 (2–126 birds). It was present only occasionally (1–2 visits) at the other four lakes (4–140 birds). Flights were also recorded over the NBBS Area between late October and early January, with numbers (19–296 birds) generally increasing over this period.
Greylag goose	226 (Feb); <i>5</i>	38 (Jan); <i>2</i>	31 (Nov); <i>2</i>	4 (Mar); <i>1</i>	55 (Nov); <i>5</i>	41 (Mar); <i>1</i>	360 (Dec); <i>9</i>	38 (Nov); <i>1</i>	352 (Jan); <i>8</i>	Flocks of greylag goose (numbering 14–226 birds) were recorded on Site in November, December, February and March. This included registrations of foraging geese during both December visits, including a flock of 81 greylag geese in the east of the Site during the first visit and 32 in the north-east during the second visit. The species was also frequently present at Lake 6 (51–530 birds) and regularly at Lake 4 (4–55 birds). It was present only occasionally (1–2 visits) at the other five lakes (2–41 birds). Variable numbers (4–352 birds) were also regularly recorded in flight over the NBBS Area.
Pink-footed goose	0	0	0	0	0	0	0	0	60 (Nov); <i>1*</i>	A flock of c.60 pink-footed geese was recorded flying south-west over the east of the Site during the first November visit. A flock of 130 birds was also noted in the wider area, flying south-west to the south of Lake 6 (more than 500 m from the Site), during the first survey visit in November.
Mute swan	0	0	34 (Oct); <i>7</i>	0	12 (Nov); <i>10</i>	8 (Oct); <i>4</i>	48 (Dec); <i>10*</i>	4 (Oct); <i>3</i>	8 (Nov); <i>6</i>	Mute swan was frequently present at Lakes 6 (7–48 birds), 2 (4–34 birds) and 4 (2–12 birds), and low numbers were also present infrequently at Lakes 5 (2–8 birds) and 7 (1–4 birds).

Species	Peak count (and recording month); and no. of visits birds recorded (italicised)									Summary
	Site	Lake 1	Lake 2	Lake 3	Lake 4	Lake 5	Lake 6	Lake 7	In flight only	
										Small numbers (1–8 birds) were also regularly recorded flying over the NBBS Area.
Whooper swan	0	0	0	0	0	4 (Nov); <i>1</i>	0**	0	0	A single flock of four whooper swan was present on Lake 5 during the second November survey. A flock of nine birds was also noted in the wider area, to the south of Lake 6 (more than 500 m from the Site), during the first survey visit in October. Nine whooper swan were also noted in the wider area, to the south of Lake 6, during the first October visit.
Egyptian goose	12 (Feb); <i>4</i>	4 (Dec); <i>1</i>	2 (Mar); <i>1</i>	12 (Nov); <i>1</i>	18 (Mar); <i>4</i>	2 (Oct); <i>1</i>	0	0	12 (Nov); <i>5</i>	Small numbers of Egyptian goose were present within the Site in November, January and February. The species was also recorded at Lake 4 during four visits (2–18 birds) and during a single visit at Lakes 1, 2, 3 and 5.
Mandarin duck	1 (Mar); <i>1</i>	0	0	0	0	0	0	0	0	A single mandarin duck was recorded towards the east of the Site during the March survey visit.
Shoveler	32 (Feb); <i>1</i>	0	62 (Jan); <i>5</i>	6 (Feb); <i>1</i>	6 (Oct); <i>4</i>	51 (Nov); <i>6</i>	93 (Dec); <i>8</i>	0	12 (Feb); <i>1</i>	A flock of 32 shoveler was recorded in a flooded area in the east of the Site during the first February visit, with a second registration of 12 birds flying over the west of the Site during the same survey visit. The species was also frequently present on Lake 6 (24–93 birds) and less regularly on Lakes 2 (8–37 birds), 4 (2–6 birds) and 5 (8–151 birds).
Gadwall	46 (Feb); <i>1</i>	0	19 (Nov); <i>2</i>	0	12 (Jan); <i>4</i>	11 (Nov); <i>3</i>	87 (Jan); <i>8</i>	0	0	A flock of 46 gadwall was recorded in a flooded area in the east of the Site during the first February visit. The species was also frequently present on Lake 6 (4–87 birds) and less regularly on Lake 4 (3–12 birds). It was also occasionally present (during 2–3 visits) on Lakes 2 and 5 (8–19 and 2–11 birds respectively).
Wigeon	0	8 (Feb); <i>2</i>	64 (Dec); <i>7</i>	0	34 (Dec); <i>6</i>	86 (Oct); <i>5</i>	281 (Jan); <i>8</i>	0	70 (Jan); <i>3</i>	Wigeon was frequently present on Lakes 2 and 6 (2–64 and 42–230 birds respectively) and less regularly on Lakes 4 and 5 (4–34 and 18–86 birds respectively). It was also occasionally present in low numbers on Lake 1 (4–8 birds). In addition,

Species	Peak count (and recording month); and no. of visits birds recorded (italicised)									Summary
	Site	Lake 1	Lake 2	Lake 3	Lake 4	Lake 5	Lake 6	Lake 7	In flight only	
										three flocks (numbering 12, 26 and 70 birds) were recorded flying over the Site in January and February.
Mallard	0	32 (Feb); <i>3</i>	67 (Nov); <i>10</i>	36 (Dec); <i>8</i>	70 (Nov); <i>6</i>	63 (Jan); <i>9</i>	131 (Dec); <i>10</i>	4 (Dec); <i>2</i>	80 (Nov); <i>5</i>	Mallard was regularly present at Lakes 2 (12–67 birds), 3 (3–36 birds), 5 (8–63 birds) and 6 (21–131 birds), and less frequently on Lake 4 (12–70 birds). It was present only occasionally (2–3 visits) on Lakes 1 and 7 (6–32 and 2–4 birds respectively). Several flocks (numbering 6–80 birds) were also recorded flying over the NBBS Area but there were no registrations of mallard on Site.
Teal	0	0	16 (Nov); <i>2</i>	12 (Dec); <i>3</i>	24 (Nov); <i>7</i>	46 (Feb); <i>4</i>	134 (Dec); <i>8</i>	0	8 (Nov); <i>1</i>	Teal was frequently present on Lakes 4 and 6 (2–24 and 18–134 birds respectively). Variable numbers (16–46 birds) were also present on Lake 5 during four survey visits, and low numbers were occasionally present (during 2–3 visits) on Lakes 2 and 3 (14–16 and 4–12 birds respectively). In addition, a single flock (eight birds) was recorded flying north over the south–west of the Site during the second November visit.
Red-crested pochard	0	0	130 (Oct); <i>8</i>	0	0	0	26 (Oct); <i>4</i>	0	4 (Oct); <i>1</i>	Red-crested pochard was frequently present on Lake 2 between October and January (3–130 birds) and was also present on Lake 6 during four survey visits between October and December (7–26 birds). In addition, a single flight (4four birds) was recorded flying north over the south–west of the Site during the second October visit.
Pochard	0	0	12 (Dec); <i>3</i>	0	0	12 (Oct); <i>6</i>	64 (Jan); <i>7</i>	0	0	Variable numbers of pochard were regularly present on Lakes 5 and 6 (2–12 and 4–64 birds respectively). Low numbers (6–12 birds) were also present on Lake 2 during three survey visits in November and December.
Tufted duck	0	0	89 (Dec); <i>10</i>	0	8 (Feb, Mar), <i>2</i>	69 (Mar); <i>8</i>	93 (Dec); <i>9</i>	0	0	Tufted duck was regularly present on Lakes 2 (4–89 birds), 5 (12–69 birds) and 6 (29–93 birds), and occasionally present in low numbers on Lake 4 (eight birds present during two consecutive visits).

Species	Peak count (and recording month); and no. of visits birds recorded (<i>italicised</i>)									Summary
	Site	Lake 1	Lake 2	Lake 3	Lake 4	Lake 5	Lake 6	Lake 7	In flight only	
Goldeneye	0	0	6 (Dec); <i>2</i>	0	0	2 (Feb); <i>2</i>	16 (Feb); <i>8</i>	0	0	Low numbers of goldeneye were regularly present on Lake 6 (2–16 birds) and occasionally present on Lakes 2 and 5 (3–6 and 1–2 birds respectively).
Goosander	0	11 (Dec); <i>3</i>	0	0	0	5 (Feb); <i>1</i>	4 (Feb); <i>1</i>	0	3 (Dec); <i>3</i>	Low numbers of goosander (2–11 birds) were occasionally present on Lake 1 in December and February. There were also single registrations on Lakes 5 and 6. Birds were also recorded flying over the NBBS Area during three visits (three birds in December and singles in January and March).
Water rail	0	0	0	0	1 (Jan); <i>1</i>	3 (Jan); <i>3</i>	0	0	0	Water rail was present on Lake 5 on three occasions (three birds in January and singles in October and March). A single bird was also observed on Lake 4 during the first January visit.
Coot	0	0	140 (Nov); <i>9</i>	0	0	63 (Nov, Jan); <i>8</i>	300 (Dec); <i>9</i>	0	0	Moderate to high numbers of coot were regularly present on Lakes 2 (41–140 birds), 5 (24–63 birds) and 6 (53–300 birds).
Little grebe	0	2 (Mar); <i>1</i>	18 (Jan); <i>8</i>	0	0	3 (Jan); <i>1</i>	8 (Oct); <i>2</i>	4 (Mar); <i>5</i>	0	Little grebe was regularly present on Lake 2 (2–18 birds). Low numbers were also sometimes present on Lake 7 (1–4 birds), and occasionally on Lakes 1, 5 and 6 (2–8 birds).
Great crested grebe	0	0	2 (Nov); <i>1</i>	0	0	2 (Oct); <i>1</i>	6 (Oct, Nov); <i>3</i>	0	0	Low numbers of great crested grebe were occasionally present on Lakes 7 (1–4 birds), and occasionally on Lakes 2, 5 and 6 (2–6 birds).
Oystercatcher	4 (Mar); <i>1</i>	2 (Feb, Mar); <i>2</i>	0	0	2 (Feb, Mar); <i>2</i>	0	12 (Feb); <i>1</i>	0	1 (Feb); <i>1</i>	A single oystercatcher was observed flying south over the Site during the second February survey visit and a group of four was recorded in the east of the Site in March. Pairs were also recorded at Lakes 1 and 4 on two occasions and there was a single registration of 12 birds on Lake 6 during the second February visit.
Lapwing	107 (Feb); <i>2</i>	0	0	0	0	0	130 (Dec); <i>6</i>	0	140 (Jan); <i>5</i>	Three lapwing were observed landing in the west of the Site during the first November survey visit. Single flocks were also recorded in the flooded fields in the east of the Site during each of the February visits (numbering 84 and 107 birds respectively). Lapwing flocks (numbering 40–130 birds) were

Species	Peak count (and recording month); and no. of visits birds recorded (italicised)									Summary
	Site	Lake 1	Lake 2	Lake 3	Lake 4	Lake 5	Lake 6	Lake 7	In flight only	
										also regularly recorded on Lake 6. There were also several registrations of birds in flight over the NBBS Area.
Ruff	0	0	0	0	0	2 (Nov); <i>1</i>	0	0	4 (Jan); <i>1</i>	Two ruff were recorded on Lake 5 during the first November survey. Four birds were also observed amongst a flock of c.140 lapwing during the second January visit, flying south-west over the Idle Valley Nature Reserve, which borders the Site to the east.
Woodcock	0	0	0	0	0	0	0	0	1 (Dec); <i>1</i>	A single woodcock flying north-east over the south-west of the Site during the second January survey was the only registration of this species.
Snipe	0	0	0	0	0	0	0	0	17 (Nov); <i>4</i>	Snipe was recorded flying over the NBBS Area during four survey visits, with a single bird flying north over the middle of the Site during the second January visit and a further three flights (17 birds in early November, four in late December and four in early February) in the vicinity of Lake 6 and/or the adjacent Idle Valley Nature Reserve.
Green sandpiper	2 (Oct); <i>6</i>	0	0	0	1 (Dec, Feb); <i>2</i>	0	0	0	1 (Nov, Jan); <i>2</i>	During six of the survey visits between October and February, 1–2 greenshank were present in the middle of the Site (approximate NGR SK 696 849) at a large, established manure pile that had flooded pools within it (registrations were mostly of single birds, with two recorded during the first October survey only). A single bird flying towards this area was also recorded during two survey visits. In addition, there were registrations of a single bird at Lake 4 during two survey visits (early December and late February).
Redshank	0	0	0	0	0	0	0	0	1 (Dec); <i>1</i>	A single redshank flying north-east over the eastern edge of the Site during the first December survey visit was the only registration of this species.
Black-headed gull	650 (Oct,	0	0	70 (Jan); <i>1</i>	70 (Jan); <i>2</i>	120 (Jan); <i>2</i>	140 (Jan); <i>1</i>	0	60 (Oct, Feb); <i>3</i>	Black-headed gull was observed on Site during all but the first survey visit, with total counts of 50–650 birds per visit. The majority of registrations were in the east of the Site and

Species	Peak count (and recording month); and no. of visits birds recorded (italicised)									Summary	
	Site	Lake 1	Lake 2	Lake 3	Lake 4	Lake 5	Lake 6	Lake 7	In flight only		
	Feb); <i>10</i>										included foraging flocks during both December visits (c.130 and 53 birds per visit). It was also noted that gulls present on Site during the first November survey visit, which included approximately 450 black-headed gull, may have roosted on Site overnight, leaving shortly after first light. Counts of 60–120 black-headed gull were also occasionally recorded at Lakes 3–6 and there were several registrations of birds in flight over the NBBS Area.
Common gull	180 (Jan); <i>5</i>	0	0	0	0	0	0	0	0	180 (Jan); <i>1</i>	Common gull was recorded in the east of the Site during all five survey visits between January and March, with total counts of 14–180 birds.
Great black-backed gull	0	0	0	0	0	0	0	0	0	4 (Dec); <i>1</i>	The only registration of great black-backed gull was four birds flying over the north-east of the Site during the first December visit.
Herring gull	32 (Feb); <i>4</i>	0	0	0	0	0	0	0	0	23 (Oct); <i>2</i>	Herring gull was recorded in the east of the Site during four visits between early December and March, with flocks of 4–32 birds recorded. Registrations included six birds foraging in the east of the Site during the first December visit. It was also noted that gulls present on Site during the first November survey visit, which included 23 herring gull, may have roosted on Site overnight, leaving shortly after first light.
Lesser black-backed gull	21 (Nov); <i>1</i>	0	0	0	0	0	0	0	0	11 (Mar); <i>2</i>	A flock of 21 lesser black-backed gull in the east of the Site during the first November survey visit was the only registration of this species on Site; it was noted that they may have roosted on Site overnight, leaving shortly after first light. There were also occasional registrations of birds flying over the west of the Site, with two recorded during the second February visit and 11 during the March visit.
Cormorant	0	0	0	0	0	0	29 (Dec); <i>8</i>	6 (Jan); <i>1</i>	6 (Jan); <i>5</i>	Cormorant was frequently present at Lake 6 (11–29 birds) and there was a single registration (six birds) at Lake 7 in January. Several flights (numbering 1–6 birds) were also recorded over the NBBS Area.	

Species	Peak count (and recording month); and no. of visits birds recorded (italicised)									Summary
	Site	Lake 1	Lake 2	Lake 3	Lake 4	Lake 5	Lake 6	Lake 7	In flight only	
Grey heron	2 (Nov, Feb); 2	0	0	2 (Dec); 3	2 (Oct, Feb); 3	1 (Nov); 1	5 (Nov); 2	0	1 (Nov, Dec, Jan, Mar); 4	Two grey heron were recorded in the south-east of the Site during the early February visit and single birds were observed flying over the Site during four visits. The species was also occasionally present (during 1–4 visits) at Lakes 3–6 (usually single birds, but counts of three and five were recorded at Lake 6).
Great white egret	1 (Mar); 1	0	0	0	3 (Nov); 3	2 (Nov); 5	3 (Dec); 7	0	0	A single great white egret was recorded in the east of the Site during the March survey visit. The species was regularly present at Lake 6 and less frequently at Lake 5, with all counts totalling 1–2 birds. Low numbers (1–3 birds) were also recorded at Lake 4 during three visits in November and December.
Little egret	2 (Nov, Dec); 2***	0	0	2 (Nov); 1***	4 (Oct); 2	0	7 (Nov); 1	0	1 (Oct, Nov); 2	Two little egret were recorded in the north-east of the Site during two survey visits in November and December. There were also two registrations of single birds flying over the Site (in October and November). In addition, low numbers (1–2 birds) were occasionally present between the Lake 3 and 4 complexes, and seven birds were present on Lake 6 during the first November visit.
Kingfisher	0	0	0	0	0	0	0	1 (Nov); 1	0	A single kingfisher was recorded at the northernmost lake within the Lake 7 complex during the first November visit.
<p>*A flock of 130 birds was also observed to the south of Lake 6 during the first November visit, flying south-west; **A flock of nine birds was present to the south of Lake 6 in October; ***Several little egret registrations were between the Lake 3 and 4 complexes and have therefore been 'assigned' to whichever appeared to be closest during a particular survey visit;</p>										

4.2.1 Site and NBBS Area Summary

4.2.1.1 Non-passerine waterbirds

As can be seen from Table 4.3, relatively few waterfowl species and other non-passerine species of conservation concern associated with wetland habitats made use of the habitats within the Site. Black-headed gull was the species recorded most frequently; however, it occurred in variable numbers, with a peak count of 650 birds. Low numbers of green sandpiper (1–2) birds were regularly present towards the middle of the Site (approximate NGR SK 696 849) where they made use of a large, established manure pile that had small flooded pools within it. Canada, greylag and Egyptian geese, and herring and common gulls, were present during 4–5 survey visits. Egyptian goose and herring gull were present in low numbers, while numbers of the other three species were variable. Single marsh harriers were also occasionally observed foraging over the Site and surrounding area. Several other species (mandarin duck, shoveler, gadwall, oystercatcher, lapwing, lesser black-backed gull, grey heron, great white egret and little egret) were recorded during 1–2 survey visits, indicating that they make no more than occasional use of the Site. The majority of these species were present in low numbers, although peak counts of 32 shoveler, 46 gadwall, and 107 lapwing were recorded in February.

During the second January visit (on 22/01/2021), it was noted that water levels were very high and some fields in the north of the Site were partially flooded, including to the south of Lake 6. It was further noted that, while there were large numbers of gulls on Site with birds aggregating prior to roosting, fewer wildfowl were observed in the NBBS Area compared with previous visits, likely because birds had dispersed into the Greater Idle Valley. Many fields, including some within the east of the Site, were partially flooded during both February visits, with relatively large¹⁴ numbers of Canada and greylag geese and smaller numbers of Egyptian geese present in the east of the Site (and dispersed across the wider area) during the first February visit, and relatively large¹⁴ flocks of black-headed gull, common gull and lapwing present in a flooded area in the east of the Site during the second February visit.

It was also noted that gulls present on Site during the first November survey visit, which included approximately 450 black-headed gulls and lower numbers of herring and lesser black-backed gulls (23 and 21 birds respectively), may have roosted on Site overnight, leaving shortly after first light. It was also noted that geese and gulls present on Site during both December survey visits (which included Canada and greylag geese, and black-headed and herring gulls) were foraging.

4.2.2 Other species of conservation concern

In addition to the non-passerine waterbird species described above, three raptor species and 17 passerine species of conservation concern were recorded within the NBBS Area during the 2020–21 NBBS. Registrations are summarised in Table 4.4. As can be seen from the Table, sparrowhawk and kestrel were regularly recorded across the NBBS Area and there were occasional records of tawny owl in the south-east; raptor registrations included a sparrowhawk displaying within the north-east of the NBBS Area during the March visit. Passerine species included small numbers of Cetti's warbler, which is a Schedule-1 listed species, within and just beyond the north-east of the NBBS Area. In addition, flocks of starling, skylark, thrushes (redwing and fieldfare), house sparrow, meadow pipit, finches (brambling, bullfinch, greenfinch, linnet and lesser redpoll) and reed bunting were often present in variable numbers. Song thrush, mistle thrush, dunnock and grey wagtail were also recorded in low numbers. Some species (starling, redwing, fieldfare, grey wagtail and lesser redpoll) were recorded during most or all survey visits, while many others were

¹⁴ In comparison to numbers during previous survey visits

observed most frequently between January and March. Passerines were often observed foraging within the NBBS Area, notably at a well-established manure heap towards the middle of the Site (approximate NGR SK 696 849) and along a track within the north-east of the NBBS Area (within the Lake 4 complex).

Single marsh harriers were recorded flying over the east of the NBBS Area (one of which was over the Site) during four survey visits in October, November, December and January. A single bird was also noted in the wider area, flying south to the south of Lake 6 (more than 500 m from the Site), in December.

Potentially suitable locations were searched by day using a thermal-imaging scope and no roosting long-eared owl were found within the NBBS Area.

Table 4.4: Summary of raptor¹⁵ and passerine species of conservation concern recorded during the 2020–21 NBBS

Species	Approximate total counts during each survey visit (v.)											Notes
	Oct v. 1	Oct v. 2	Nov v. 1	Nov v. 2	Dec v. 1	Dec v. 2	Jan v. 1	Jan v. 2	Feb v. 1	Feb v. 2	Mar v. 1	
Sparrowhawk		1	2	1	1	1	1		1		2	With the exception of the bird recorded during the first January visit, all counts relate to single sparrowhawk in flight. Registrations included a single bird displaying within the north-east of the buffer area during the March visit.
Tawny owl										2	1	There were two registrations of tawny owl, both of which were in the same area of woodland in the south-east of the buffer area (adjacent to the south-western edge of the Lake 7 complex); the registration in February was of two roosting birds.
Kestrel		1	3	1	1		1	2	1		1	Counts include both perched kestrel and a bird in flight during the second November visit. All registrations were of single birds and were concentrated in the north-east of the Site and adjacent buffer area, as well as in the north and west of the buffer area.
Skylark								12	12	5	10	Small numbers of skylark were regularly recorded within the NBBS Area, with most registrations in the north-east and south-west of the buffer area. The peak count during the second January visit included a flock of 11 skylark in the north-east of the buffer area. Several of the counts included singing birds; occasional flights of small numbers of skylark in January and February are also included in the counts.
Cetti's warbler					1	1	3		1			All registrations were of singing or calling Cetti's warbler, with the majority to the north-east of the Site, either within or just beyond the 500 m buffer area, adjacent to Lake complexes 4-6; there was also one registration of a singing male on Site during the second December visit, adjacent to the north-west of the Lake 7 complex.

¹⁵ Excluding marsh harrier, which is summarised in Table 4.3

Species	Approximate total counts during each survey visit (v.)											Notes
	Oct v. 1	Oct v. 2	Nov v. 1	Nov v. 2	Dec v. 1	Dec v. 2	Jan v. 1	Jan v. 2	Feb v. 1	Feb v. 2	Mar v. 1	
Starling		150	90	160	160	170		90	47	140	117	Counts include a single flight of approximately 70 starling over the south of the Site during the first November visit.
Song thrush									1	4	1	All song thrush registrations relate to single singing males at scattered locations across the NBBS Area.
Mistle thrush								2		3	1	All mistle thrush registrations were to the west of Low Farm, in the north-east of the Site and adjacent buffer area.
Redwing	100	80*	35	c.80	60	25	c.40	15	85	7	111	Redwing flocks were regularly recorded across the NBBS Area; counts include two flights (60 birds flying over the north of the Site during the first survey visit in October and seven birds over the south of the site during the second February visit). The total count for the second October visit (marked with an asterisk) comprised a single mixed redwing and fieldfare flock (with no estimates recorded for individual species recorded) and therefore represents an overestimate.
Fieldfare		80*	18	c.60	20	17	12		65	96	558	Fieldfare flocks were regularly recorded across the NBBS Area; a peak count of 558 birds was recorded during the March visit, when several flocks were present in the western part of the NBBS Area. The total count for the second October visit (marked with an asterisk) comprised a single mixed fieldfare and redwing flock (with no estimates recorded for individual species recorded) and therefore represents an overestimate.
House sparrow		30	40				70	80	70	50	49	All house sparrow registrations were in the buffer area, with the majority comprising large feeding flocks along a track within the north-east of the buffer area (within the Lake 4 complex).
Dunnock											7	Small numbers of dunnock were recorded in the buffer area during the March survey visit.

Species	Approximate total counts during each survey visit (v.)											Notes
	Oct v. 1	Oct v. 2	Nov v. 1	Nov v. 2	Dec v. 1	Dec v. 2	Jan v. 1	Jan v. 2	Feb v. 1	Feb v. 2	Mar v. 1	
Grey wagtail	2	2	1	1	1	1	1		1		1	All grey wagtail registrations were of birds at or near a well-established manure heap towards the middle of the Site (approximate NGR SK 696 849). Counts include a single bird in flight during the second December visit.
Meadow pipit	22	16		6			8		12			All meadow pipit registrations were at or near a well-established manure heap towards the middle of the Site (approximate NGR SK 696 849).
Brambling	3	1					4	2	2			With the exception of a single bird near a well-established manure heap towards the middle of the Site (approximate NGR SK 696 849) during the first survey visit in October, all brambling registrations were in the north-east of the buffer area.
Bullfinch			1				10	10	6	14	2	With the exception of six birds near a well-established manure heap towards the middle of the Site (approximate NGR SK 696 849) during the second January visit, all bullfinch registrations were in the south-west of the Site, close to woodland edge.
Greenfinch	30											Approximately 30 greenfinch were recorded amongst a mixed flock of finch species in the north-east of the buffer during the first survey visit in October.
Linnet			20	20				12	12	25	13	All linnet registrations were of small flocks within the Site boundary; birds were typically near the well-established manure heap towards the middle of the Site (approximate NGR SK 696 849) or the woodland strip to the south-west of this.

Species	Approximate total counts during each survey visit (v.)											Notes
	Oct v. 1	Oct v. 2	Nov v. 1	Nov v. 2	Dec v. 1	Dec v. 2	Jan v. 1	Jan v. 2	Feb v. 1	Feb v. 2	Mar v. 1	
Lesser redpoll	100**		51	40	c.60* *	30	70	40**	80	20	70	Lesser redpoll flocks were most frequently recorded within or close to woodland in the south-west of the Site and adjacent buffer area, as well as close to the on-Site woodland south of Lake 3 (and very occasionally at other locations within the NBBS Area). Three of the total counts (marked with two asterisks) included registrations of mixed lesser redpoll and siskin flocks (with no estimates recorded for individual species recorded) and therefore represent overestimates.
Reed bunting							60	100	61	120	14	During each survey visit between January visit 1 and March, a single large reed bunting flock was observed feeding along a track within the north-east of the buffer area (within the Lake 4 complex). Additionally, a single bird was singing in the south-west of the buffer during the first February visit (within the Lake 7 complex), while during the March visit a flock of eight birds on and a further eight singing birds were recorded in the eastern half of the NBBS Area, mostly within the Site boundary).
<p>*Count comprised a single mixed flock of redwing and fieldfare (with no individual estimates recorded for component species) **Includes registrations of mixed lesser redpoll and siskin counts (with no individual estimates recorded for component species).</p>												

4.2.3 Off-site waterbodies

The Site lies within a network of waterbodies, predominantly former gravel pits, which now form part of the Idle Valley Nature Reserve and privately owned wetlands, some of which are used for angling.

Of all of the waterbodies surveyed, Lake 6, located approximately 260 m east of the Site and part of the Sutton and Lound Gravel Pits SSSI, regularly supported the largest numbers of wildfowl and was also one of the most species rich. Whilst they supported much lower numbers of wildfowl than Lake 6, Lakes 2, 4 and 5 (the latter of which is also part of the SSSI) were also more species rich than the other waterbodies, with some species making regular use of them. In contrast, Lakes 1, 3 and 7 (the latter of which also forms part of the SSSI) were typically used by low numbers of a narrow range of waterbirds, very few of which made more than occasional use of these waterbodies.

4.2.4 Opportunistic Surveys, 2022

Two surveys were completed in early 2022, with visits in January and February. Both were scheduled following periods of heavy rain; however, unlike in early 2021, the Site no flooding occurred within the Site.

As such, observations of waterbirds within the Site were mostly limited to geese (Canada, greylag, and Egyptian geese) and gulls. Approximately 640 pink-footed goose overflow the Site during January and two oystercatcher were recorded foraging in grassland habitat in the north of the Site during the February survey.

The non-waterbird assemblage was broadly similar to previous surveys,

4.2.5 Disturbance Events

During most NBBS visits (between 2020 and 2022) it was noted that, there were high levels of human activity associated with Low Farm, including by numerous agricultural vehicles. However, the surveyor did not detect any signs that any birds were disturbed, indicating some habituation to the existing background levels of anthropogenic disturbance.

4.3 Breeding Season Surveys

A total of 65 species was recorded during the SBB. Of these, 43 were species of conservation concern (as defined in section 2.3) including a minimum of 26 that showed evidence of breeding or holding territory. Breeding species of conservation concern (excluding woodpigeon, wren, and Schedule 1-listed species) are summarised in Table 4.5.

Approximate territory locations of species of conservation concern are shown in Figures 3a–3c, Appendix C. Territory locations are shown as the approximate mid-point of observations that were used to identify the territory.

The conservation status of all species recorded is provided in Appendix B.

Table 4.5: Species of conservation concern considered to be breeding or holding territory within the SBB Area in 2021

Species	No. of territories		Details
	SBB Area	Site	
Mute swan	2	0	Two mute swan pairs were present consistently on waterbodies in the buffer, although no nests or chicks were observed.
Mallard	4	0	One female was recorded with ducklings to the north of the Site, with other registrations showing waterbodies where mallard were present consistently through all visits and potentially bred.
Cuckoo	1	0	One male cuckoo was in the adjacent Idle Valley Nature Reserve during June.
Stock dove	2	1	Two stock dove nest sites were identified, one within the north of the Site, and another in the buffer to the south. Both were in nest boxes intended for barn owl.
Turtle dove	1	0	One singing male turtle dove was in suitable habitat in the adjacent Idle Valley Nature Reserve during June.
Great crested grebe	1	0	A pair of great crested grebe were observed with chicks on a waterbody in the adjacent Idle Valley Nature Reserve.
Rook	44 nests	44 nests	One Rookery containing 44 nests was located in woodland on the boundary of the Site.
Skylark	10	1	A minimum of ten skylark territories were recorded within the SBB Area, including one that persisted within the Site and may have bred. An additional four skylark were recorded singing within the Site during early spring (a single occasion in March or April); however, the level of grazing resulted in a habitat that was unsuitable for nesting, and none of these are considered to be bred within the Site and are excluded from the totals.
Willow warbler	33	14	A minimum of 33 willow warbler territories were identified in scrub and woodland across the SBB Area, with 14 in habitats within or bordering the Site itself. Some singing males may have been migrants, so the number of territories identified here is likely to be precautionary.
Sedge warbler	9	0	Nine sedge warbler territories were identified, all within the buffer and mostly in scrub or wetland vegetation adjacent to waterbodies.
Reed warbler	12	1	Twelve reed warbler territories were identified, all beside waterbodies/watercourses, including 11 in the buffer and one on the Site boundary.
Whitethroat	33	13	Whitethroat was common and widespread in scrub within the SBB Area with 33 territories identified, including 13 within the Site.
Song thrush	13	3	A minimum of 13 song thrush territories were present in woodland and hedgerow across the SBB Area, with three territories within the Site.
Mistle thrush	2	2	Two mistle thrush territories were identified, both within the north of the Site.
House sparrow	c.25 pairs	0	Approximately c.25 house sparrow pairs were present across three colonies (five, 10 and 10), all around farms and buildings in the buffer to the north and west of the Site.

Species	No. of territories		Details
	SBB Area	Site	
Dunnock	42	13	Dunnock was abundant in scrub across the SBB Area with 42 territories identified. Most were in the buffer but 13 territories were identified within the site, mostly on the boundary.
Meadow pipit	1	0	One meadow pipit territory was identified in the buffer in the north of the SBB Area, where birds were observed carrying nesting material in April and singing in June.
Bullfinch	3	0	Three bullfinch territories were identified, all in scrub/woodland in the buffer to the south of the Site.
Greenfinch	4	0	Four greenfinch territories were identified, all pertaining to singing males within the buffer.
Linnet	23	15	Approximately 23 linnet territories/pairs were present across the SBB Area, including 15 within the Site.
Yellowhammer	1	0	One yellowhammer territory was identified, with a singing male present in the buffer north of the Site.
Reed bunting	10	1	Ten reed bunting territories were identified across the SBB Area, including one within the Site. Territories were all found in scrub, mostly near to waterbodies.

As of December 2021, woodpigeon and wren are Amber-listed species of conservation concern, both due to the importance of the British breeding populations in the context of wider European populations⁴. Both species are abundant in the UK with notable population increases recorded since the 1970s, and are among the UKs most numerous birds. Both species are present within the Site but, given their population status and trends within the UK, including their ubiquity across many areas and regular presence in heavily disturbed habitats, these species are not considered an important feature and are excluded from detailed analysis.

In addition, a further nine species of conservation concern were observed during the SBB, but showed no evidence of breeding or holding territory:

- Wildfowl: A shelduck was recorded on two occasions. Two shoveler were recorded on a waterbody to the north of the Site during April and July. Gadwall was recorded irregularly at various waterbodies in the wider SBB Area. Tufted duck were recorded at several waterbodies, most consistently on Lake 6, to the west of the Site, where small flocks were observed during most visits. Pochard observed during the early-spring SBB visit were likely lingering wintering birds.
- Waders: One or two oystercatcher were recorded on several occasions. This species likely breeds in the wider gravel pit network, outside the SBB Area.
- Gulls: Herring gull and lesser black-backed gull were seen during most SBB visits, typically transiting over the Site but occasionally foraging in the sheep fields in small numbers.
- Raptors: Kestrel was observed in April but not subsequently. There is negligible foraging habitat within the Site, but the species likely breeds in the adjacent Idle Valley Nature Reserve.
- Other: Great white egret was recorded occasionally in wetland habitats surrounding the Site.

A further 18 bird species (not of conservation concern¹⁶) were recorded, many of which were considered likely to be breeding or holding territory within the SBB Area, but none were recorded in particularly notable numbers or densities: pheasant, collared dove, buzzard, great spotted woodpecker, magpie, jackdaw, carrion crow, blue tit, great tit, swallow, long-tailed tit, chiffchaff, blackcap, treecreeper, blackbird, robin, chaffinch and goldfinch.

4.3.1 Schedule 1-listed species

Several Schedule 1-listed species were recorded during the SBB, as summarised below.

Three of the Schedule 1-listed species are common non-breeding migrants to the UK, namely redwing, fieldfare and brambling, with all records during the early SBB visits pertaining to lingering wintering birds. The Site is outside the breeding range of these species.

Green sandpiper and black redstart were also recorded as migrants. The Site is outside the breeding range of green sandpiper and suboptimal for black redstart, with the single observation of a female black redstart showing no indication of breeding or being part of a territorial pair.

Hobby was observed during May, foraging over woodland and wetland habitats around the Site, but showed no evidence of breeding or territorial behaviour. Bitten was recorded calling from a reed-fringed lake south of the Site during one survey but not subsequently. It is not known if nesting was attempted but it is understood a territorial male was also present in the wider gravel pit complex in 2022¹⁷.

Cetti's warbler was present in wetland habitats around the Site, with a minimum of three territories recorded, the closest of which was approximately 10 m from the Site boundary. There were no records within the Site which lacks optimal habitat.

5 Results Summary

5.1 Site Assemblage – Non-breeding Season

Hedgerows and boundary habitats offer foraging opportunities for a range of passerine species, including individuals and small flocks of species of conservation concern.

Much of the Site is grazed and, as such, most land area is of relatively low value, supporting few birds of note. It provides foraging for flocks of Canada and greylag geese, but use by species of conservation concern is irregular and opportunistic. If the area in the north of the Site floods, wildfowl and gulls will readily use the area but observed numbers were low and it is understood the area does not flood annually. A manure heap within the Site was a temporary feature of value, providing foraging habitat for some species.

5.2 Site Assemblage – Breeding Season

The Site and immediate surrounds support a typical range of species for the geographic location and habitats present.

Much of the Site itself is of low value, as very high grazing pressure results in a habitat unsuitable for most species, providing negligible foraging or nesting opportunities. Boundary habitats, such as hedgerows, scrub, and woodland, including those within the edges of the Site and field boundaries crossing the area, are of higher value and support a broad assemblage of birds, including numerous species of conservation concern.

¹⁶ Green-listed or not assessed BoCC, and/or otherwise not matching the criteria listed in section 2.3.

¹⁷ Records from publically available data sources.

5.3 Sutton and Lound Gravel Pits SSSI

Habitats adjacent to the Site, notably including the Idle Valley Nature Reserve, are of importance, as recognised by the SSSI designation. These habitats are more extensive and varied than those within the Site, and the mosaic of wetlands, scrub, and woodland support greater numbers and a high species richness.

As such, habitats surrounding the Site are of high value, both for their ecological significance and social importance, as a destination for people to visit and engage with birds and nature.

APPENDIX A – Legislation and Planning Policy

The Wildlife and Countryside Act 1981

The Wildlife and Countryside Act 1981¹, as amended by the Countryside and Rights of Way Act (CROW) 2000¹⁸ and the Natural Environment and Rural Communities Act (NERC) 2006³, is the main legislation that protects wildlife in Great Britain, and is the mechanism for defining and protecting nationally important Sites of Special Scientific Interest (SSSI).

The legislation makes it an offence to intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and to disturb any bird species listed under Schedule 1 of the Act, or its dependent young while it is nesting.

The Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 (the 'Habitat Regulations')¹⁹ are the principal means by which Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (the 'Habitats Directive') is transposed into law in England and Wales. The objective of the Habitats Directive is to protect biodiversity through the conservation of natural habitats and species of wild fauna and flora. The Directive lays down rules for the protection, management and exploitation of such habitats and species (including birds, through incorporation of the Birds Directive²) and makes it an offence to deliberately capture, kill or disturb wild animals protected under the Habitat Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

Natural Environment and Rural Communities (NERC) Act 2006

The NERC Act 2006³ places a duty on local planning authorities to have due regard for biodiversity and nature conservation during the course of their operations, and thus ensures that biodiversity is a key consideration in the planning process. The Act also establishes a list of species and habitats of principal importance for the conservation of biodiversity.

National Planning Policy Framework 2021

The National Planning Policy Framework (NPPF) 2021²⁰ sets out the Government's requirement for the planning system in England, and in doing so, establishes the framework within which local planning authorities can develop their own planning policies. The NPPF explicitly addresses the conservation and enhancement of the natural environment, including biodiversity, through paragraphs 174–177.

The Environment Act 2021

The Environment Act 2021²¹ provides for the establishment of the Office for Environmental Protection (OEP). It also provides a framework for improving environmental management to include: waste and resources, water quality, nature and biodiversity and air quality. It aims to deliver long-term targets to improve environmental conditions and reduce pollution.

The Act addresses nature conservation with strengthened obligations on developers to ensure Biodiversity Net Gain (BNG) is achieved for developments, together with establishing routes for strengthening woodland protection and Local Nature Recovery Strategies (LNRSs).

¹⁸ The Countryside and Rights of Way Act 2000. Available from: <https://www.legislation.gov.uk/ukpga/2000/37/contents>.

¹⁹ The Conservation of Habitats and Species Regulations 2017. Available from: <https://www.legislation.gov.uk/uksi/2017/1012/contents/made>

²⁰ Available from: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

²¹ Legislation.gov.uk Environment Act 2021 [Online] Available at: <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted> [Accessed February 2022]

Appendix B – Bird Species Names and Conservation Designations

Table A1 lists English vernacular and scientific names for all bird species mentioned in this report. Nomenclature and taxonomic order are based on the BOU 'British List'⁷.

Designations include:

- Schedule 1: Species listed on Schedule 1 of the Wildlife and Countryside Act (1981)¹;
- Annex I: Species listed on Annex I of the Birds Directive²;
- SPI: Species of Principal Importance (NERC, 2006)³;
- BoCC Red/Amber: Red-/Amber-listed Birds of Conservation Concern (Stanbury, *et al.* 2021⁴);
- Nottinghamshire's Birds of Conservation Concern (2016)⁵; and
- SSSI: Designated (D) and listed Assemblage features (A) of the Sutton and Lound Gravel Pits SSSI⁶.

Table A1: List of English vernacular and scientific names, and conservation designations, of bird species mentioned in this report

Species		Schedule 1 ¹	Annex I ²	SPI ³	BoCC Red ⁴	BoCC Amber ⁴	Notts SoCC ⁵	SSSI ⁶
English (British) vernacular name	Scientific name							
Canada goose	<i>Branta canadensis</i>							
Barnacle goose	<i>Branta leucopsis</i>		Y			Y		
Greylag goose	<i>Anser anser</i>					Y ²²		
Pink-footed goose	<i>Anser brachyrhynchus</i>					Y		
European white-fronted goose	<i>Anser albifrons albifrons</i>			Y	Y			
Mute swan	<i>Cygnus olor</i>						Y	
Whooper swan	<i>Cygnus cygnus</i>	Y	Y			Y	Y	
Egyptian goose	<i>Alopochen aegyptiaca</i>							
Shelduck	<i>Tadorna tadorna</i>					Y	Y	
Mandarin duck ²³	<i>Aix galericulata</i>							
Garganey	<i>Spatula querquedula</i>	Y				Y	Y	A
Shoveler	<i>Spatula clypeata</i>					Y	Y	A
Gadwall	<i>Mareca strepera</i>					Y	Y	D
Wigeon	<i>Mareca penelope</i>					Y	Y	A
Mallard	<i>Anas platyrhynchos</i>					Y	Y	
Pintail	<i>Anas acuta</i>					Y		
Teal	<i>Anas crecca</i>					Y	Y	
Red-crested pochard	<i>Netta rufina</i>							
Pochard	<i>Aythya ferina</i>				Y		Y	A

²² The Amber status of greylag goose refers to the native population occurring in parts of Scotland. Although there is evidence of merging between this population and introduced/re-established birds common and resident throughout much of the UK (Mitchell, *et al.* 2012), the birds at the Site are considered part of the later and are not considered bird of conservation concern in the context of the Site and surrounds.

²³ Mandarin duck is an introduced, non-native species.

Species		Schedule 1 ¹	Annex I ²	SPI ³	BoCC Red ⁴	BoCC Amber ⁴	Notts SoCC ⁵	SSSI ⁶
English (British) vernacular name	Scientific name							
Tufted duck	<i>Aythya fuligula</i>							A
Goldeneye	<i>Bucephala clangula</i>				Y			
Smew	<i>Mergellus albellus</i>		Y		Y			
Goosander	<i>Mergus merganser</i>							
Pheasant	<i>Phasianus colchicus</i>							
Cuckoo	<i>Cuculus canorus</i>			Y	Y		Y	
Stock dove	<i>Columba oenas</i>					Y	Y	
Woodpigeon	<i>Columba palumbus</i>					Y		
Turtle dove	<i>Streptopelia turtur</i>			Y	Y		Y	
Collared dove	<i>Streptopelia decaocto</i>							
Water rail	<i>Rallus aquaticus</i>						Y	
Moorhen	<i>Gallinula chloropus</i>					Y		
Coot	<i>Fulica atra</i>						Y	
Little grebe	<i>Tachybaptus ruficollis</i>							
Red-necked grebe	<i>Podiceps grisegena</i>				Y			
Great crested grebe	<i>Podiceps cristatus</i>							A
Black-necked grebe	<i>Podiceps nigricollis</i>	Y				Y	Y	
Oystercatcher	<i>Haematopus ostralegus</i>					Y	Y	A
Avocet	<i>Recurvirostra avosetta</i>	Y	Y			Y	Y	
Lapwing	<i>Vanellus vanellus</i>			Y	Y		Y	A
Golden plover	<i>Pluvialis apricaria</i>		Y					
Grey plover	<i>Pluvialis squatarola</i>					Y		
Ringed plover	<i>Charadrius hiaticula</i>				Y		Y	A
Little ringed plover	<i>Charadrius dubius</i>	Y					Y	A
Whimbrel	<i>Numenius phaeopus</i>	Y			Y			
Curlew	<i>Numenius arquata</i>			Y	Y		Y	
Ruff	<i>Calidris pugnax</i>	Y	Y		Y			
Dunlin	<i>Calidris alpina</i>				Y			
Little stint	<i>Calidris minuta</i>							
Woodcock	<i>Scolopax rusticola</i>				Y		Y	
Jack snipe	<i>Lymnocyptes minimus</i>						Y	
Snipe	<i>Gallinago gallinago</i>					Y	Y	
Common sandpiper	<i>Actitis hypoleucos</i>					Y		
Green sandpiper	<i>Tringa ochropus</i>	Y				Y		
Redshank	<i>Tringa totanus</i>					Y	Y	A

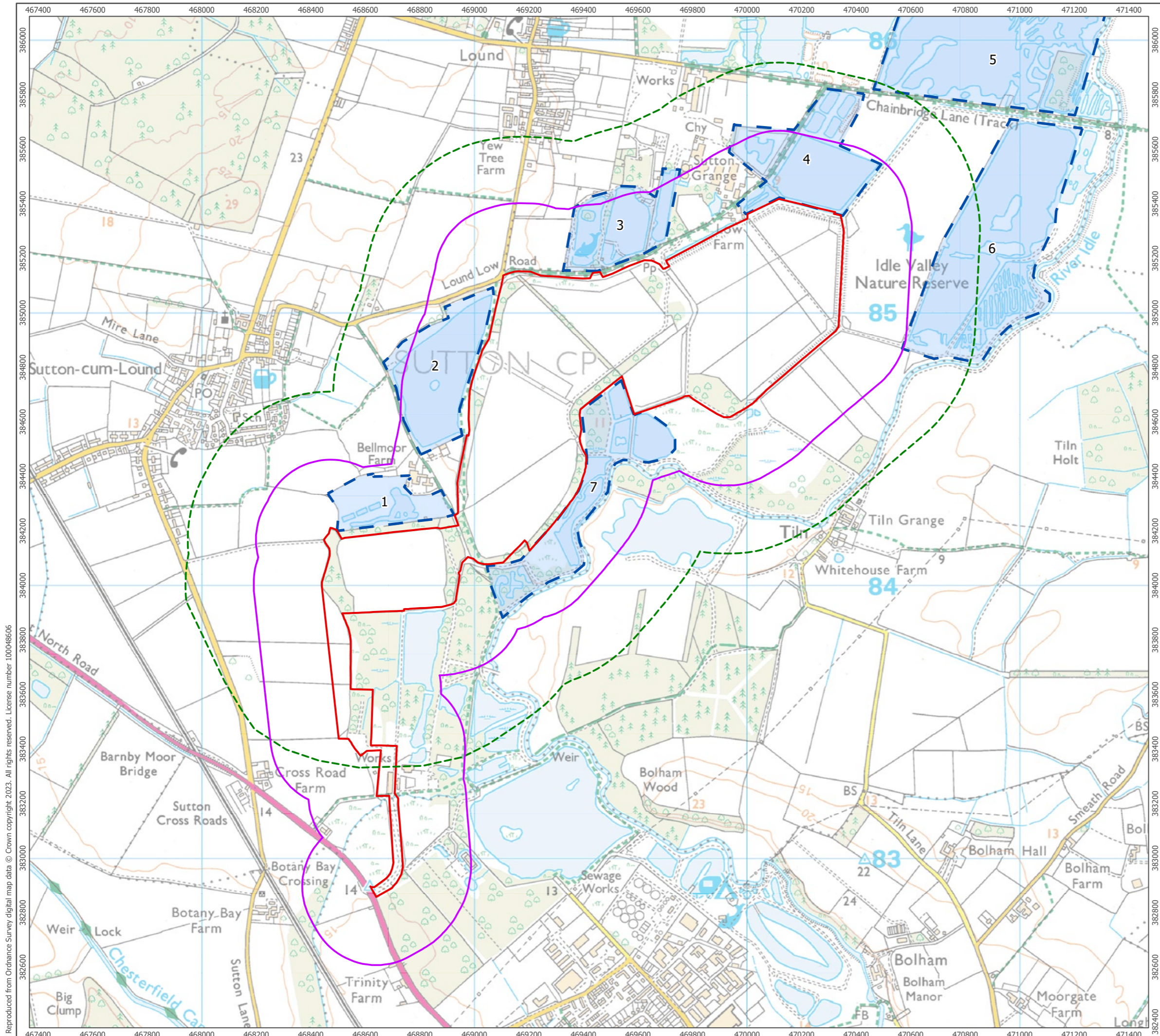
Species		Schedule 1 ¹	Annex I ²	SPI ³	BoCC Red ⁴	BoCC Amber ⁴	Notts SoCC ⁵	SSSI ⁶
English (British) vernacular name	Scientific name							
Greenshank	<i>Tringa nebularia</i>	Y				Y		
Black-headed gull	<i>Chroicocephalus ridibundus</i>					Y	Y	
Common gull	<i>Larus canus</i>					Y		
Great black-backed gull	<i>Larus marinus</i>					Y		
Herring gull	<i>Larus argentatus</i>			Y	Y			
Lesser black-backed gull	<i>Larus fuscus</i>					Y	Y	
Cormorant	<i>Phalacrocorax carbo</i>						Y	
Spoonbill	<i>Platalea leucorodia</i>	Y	Y			Y		
Bittern	<i>Botaurus stellaris</i>	Y	Y	Y		Y	Y	
Grey heron	<i>Ardea cinerea</i>						Y	
Great white egret	<i>Ardea alba</i>		Y			Y		
Little egret	<i>Egretta garzetta</i>		Y				Y	
Sparrowhawk	<i>Accipiter nisus</i>					Y		
Marsh harrier	<i>Circus aeruginosus</i>	Y	Y			Y	Y	
Buzzard	<i>Buteo buteo</i>							
Long-eared owl	<i>Asio otus</i>						Y	
Tawny owl	<i>Strix aluco</i>					Y	Y	
Kingfisher	<i>Alcedo atthis</i>	Y	Y				Y	
Great spotted woodpecker	<i>Dendrocopos major</i>							
Kestrel	<i>Falco tinnunculus</i>					Y	Y	
Magpie	<i>Pica pica</i>							
Jackdaw	<i>Corvus monedula</i>							
Rook	<i>Corvus frugilegus</i>					Y		
Carrion crow	<i>Corvus corone</i>							
Blue tit	<i>Cyanistes caeruleus</i>							
Great tit	<i>Parus major</i>							
Skylark	<i>Alauda arvensis</i>			Y	Y		Y	
Swallow	<i>Hirundo rustica</i>							
Cetti's warbler	<i>Cettia cetti</i>	Y					Y	
Long-tailed tit	<i>Aegithalos caudatus</i>							
Willow warbler	<i>Phylloscopus trochilus</i>					Y	Y	
Chiffchaff	<i>Phylloscopus collybita</i>							
Sedge warbler	<i>Acrocephalus schoenobaenus</i>				Y			
Reed warbler	<i>Acrocephalus scirpaceus</i>						Y	
Blackcap	<i>Sylvia atricapilla</i>							

Species		Schedule 1 ¹	Annex I ²	SPI ³	BoCC Red ⁴	BoCC Amber ⁴	Notts SoCC ⁵	SSSI ⁶
English (British) vernacular name	Scientific name							
Whitethroat	<i>Sylvia communis</i>					Y		
Wren	<i>Troglodytes troglodytes</i>					Y		
Treecreeper	<i>Certhia familiaris</i>							
Starling	<i>Sturnus vulgaris</i>			Y	Y		Y	
Blackbird	<i>Turdus merula</i>							
Fieldfare	<i>Turdus pilaris</i>	Y			Y			
Redwing	<i>Turdus iliacus</i>	Y				Y		
Song thrush	<i>Turdus philomelos</i>			Y		Y	Y	
Mistle thrush	<i>Turdus viscivorus</i>				Y		Y	
Robin	<i>Erithacus rubecula</i>							
Black redstart	<i>Phoenicurus ochruros</i>	Y				Y	Y	
House sparrow	<i>Passer domesticus</i>			Y	Y		Y	
Dunnock	<i>Prunella modularis</i>			Y		Y	Y	
Grey wagtail	<i>Motacilla cinerea</i>					Y	Y	
Meadow pipit	<i>Anthus pratensis</i>					Y	Y	
Chaffinch	<i>Fringilla coelebs</i>							
Brambling	<i>Fringilla montifringilla</i>	Y						
Bullfinch	<i>Pyrrhula pyrrhula</i>					Y	Y	
Greenfinch	<i>Chloris chloris</i>				Y			
Linnet	<i>Linaria cannabina</i>			Y	Y		Y	
Lesser redpoll	<i>Acanthis cabaret</i>			Y	Y			
Goldfinch	<i>Carduelis carduelis</i>							
Siskin	<i>Spinus spinus</i>							
Yellowhammer	<i>Emberiza citrinella</i>			Y	Y		Y	
Reed bunting	<i>Emberiza schoeniclus</i>					Y	Y	

APPENDIX C – FIGURES

Figure List:

- Figure 1: Site and Survey Areas
- Figure 2: Off-Site Waterbodies
- Figures 3a-3c: SBB Results



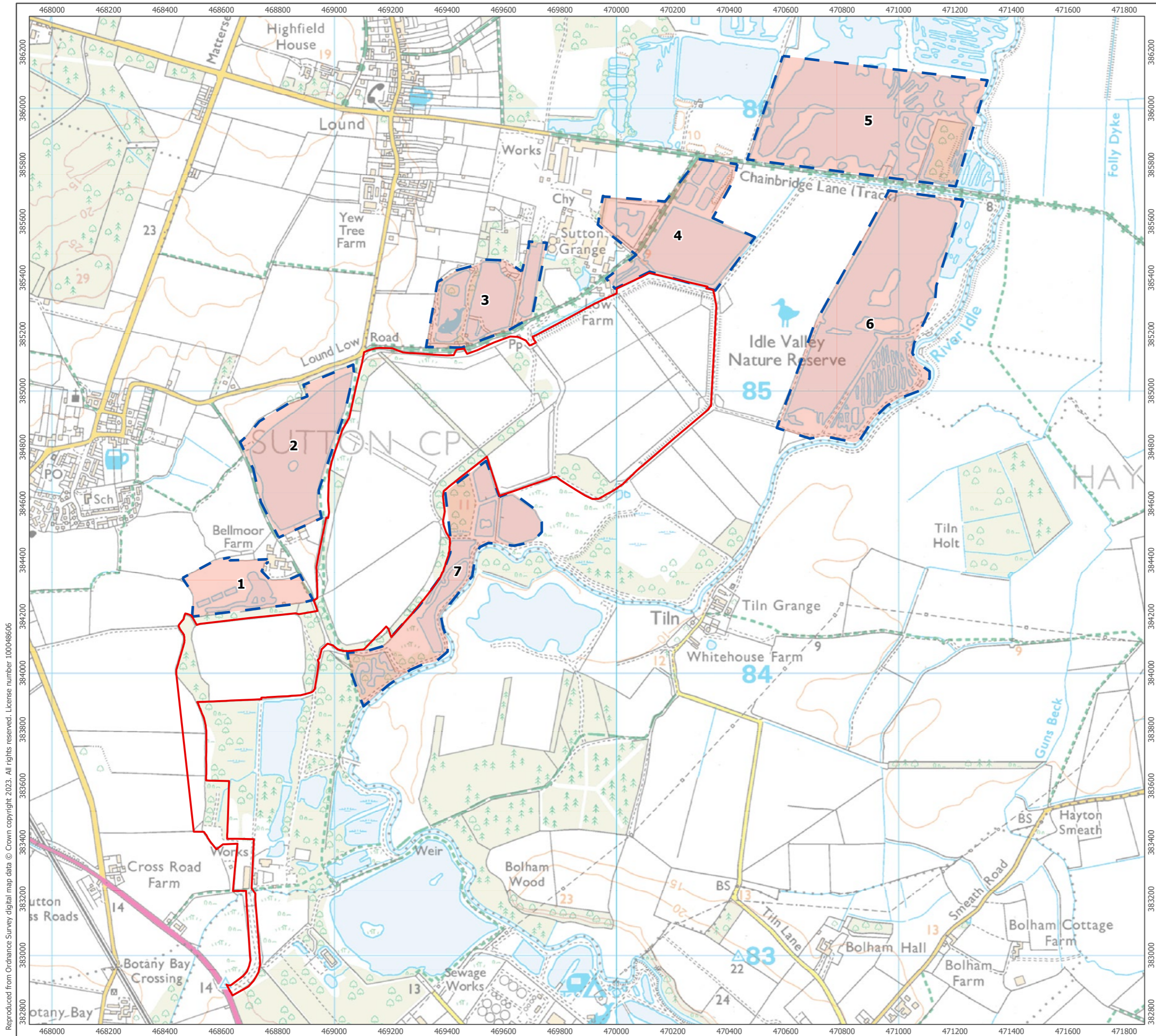
- Site Boundary
- Breeding Bird Survey Area - 250 m Buffer
- Non-Breeding Birds Survey Area - 500 m Buffer
- Lakes and Lake Complexes

1:13,500 Scale @ A3
 0 0.25 0.5 km

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Site and Survey Areas
Figure 1

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- Site Boundary
- Off-Site Waterbody Groups

1:13,000 Scale @ A3
 0 0.2 0.4 km

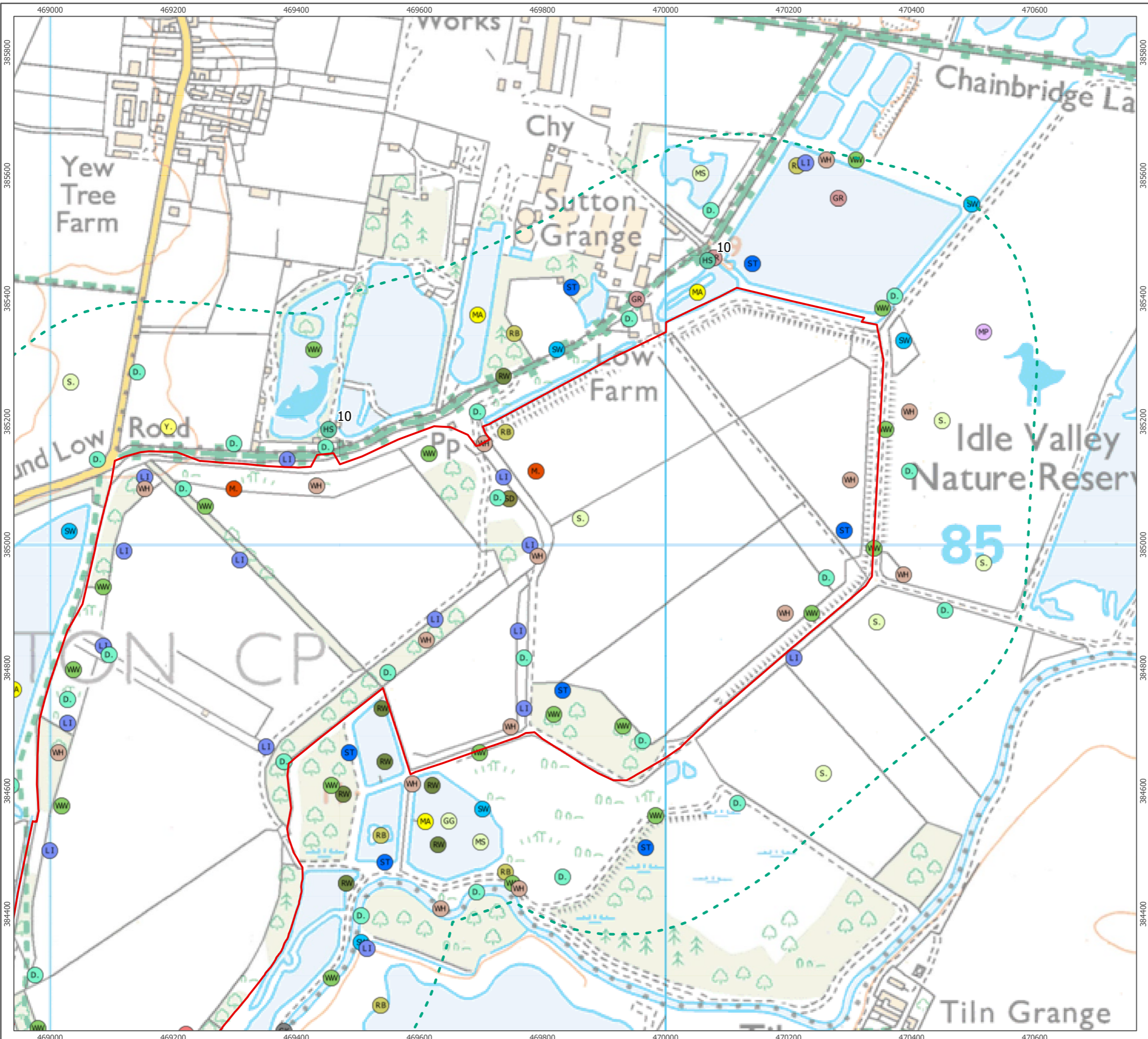


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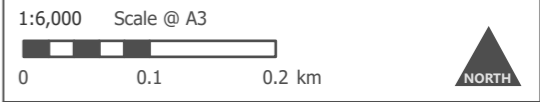
Off-Site Waterbodies
Figure 2

Retford Circular Economy Project
TA 8.3: Ornithology Survey Report

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- Site Boundary
- SBB Area
- Cuckoo
- Dunnock
- Great Crested Grebe
- Greenfinch
- House Sparrow
- Linnet
- Mallard
- Meadow Pipit
- Mistle Thrush
- Mute Swan
- Reed Bunting
- Reed Warbler
- Rook
- Sedge Warbler
- Song Thrush
- Skylark
- Stock Dove
- Whitethroat
- Willow Warbler
- Yellowhammer

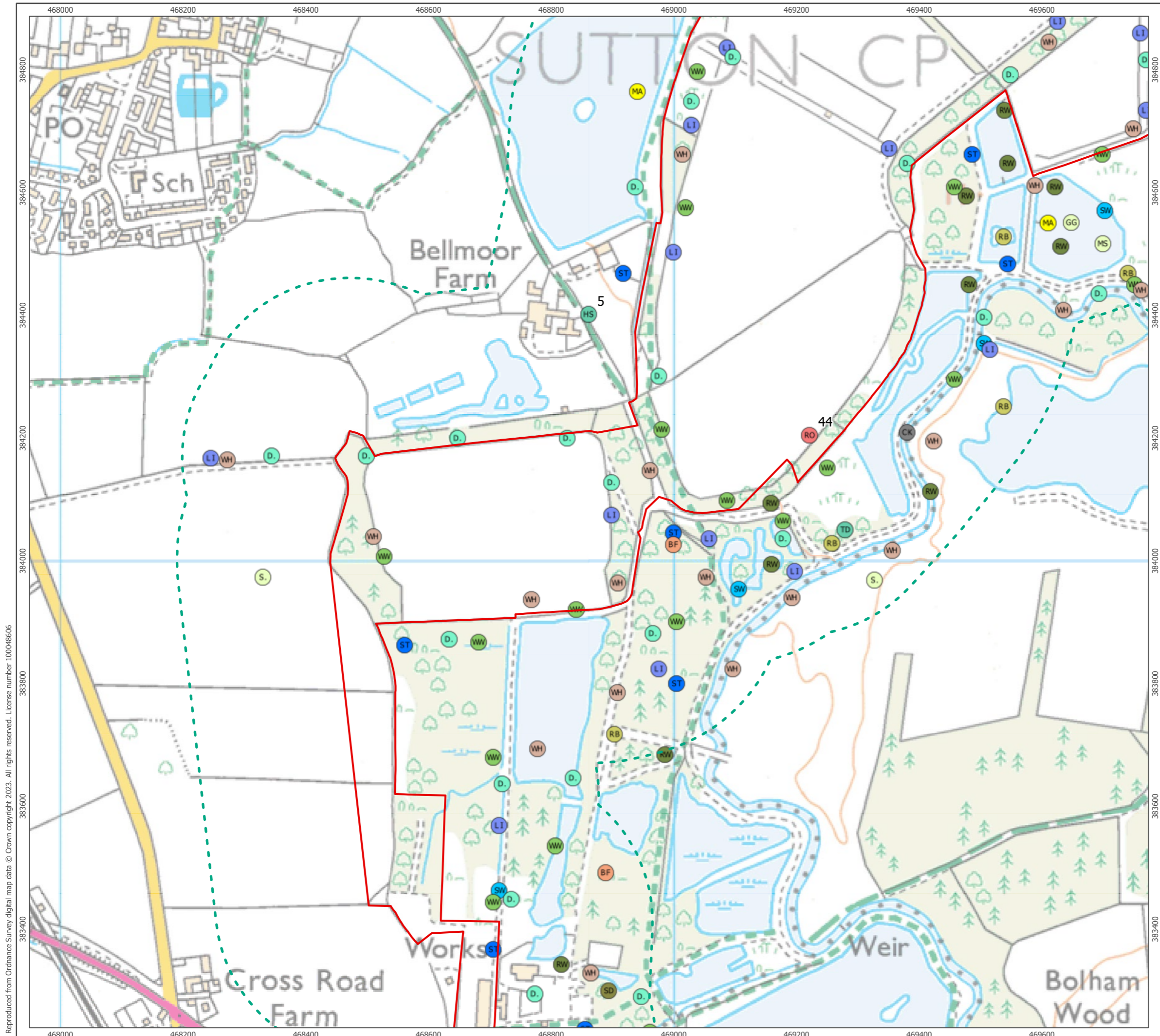


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SBB Results
Figure 3a

Retford Circular Economy Project
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- Site Boundary
- SBB Area
- BF Bullfinch
- CK Cuckoo
- D. Dunnock
- GG Great Crested Grebe
- HS House Sparrow
- LI Linnet
- MA Mallard
- MS Mute Swan
- RB Reed Bunting
- RW Reed Warbler
- RO Rook
- SW Sedge Warbler
- ST Song Thrush
- S. Skylark
- SD Stock Dove
- TD Turtle Dove
- WH Whitethroat
- WW Willow Warbler

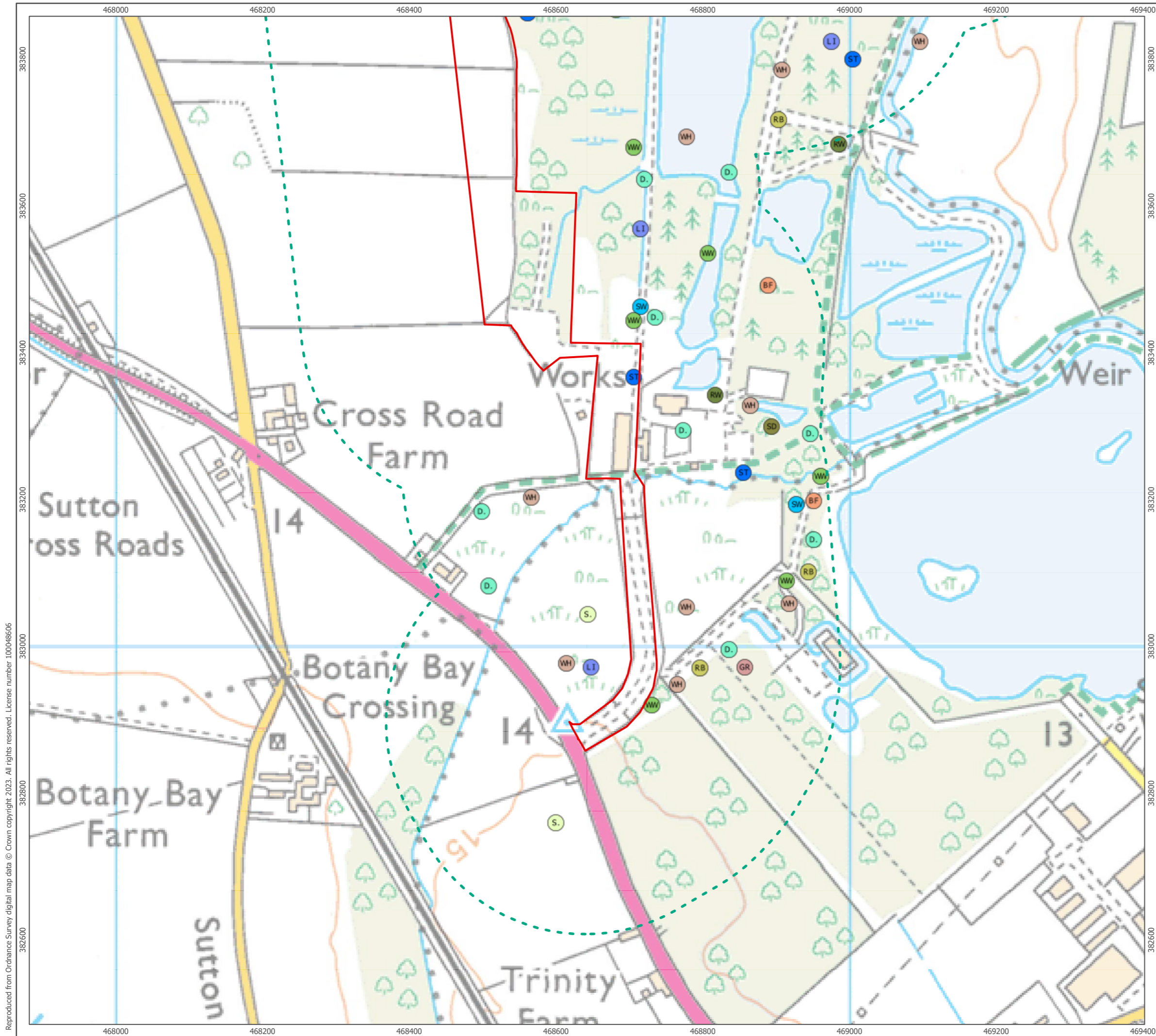


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SBB Results
Figure 3b

Retford Circular Economy Project
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- Site Boundary
- SBB Area
- BF Bullfinch
- D. Dunnock
- GR Greenfinch
- LI Linnet
- RB Reed Bunting
- RW Reed Warbler
- SW Sedge Warbler
- ST Song Thrush
- S. Skylark
- SD Stock Dove
- WH Whitethroat
- WW Willow Warbler



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SBB Results
Figure 3c

Retford Circular Economy Project
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Appendix D – Data Tables

Survey visit details

Table D.1: Hourly weather observations during all WBS

Date	Survey Start	Survey End	Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Frost
23/10/2020	10:30	16:30	1	2	SSW	4	8	1	0
			2	2	SSW	5	8	1	0
			3	2	SSW	3	8	1	0
			4	2	SW	1	8	2	0
			5	2	SW	0	8	2	0
			6	2	SW	0	8	2	0
30/10/2020	06:45	12:45	1	4	SW	0	8	2	0
			2	4	SW	0	8	2	0
			3	3	SW	1	8	2	0
			4	3	SW	1	8	2	0
			5	2	S	0	8	2	0
			6	2	S	0	8	2	0
10/11/2020	07:00	13:00	1	1	SSE	0	8	0	0
			2	1	SSE	0	8	1	0
			3	1	SSE	0	8	1	0
			4	1	SSE	0	8	2	0
			5	2	SSE	0	8	2	0
			6	2	SSE	0	8	2	0
24/11/2020	07:20	13:20	1	3	SSW	0	6	2	0
			2	3	SSW	0	5	2	0
			3	3	SSW	0	3	2	0
			4	2	S	0	7	2	0
			5	2	S	1	8	2	0
			6	2	S	4	8	1	0
03/12/2020	07:45	13:45	1	2	S	1	8	1	0
			2	2	S	0	8	2	0
			3	2	S	4-5	8	1	0
			4	2	SSE	5	8	1	0
			5	2	SSE	5	8	1	0
			6	2	SSE	5	8	1	0
18/12/2020	10:00	16:00	1	4	S	1	8	1	0

Date	Survey Start	Survey End	Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Frost
			2	3	S	1	8	1	0
			3	3	S	5	8	1	0
			4	4	S	3	8	2	0
			5	4	S	3	8	2	0
			6	3	S	5	8	1	0
08/01/2021	08:00	14:00	1	1	NNW	1	8	0	1
			2	1	NNW	1	8	0	1
			3	1	N	1	8	0	1
			4	1	N	0	8	1	1
			5	1	N	0	8	1	1
			6	2	N	0	8	1	1
22/01/2021	10:00	16:30	1	2	WSW	0	2	2	0
			2	2	WSW	0	1	2	0
			3	2	WSW	0	1	2	0
			4	3	WSW	0	4	2	0
			5	2	WSW	0	7	2	0
			6	2	WSW	0	5	2	0
03/02/2021	08:00	14:00	1	1	SW	0	7	2	0
			2	1	SW	0	8	2	0
			3	1	SW	0	8	2	0
			4	1	SW	4	8	1	0
			5	1	SW	0	8	1	0
			6	2	SW	0	6	2	0
19/02/2021	07:10	13:10	1	3	S	0	7	2	0
			2	3	S	4	8	1	0
			3	4	S	0	8	2	0
			4	4	S	1	8	1	0
			5	4	S	1	8	1	0
			6	5	S	1	8	1	0
04/03/2021	07:00	13:00	1	2	N	4-1	8	1	0
			2	2	N	0-4	8	1	0
			3	2	N	0	8	1	0
			4	2	N	0	7	2	0
			5	2	N	0	6	2	0

Date	Survey Start	Survey End	Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Frost
			6	2	N	0	7	2	0
Wind Speed per Beaufort scale and Wind Direction per 16-point compass. Rain: 0 = none, 1 = drizzle, 2 = Light showers, 3 = Heavy showers, 4 = Light rain, 5 = Heavy rain Cloud cover in Oktas, Cloud height: 0 = <150 m, 1 = 150-500 m, 3 = >500 m Frost: 0 = none, 1 = Present									

Table D2: Hourly weather observations during all BBS

Date	Survey Start	Survey End	Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Frost
17/03/2021	06:45	12:45	1	1	WNW	0	8	2	0
			2	1	WNW	0	8	1	0
			3	2	WNW	1	8	1	0
			4	2	WNW	0	8	2	0
			5	2	NW	1	8	1	0
			6	2	NW	0	8	1	0
19/04/2021	06:10	12:10	1	1	NE	0	2-4	2	1
			2	1	NE	0	7	0	1
			3	1	NE	0	8	0	1
			4	1	ENE	0	8	0	1
			5	1	ENE	0	8-6	0-1	0
			6	1	ENE	0	3	2	0
06/05/2021	05:30	11:30	1	1	WSW	4	7	1	1
			2	1	WSW	0	6	2	1
			3	1	WSW	0	7	2	1
			4	1	WSW	0	4	2	1
			5	1	WSW	0	3	2	0
			6	1	WSW	0	3	2	0
26/05/2021	16:00	22:00	1	2	NW	0	7	2	0
			2	2	NW	0	7	1	0
			3	2	NW	3	7	1	0
			4	1	NW	0	6	2	0
			5	1	NW	0	7	2	0
			6	1	NW	0-4	8	2-1	0
14/06/2021	04:50	10:50	1	2	SW	0	6	2	0
			2	2	SW	0	4	2	0
			3	1	SW	0	3	2	0
			4	1	SW	0	5	2	0

Date	Survey Start	Survey End	Hour	Wind Speed	Wind Direction	Rain	Cloud Cover	Cloud Height	Frost
			5	3	W	0	7	2	0
			6	2	WNW	0	8	2	0
14/07/2021	04:50	10:50	1	2	NW	0	5	2	0
			2	2	NW	0	7	2	0
			3	1	NW	0	4	2	0
			4	2	NW	0	5	2	0
			5	3	NW	0	4	2	0
			6	3	NW	0	6	2	0

Wind Speed per Beaufort scale and Wind Direction per 16-point compass.
 Rain: 0 = none, 1 = drizzle, 2 = Light showers, 3 = Heavy showers, 4 = Light rain, 5 = Heavy rain
 Cloud cover in Oktas, Cloud height: 0 = <150 m, 1 = 150-500 m, 3 = >500 m
 Frost: 0 = none, 1 = Present

Desk Study Species Records

Table D.3: Summary of bird species records provided by NGBR

Species	Number of records	High count	Most recent record	Closest record the Site (km)
Arctic tern	37	24	08/05/2017	0.8
Avocet	268	17	02/07/2017	0.8
Barn owl	125	5	05/12/2017	0.8
Barn swallow	84	200	13/08/2017	0.6
Barnacle goose	32	31	12/03/2017	0.8
Bar-tailed godwit	26	9	09/05/2017	0.8
Bearded tit	7	10	19/11/2017	0.8
Bewick's swan	37	7	03/12/2017	0.8
Bittern	8	1	07/09/2017	0.8
Black swan	2	1	27/12/2015	0.8
Black tern	67	67	02/07/2017	0.8
Blackbird	38	40	18/11/2017	0.8
Blackcap	115	21	25/07/2017	0.6
Black-headed gull	114	17000	09/12/2017	0.6
Black-necked grebe	85	4	04/10/2017	0.8
Black-tailed godwit	123	14	01/09/2017	0.8
Blue tit	33	41	05/12/2017	0.8
Blue-winged teal	1	1	02/07/2014	0.8

Species	Number of records	High count	Most recent record	Closest record the Site (km)
Brambling	62	100	26/12/2017	0.8
Bullfinch	320	26	22/12/2017	0.8
Canada goose	148	320	10/12/2017	0.6
Carrion crow	33	110	14/10/2016	0.8
Caspian gull	45	10	27/12/2017	0.8
Cattle egret	3	1	08/11/2016	0.8
Cetti's warbler	63	1	03/12/2017	0.8
Chaffinch	61	160	22/03/2017	0.8
Coal tit	111	10	09/12/2017	0.8
Collared dove	23	42	05/12/2017	0.8
Common buzzard	413	20	08/12/2017	0.8
Common chiffchaff	274	30	22/12/2017	0.6
Common crane	8	4	30/05/2017	0.8
Common crossbill	4	6	07/10/2015	0.8
Common gull	80	1190	05/11/2017	0.8
Common pheasant	35	26	13/05/2017	0.8
Common redpoll	19	35	19/12/2017	0.8
Common redshank	437	43	26/11/2017	0.8
Common redstart	31	2	03/09/2017	0.8
Common sandpiper	160	16	12/09/2017	0.8
Common scoter	22	7	21/11/2017	0.8
Common Snipe	394	130	27/11/2017	0.8
Common swift	80	850	12/09/2017	0.6
Common Tern	255	41	13/08/2017	0.6
Common whitethroat	80	11	15/08/2017	0.6
Coot	151	1113	10/12/2017	0.6
Cormorant	151	76	10/12/2017	0.6
Corn bunting	2	1	11/04/2016	0.8
Cuckoo	206	3	02/07/2017	0.8
Curlew	11	2	10/09/2017	0.8
Curlew sandpiper	13	3	23/09/2017	0.8
Brent goose	3	31	13/03/2017	0.8
Dunlin	372	23	10/12/2017	0.8
Dunnock	50	24	04/04/2017	0.8

Species	Number of records	High count	Most recent record	Closest record the Site (km)
Egyptian goose	299	12	29/12/2017	0.8
Bittern	38	2	19/12/2016	0.8
Curlew	96	4	14/04/2016	0.8
Teal	194	918	13/12/2017	0.8
Eurasian wigeon	273	1174	10/12/2017	0.8
Golden plover	162	1000	06/11/2017	0.8
Honey buzzard	3	1	15/05/2016	0.8
European stonechat	95	3	30/12/2016	0.8
Fieldfare	196	435	09/12/2017	0.8
Firecrest	25	1	25/02/2017	0.8
Gadwall	171	709	10/12/2017	0.6
Gannet	2	2	07/11/2013	0.8
Garden warbler	68	8	15/09/2017	0.8
Garganey	49	10	12/09/2017	0.8
Glaucous gull	13	1	10/01/2017	0.8
Glossy ibis	15	1	14/10/2016	0.8
Goldcrest	267	28	26/11/2017	0.8
Golden oriole	3	1	25/06/2013	0.8
Goldeneye	301	126	13/12/2017	0.8
Goldfinch	103	250	08/12/2017	0.8
Goosander	322	36	31/12/2017	0.8
Goshawk	3	2	29/04/2013	0.8
Grasshopper warbler	36	2	23/06/2017	0.8
Great back-backed gull	83	2000	05/11/2017	0.8
Great crested grebe	274	26	10/12/2017	0.8
Great skua	1	1	30/07/2012	0.8
Great spotted woodpecker	191	20	10/12/2017	0.8
Great tit	30	39	19/02/2017	0.8
Great white egret	235	11	27/12/2017	0.6
Greater scaup	40	2	16/07/2017	0.8
Greater white-fronted goose	85	27	12/03/2017	0.8
Green sandpiper	265	14	14/11/2017	0.8
Green woodpecker	211	6	28/08/2017	0.8
Greenfinch	69	85	09/12/2017	0.8

Species	Number of records	High count	Most recent record	Closest record the Site (km)
Greenshank	178	6	16/09/2017	0.8
Green-winged teal	16	200	11/12/2016	0.8
Grey heron	236	8	10/12/2017	0.6
Grey partridge	141	37	16/05/2017	0.8
Grey phalarope	2	1	19/10/2014	0.8
Grey plover	45	4	15/10/2017	0.8
Grey wagtail	145	3	22/12/2017	0.8
Greylag goose	185	1331	10/12/2017	0.6
Gull-billed tern	1	1	11/06/2015	0.8
Hawfinch	18	12	22/12/2017	0.8
Hen harrier	32	1	03/10/2017	0.8
Herring gull	71	375	31/12/2017	0.8
Hobby	275	6	26/09/2017	0.8
House martin	60	275	12/09/2017	0.6
House sparrow	19	30	07/05/2017	0.8
Iceland gull	8	1	18/03/2015	0.8
Jack snipe	38	4	30/01/2017	0.8
Jackdaw	24	1000	08/11/2017	0.8
Jay	194	10	10/12/2017	0.8
Kestrel	234	10	09/12/2017	0.6
Kingfisher	299	3	17/11/2017	0.8
Kittiwake	13	2	22/10/2017	0.8
Lapland bunting	3	25	11/06/2017	0.8
Lapwing	258	1750	22/12/2017	0.6
Lesser black-backed gull	129	1180	05/11/2017	0.6
Lesser redpoll	194	300	18/11/2017	0.8
Lesser scaup	1	1	04/06/2013	0.8
Lesser spotted woodpecker	5	2	27/02/2015	0.8
Lesser whitethroat	94	5	12/09/2017	0.8
Linnet	109	300	17/11/2017	0.8
Little egret	767	32	22/12/2017	0.6
Little grebe	266	33	27/11/2017	0.6
Little gull	21	5	01/05/2017	0.8
Little owl	48	2	02/09/2017	0.8

Species	Number of records	High count	Most recent record	Closest record the Site (km)
Little ringed plover	322	8	29/06/2017	0.8
Little stint	47	3	03/10/2017	0.8
Little tern	4	2	30/04/2017	0.8
Long-eared owl	18	2	22/06/2016	0.8
Long-tailed duck	50	1	08/05/2013	0.8
Long-tailed tit	119	50	08/12/2017	0.8
Magpie	26	23	25/02/2017	0.8
Mallard	140	408	10/12/2017	0.6
Mandarin duck	16	3	19/12/2017	0.8
Marsh harrier	349	3	26/11/2017	0.8
Marsh tit	33	2	12/03/2017	0.8
Meadow pipit	105	110	26/09/2017	0.8
Mediterranean gull	55	2	22/12/2017	0.8
Melodious warbler	10	1	30/06/2013	1.1
Merlin	72	11	21/11/2017	0.8
Mistle thrush	79	12	03/12/2017	0.8
Moorhen	123	20	10/12/2017	0.8
Mute swan	214	245	10/12/2017	0.6
Nightingale	21	2	28/04/2014	0.8
Nightjar	1	1	16/05/2012	0.8
Northern wheatear	147	11	08/10/2017	0.8
Nuthatch	20	1	20/12/2017	0.8
Osprey	30	1	08/07/2017	0.8
Oystercatcher	480	22	23/07/2017	0.6
Pectoral sandpiper	23	3	03/09/2017	0.8
Peregrine falcon	212	10	19/12/2017	0.8
Pied flycatcher	1	1	26/08/2013	0.8
Pink-footed goose	176	2170	19/11/2017	0.8
Pintail	282	13	19/11/2017	0.6
Pochard	215	205	10/12/2017	0.8
Quail	4	2	13/07/2017	0.8
Raven	37	3	17/10/2017	0.8
Red kite	34	2	22/08/2017	0.8
Red knot	14	2	27/06/2017	0.8

Species	Number of records	High count	Most recent record	Closest record the Site (km)
Red-backed shrike	2	1	12/07/2017	0.8
Red-breasted merganser	1	1	30/04/2014	0.8
Red-crested pochard	562	222	13/12/2017	0.8
Red-legged partridge	66	30	07/05/2017	0.8
Redwing	154	400	09/12/2017	0.8
Reed bunting	144	70	18/11/2017	0.6
Reed warbler	65	10	10/09/2017	0.8
Richard's pipit	1	1	11/10/2016	0.8
Ring ouzel	2	1	19/11/2015	0.8
Ringed plover	409	27	26/09/2017	0.8
Robin	24	14	19/02/2017	0.8
Rock dove/Feral pigeon	10	60	27/01/2017	0.8
Rock pipit	4	1	13/10/2017	0.8
Rook	33	3375	02/11/2017	0.8
Rose-ringed parakeet	1	1	29/07/2016	0.8
Rough-legged buzzard	1	1	23/12/2012	0.8
Ruddy duck	13	16	07/04/2013	0.8
Ruddy shelduck	6	3	18/10/2017	0.8
Ruff	605	15	22/12/2017	0.8
Sand martin	124	2000	12/09/2017	0.8
Sanderling	32	5	24/07/2017	0.8
Sandwich tern	8	3	09/04/2017	0.8
Sedge warbler	76	7	07/05/2017	0.8
Shelduck	307	32	31/12/2017	0.6
Short-eared owl	206	8	09/05/2017	0.8
Shoveler	226	236	13/12/2017	0.6
"Siberian chiffchaff"	5	1	07/12/2016	0.8
Siskin	129	300	19/12/2017	0.8
Skylark	120	800	05/11/2017	0.8
Slavonian grebe	23	1	04/04/2014	0.8
Smew	49	4	28/11/2016	0.8
Snow bunting	1	2	05/10/2014	0.8
Song thrush	172	10	10/12/2017	0.8
Sparrowhawk	290	4	05/12/2017	0.8

Species	Number of records	High count	Most recent record	Closest record the Site (km)
Spoonbill	1	1	19/04/2013	0.8
Spotted flycatcher	31	4	10/09/2017	0.8
Spotted redshank	19	2	12/11/2017	0.8
Starling	64	10,000	17/10/2017	0.8
Stock dove	82	70	08/11/2017	0.8
Stonechat	30	11	19/12/2017	0.8
Tawny owl	125	10	10/08/2017	0.8
Temminck's stint	8	1	17/05/2015	0.8
Tree pipit	2	1	17/04/2014	0.8
Tree sparrow	93	35	22/12/2017	0.8
Treecreeper	172	6	10/12/2017	0.8
Tufted duck	162	530	10/12/2017	0.6
Tundra bean goose	24	13	12/02/2017	0.8
Turnstone	40	16	23/05/2017	0.8
Turtle dove	197	18	03/09/2017	0.8
Twite	1	1	17/11/2013	0.8
Water pipit	1	1	25/06/2015	0.8
Water rail	123	3	22/12/2017	0.8
Waxwing	26	50	12/03/2017	0.8
Whimbrel	63	13	07/05/2017	0.8
Whinchat	33	4	26/09/2017	0.8
White stork	1	1	23/03/2012	0.8
White/Pied wagtail	133	100	27/09/2016	0.8
Whooper swan	428	181	27/12/2017	0.8
Willow tit	33	2	05/12/2017	0.8
Willow warbler	83	23	15/09/2017	0.8
Woodlark	2	1	26/04/2015	0.8
Wood pigeon	29	3000	28/11/2016	0.8
Wood sandpiper	35	4	30/08/2017	0.8
Woodcock	52	15	10/12/2017	0.8
Wren	41	20	29/04/2017	0.8
Wryneck	1	1	31/05/2013	0.8
Yellow wagtail	143	105	01/09/2017	0.6
Yellow-browed warbler	8	1	10/10/2016	0.8

Species	Number of records	High count	Most recent record	Closest record the Site (km)
Yellowhammer	87	91	05/12/2017	0.8
Yellow-legged gull	128	12	01/12/2017	0.8

NBBS raw data

Details of the raw data collected during the 2020–21 NBBS, including the total number of each species recorded within the Site, flying over the Site, and on or around Lakes 1-7, are presented below in Tables D.4 to D.11.

Table D.4: Summary of the total number of birds recorded within the Site during the 2020–21 NBBS

Species	Total number of birds										
	October		November		December		January		February		March
	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1
Canada goose	0	0	0	0	94	142	0	0	350	22	63
Greylag goose	0	0	0	46	0	32	0	0	226	14	71
Egyptian goose	0	0	2	0	0	0	2	0	12	2	0
Mandarin duck	0	0	0	0	0	0	0	0	0	0	1
Shoveler	0	0	0	0	0	0	0	0	32	0	0
Gadwall	0	0	0	0	0	0	0	0	46	0	0
Oystercatcher	0	0	0	0	0	0	0	0	0	0	4
Lapwing	0	0	3	0	0	0	0	0	84	107	0
Green sandpiper	2	1	0	1	1	1	0	0	1	0	0
Black-headed gull	0	650	450	100	130	53	50	390	650	530	280
Common gull	0	0	0	0	0	0	30	180	170	90	14
Herring gull	0	0	23	0	6	0	0	0	32	0	4
Grey heron	0	0	21	0	0	0	0	0	2	0	0
Great white egret	0	0	0	0	0	0	0	0	0	0	1
Little egret	0	0	0	2	2	0	0	0	0	0	0

Table D.2: Summary of the total number of birds recorded flying over the NBBS Area during the 2020–21 NBBS

Species	Total number of birds										
	October		November		December		January		February		March
	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1
Canada goose	0	19	61	82	116	114	296	0	0	0	0
Pink-footed goose	0	0	0*	60	0	0	0	0	0	0	0
Greylag goose	34	0	31	26	81	0	352	100	32	0	4
Mute swan	6	0	8	0	7	0	2	1	2	0	0
Egyptian goose	2	0	0	12	0	0	2	2	0	0	2
Shoveler	0	0	0	0	0	0	0	0	12	0	0
Wigeon	0	0	0	0	0	0	12	70	26	0	0
Mallard	12	6	0	80	0	0	6	31	0	0	0
Teal	0	0	0	8	0	0	0	0	0	0	0
Red-crested pochard	0	4	0	0	0	0	0	0	0	0	0
Goosander	0	0	0	0	3	0	1	0	0	0	1
Oystercatcher	0	0	0	0	0	0	0	0	0	1	0
Lapwing	26	0	90	120	95	0	0	140	0	170	18
Ruff	0	0	0	0	0	0	0	4	0	0	0
Woodcock	0	0	0	0	0	1	0	0	0	0	0
Snipe	0	0	17	0	0	4	0	1	4	0	0
Green sandpiper	0	0	0	0	1	0	0	0	0	0	0
Redshank	0	0	0	0	0	1	0	0	0	0	0
Black-headed gull	60	0	0	0	0	0	0	0	0	60	46
Common gull	0	0	0	0	0	0	0	180	0	0	0
Great black-backed gull	0	0	0	0	4	0	0	0	0	0	0
Herring gull	0	0	0	0	0	0	0	12	0	0	0
Lesser black-backed gull	0	0	0	0	0	0	0	0	0	2	11
Cormorant	0	3	0	0	0	0	1	6	2	0	2
Grey heron	0	0	0	1	1	0	0	1	0	0	1
Great white egret	0	0	0	0	0	0	2	0	0	0	0
Little egret	0	1	1	0	0	0	0	0	0	0	0
Marsh harrier	0	1	1	0	0	1	0	1	0	0	0

*A flock of 130 birds was also observed to the south of Lake 6 during the first November visit, flying south-west.

Table D.5: Summary of the total number of birds recorded on or around Lake 1 during the 2020–21 NBBS

Species	Total number of birds										
	October		November		December		January		February		March
	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1
Canada goose	0	0	0	0	0	0	0	140	0	0	4
Greylag goose	0	0	0	0	0	0	0	38	0	2	0
Egyptian goose	0	0	0	0	0	4	0	0	0	0	0
Wigeon	0	0	4	0	0	0	0	0	0	8	0
Mallard	0	0	12	0	0	0	0	0	32	6	0
Goosander	0	0	0	0	5	11	0	0	0	2	0
Little grebe	0	0	0	0	0	0	0	0	0	0	2
Lapwing	0	0	0	0	0	0	0	0	2	0	2

Table D.6: Summary of the total number of birds recorded on or around Lake 2 during the 2020–21 NBBS

Species	Total number of birds										
	October		November		December		January		February		March
	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1
Canada goose	49	0	0	47	17	0	0	0	0	24	4
Greylag goose	0	0	0	31	0	22	0	0	0	0	6
Mute swan	34	24	0	24	21	28	4	14	0	0	0
Egyptian goose	0	0	0	0	0	4	0	0	0	0	2
Shoveler	0	0	0	26	9	8	62	0	37	0	0
Gadwall	0	0	19	0	0	8	0	0	0	0	0
Wigeon	12	31	11	2	41	64	0	0	36	0	0
Mallard	46	38	53	67	62	52	0	21	12	18	18
Teal	0	14	16	0	0	0	0	0	0	0	0
Red-crested Pochard	82	130	12	42	18	34	6	3	0	0	0
Pochard	0	0	8	0	6	12	0	0	0	0	0
Tufted duck	35	60		58	64	89	49	58	24	4	9
Goldeneye	0	0	0	0	3	6	0	0	0	0	0
Great crested grebe	0	0	0	2	0	0	0	0	0	0	0

Little grebe	0	0	16	0	12	11	18	5	4	7	2
Coot	0	0	140	83	127	123	107	119	63	61	41

Table D.7: Summary of the total number of birds recorded on or around Lake 3 during the 2020–21 NBBS

Species	Total number of birds										
	October		November		December		January		February		March
	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1
Canada goose	0	0	0	0	0	0	0	0	120	0	0
Greylag goose	0	0	0	0	0	0	0	0	0	0	4
Egyptian goose	0	0	0	12	0	0	0	0	0	0	0
Shoveler	0	0	0	0	0	0	0	0	6	0	0
Mallard	8	0	8	8	22	36	0	3	0	6	4
Teal	4	0	0	0	0	12	0	0	8	0	0
Black-headed gull	0	0	0	0	0	0	70	0	0	0	0
Grey heron	1	0	0	0	0	2	1	0	0	0	0
Little egret	0	2	2	0	0	0	0	0	0	0	0

Table D.8: Summary of the total number of birds recorded on or around Lake 4 during the 2020–21 NBBS

Species	Total number of birds										
	October		November		December		January		February		March
	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1
Canada goose	29	0	39	126	34	0	0	2	0	0	46
Greylag goose	12	0	0	55	0	0	0	4	0	10	33
Mute swan	11	10	2	12	3	0	5	4	2	2	2
Egyptian goose	3	2	0	3	0	0	0	0	0	0	18
Shoveler	6	0	2	0	0	0	0	4	0	0	4
Gadwall	3	0	4	4	0	0	0	12	0	0	0
Wigeon	0	0	0	18	6	34	24	0	0	4	11
Mallard	41	39	70	0	0	38	0	0	0	12	22
Teal	14	8	24	12	0	16	22	0	0	0	2
Tufted duck	0	0	0	0	0	0	0	0	0	8	8
Water rail	0	0	0	0	0	0	1	0	0	0	0
Oystercatcher	0	0	0	0	0	0	0	0	0	2	2
Green sandpiper	0	0	0	0	1	0	0	0	0	1	0

Black-headed gull	0	0	0	0	60	0	70	0	0	0	0
Grey heron	2	0	2	2	0	0	0	0	0	2	0
Great white egret	0	0	2	3	1	0	0	0	0	0	0
Little egret	4	0	0	0	0	0	0	0	0	0	0

Table D.9: Summary of the total number of birds recorded on or around Lake 5 during the 2020–21 NBBS

Species	Total number of birds										
	October		November		December		January		February		March
	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1
Canada goose	0	0	0	0	0	0	0	0	0	0	27
Greylag goose	0	0	0	0	0	0	0	0	0	0	41
Mute swan	6	8	6	2	0	0	0	0	0	0	0
Whooper swan	0	0	0	4	0	0	0	0	0	0	0
Egyptian goose	0	2	0	0	0	0	0	0	0	0	0
Shoveler	0	0	51	26	0	21	0	8	0	36	24
Gadwall	0	0	11	6	0	0	0	0	0	0	2
Wigeon	82	86	18	44	0	0	0	0	35	0	0
Mallard	19	0	26	25	0	17	63	9	39	14	8
Teal	0	0	0	37	0	23	16	0	46	0	0
Pochard	0	12	0	9	0	6	0	11	11	0	2
Tufted duck	27	0	43	29	0	46	0	12	26	28	69
Goldeneye	0	0	0	0	0	0	0	1	0	2	0
Goosander	0	0	0	0	0	0	0	0	5	0	0
Water rail	0	1	0	0	0	0	3	0	0	0	1
Little grebe	0	0	0	0	0	0	0	3	0	0	0
Great crested grebe	0	2	0	0	0	0	0	0	0	0	0
Ruff	0	0	2	0	0	0	0	0	0	0	0
Black-headed gull	0	0	0	0	0	0	0	120	90	0	0
Grey heron	0	0	1	0	0	0	0	0	0	0	0
Great white egret	0	0	2	0	0	1	0	0	1	2	1

Table D.10: Summary of the total number of birds recorded on or around Lake 6 during the 2020–21 NBBS

Species	Total number of birds										
	October		November		December		January		February		March
	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1
Canada goose	110	130	0	51	112	120	0	133	56	64	84
Pink-footed goose	0	0	0	0	0	0	0	55	0	0	0
Greylag goose	240	60	0	345	360	530	0	89	122	51	145
Mute swan	7	40	19	36	43	48	19	18	0	11	24
Whooper swan	0*	0	0	0	0	0	0	0	0	0	0
Shoveler	24	0	36	37	58	93	77	74	51	0	0
Gadwall	32	21	28	0	27	54	54	87	0	0	4
Wigeon	0	71	0	42	0	257	281	63	66	230	170
Mallard	67	84	47	0	56	131	87	92	92	46	21
Teal	0	0	28	26	134	47	64	52	94	0	18
Red-crested pochard	26	0	11	7	7	0	0	0	0	0	0
Pochard	0	63	0	11	32	48	0	64	21	0	4
Tufted duck	0	0	63	29	57	93	82	89	81	78	67
Goldeneye	0	0	5	3	7	12	4	0	16	11	2
Goosander	0	0	0	0	0	0	0	0	0	4	0
Coot	84	90	0	181	94	300	136	60	82	53	0
Little grebe	8	0	0	0	0	0	0	6	0	0	0
Great crested grebe	6	4	6	0	0	0	0	0	0	0	0
Oystercatcher	0	0	0	0	0	0	0	0	0	12	0
Lapwing	0	40	90	0	0	130	80	120	0	0	80
Snipe	0	0	17	0	0	4	0	0	0	0	0
Black-headed gull	0	0	0	0	0	0	0	140	0	0	0
Cormorant	0	14	0	26	28	29	12	14	17	11	0
Grey heron	0	0	0	5	0	0	0	0	3	0	0
Great white egret	0	1	0	1	2	1	1	1	0	0	3
Little egret	0	0	0	7	0	0	0	0	0	0	0

*Nine whooper swan were observed to the south of Lake 6 during the first survey visit in October.

Table D.11: Summary of the total number of birds recorded on or around Lake 7 during the 2020–21 NBBS

Species	Total number of birds										
	October		November		December		January		February		March
	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1
Canada goose	18	0	0	0	0	0	0	0	0	0	0
Greylag goose	0	0	0	38	0	0	0	0	0	0	0
Mute swan	4	0	0	1	0	0	0	0	3	0	0
Mallard	0	0	0	0	0	4	0	0	0	0	2
Little grebe	0	0	0	1	0	1	0	0	1	3	4
Cormorant	0	0	0	0	0	0	0	6	0	0	0
Kingfisher	0	0	1	0	0	0	0	0	0	0	0