

Connah's Quay Low Carbon Power

Environmental Statement Volume IV Appendix 11-D: Ornithology Technical Appendix

Planning Inspectorate Reference: EN010166

Document Reference: EN010166/APP/6.4

Planning Act 2008 (as amended)

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(a)

Revision 00

Prepared for:
Uniper UK Limited

Prepared by:
AECOM Limited

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1. Introduction

1.1 Background

1.1.1 This report forms a technical appendix accompanying **Chapter 11: Terrestrial and Aquatic Ecology (EN010166/APP/6.2.11)** of the ES for the Connah's Quay Low Carbon Power Project (hereafter referred to as the 'Proposed Development').

1.1.2 This report describes the approach and findings of ornithological surveys carried out to date in support of the Ecological Impact Assessment (EIA) of the Proposed Development. The focus of these surveys has been of the Main Development Area, Construction and Indicative Enhancement Area (C&IEA), Proposed CO₂ Connection Corridor, Repurposed CO₂ Connection Corridor and Water Connection Corridor (hereafter referred to as the 'Construction and Operation Area') as shown on **Figure 3-3: Areas Described in the Environmental Statement (EN010166/APP/6.3)** sheets 6 to 8 **Chapter 3: Location of the Proposed Development (EN010166/APP/6.2.3)**.

1.1.3 The Accommodation Works Areas are considered in **Appendix 5-A: Environmental Screening of Accommodation Works (EN010166/APP/6.4)**.

1.2 Survey Scope

1.2.1 A Preliminary Ecological Appraisal (PEA) of the ecological constraints and opportunities associated with the Proposed Development was carried out in November 2023 and identified the requirements for further ornithological desk study information and surveys. The findings of the initial habitat and scoping survey are compiled within the PEA Report (annexed to **Appendix 11-C: Botanical Baseline Survey and Information Report (EN010166/APP/6.4)**). The habitat descriptions have since been updated by the habitat surveys conducted in 2024; the results of which are also presented in **Appendix 11-C: Botanical Technical Appendix (EN010166/APP/6.4)**. The Botanical Survey Technical Appendix presents a detailed overview of the Construction and Operation Area conditions and habitats present.

1.2.2 The purpose of this report is to provide ornithological baseline technical information only, based on data gathered to date. It does not seek to include recommendations, specify mitigation or make an EIA of the Proposed Development. The formal EIA is provided in **Chapter 11: Terrestrial and Aquatic Ecology (EN010166/APP/6.2.11)**.

1.2.3 The 'Study Area' and 'Survey Area' used and referenced within this report are defined within **Section 3**.

1.2.4 The surrounding landscape within 2 km of the Main Development Area is characterised by estuarine habitat to the north, including saltmarsh, coastal floodplain grazing marsh and mudflats. The Main Development Area is situated between urban development with the residential towns of Flint and

Connah's Quay located to the west and east of the Construction and Operation Area, respectively. Directly south of the Main Development Area, most of the land represents a farmland habitat mosaic, consisting of arable fields, woodland and hedgerows.

2. Relevant Legislation and Policy

2.1 Legislation

2.1.1 **Appendix 7-A Legislative, Policy and Guidance Framework for Technical Topics (EN010166/APP/6.4)** provides detail on the legislation that is of direct relevance to the assessment of ecology.

Wildlife and Countryside Act 1981

2.1.2 The legislative provisions for the protection of wild birds in the United Kingdom (UK) are contained primarily in Sections 1 to 7 of the Wildlife and Countryside Act 1981 (WCA) (as amended) (Ref 1). Under the WCA, a wild bird is defined as any bird of a species that occurs in a wild state as a resident or visitor UK or any member State or the European territory.

2.1.3 In addition to the protection from killing or taking that all birds receive, species included on Schedule 1 of the WCA and their young must not be disturbed at the nest.

Countryside and Rights of Way (CROW) Act 2000

2.1.4 The WCA requires the prosecuting authority to prove that an offence was intentional, however the CROW Act 2000 (Ref 2) strengthens the provisions of the WCA by introducing an additional offence of “reckless” disturbance, which means that ignorance of the presence of a protected species cannot be used as a reliable defence should a breach of the WCA be committed.

Conservation of Habitats and Species Regulations 2017 (as amended) / Directive of the Conservation of Wild Birds 2009

2.1.5 Several bird species recorded within the UK (including those that are resident, overwintering and migratory) are protected under European legislation under the Directive of the Conservation of Wild Birds (EU Birds Directive) (Ref 3), which lists 193 species, or sub-species, of birds in Annex 1 which are:

- in danger of extinction;
- rare, or have restricted local distribution;
- vulnerable to specific changes in their habitat; or
- require particular attention for reasons of the specific nature of habitat.

2.1.6 The EU Birds Directive is reflected in UK law by the Conservation of Habitats and Species Regulations 2017 (as amended) (Ref 4). Although the UK is no longer a member state of the European Union, the 2019 amendments to the Conservation of Habitats and Species Regulations 2017 make it clear that provisions regarding the protection and designation of Special Protection Areas (SPA) are maintained (Ref 5). Species listed on Annex 1 are those for which the UK Government takes special conservation measures including the designation of land as SPAs to ensure the survival and reproduction of these species throughout their distributions. These sites are automatically

included within the National Site Network; a network of core breeding and resting sites that are protected for rare and threatened species.

Environment (Wales) Act 2016

2.1.7 The Environment (Wales) Act 2016 (the Act) (Ref 6) replaces the duty in Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (Ref 7) in relation to Wales, with a duty on public authorities to seek to maintain and enhance biodiversity. Section 7 of the Act replaces the duty in Section 41 of the NERC Act 2006. The Welsh Ministers publish, review and revise lists of living organisms and types of habitats in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales. With regards to birds specifically, 51 species are included as part of Section 7 of the Act (Ref 6).

2.2 Planning Policy

2.2.1 Full details of relevant national and local planning policy relevant to ecology is provided in **Appendix 7-A Legislative, Policy and Guidance Framework for Technical Topics (EN010166/APP/6.4)**.

2.2.2 The following Local Biodiversity Action Plans (LBAP) identify local priorities for nature conservation and work to deliver agreed actions and targets for priority species and habitats in Flintshire:

- Nature Recovery Action Plan (Ref 8); and
- Supporting Nature in Flintshire (Ref 9).

2.3 Birds of Conservation Concern

UK

2.3.1 The Birds of Conservation Concern 5 (BoCC5) is an assessment of the conservation status of all regularly occurring birds within the UK (Ref 10). The lists (Red, Amber and Green), that indicate the level of conservation importance for each species, are derived from quantitative assessments from standardised criteria. The assessment is based on the most up-to-date evidence available, and criteria include conservation status at global and European levels and, within the UK: historical decline, trends in population and range, rarity, localised distribution and international importance. The lists are drawn together by the UK's leading bird conservation organisations, including the Royal Society for the Protection of Birds (RSPB) and British Trust for Ornithology (BTO).

2.3.2 Red list species are of the most conservation concern and are those that:

- are globally threatened (Critically Endangered, Endangered and Vulnerable, but not Near Threatened) under International Union for Conservation of Nature and Natural Resources (IUCN) guidelines;
- have shown a historical population decline between 1800 and 1995 and have not recovered;
- have suffered a severe non-breeding population decline of more than 50%; and

- whose UK range in the non-breeding season has declined by more than 50% between respective breeding and non-breeding atlases.

2.3.3 Amber list species include:

- those that are threatened in Europe (Critically Endangered, Endangered and Vulnerable, but not Near Threatened as per IUCN Red List Guidelines);
- those that were previously red listed for historical population decline, followed by an increase of at least 100% over 25 years or the longer-term period;
- those that have suffered a moderate non-breeding population decline of between 25% and 50%;
- those whose UK range in the non-breeding season has declined by more than 50% between respective breeding and non-breeding atlases;
- non-breeding rarities (UK population <900 non-breeding individuals);
- non-breeding localisation whereby more than 50% of the UK population was found at ten or fewer sites in the non-breeding season; and
- non-breeding international importance whereby the UK holds at least 20% of the European population in the non-breeding (WI) season of a particular species.

2.3.4 Green list species are not of conservation concern and include all other commonly occurring birds in the UK.

2.3.5 For some non-native/introduced/not regularly occurring/vagrant species (e.g. pheasant and Canada goose) a status is not given.

2.3.6 The BoCC lists confer no legal status, however where any BoCC Red or Amber-listed species are present at a site, their conservation status should be considered when determining the likely impacts (and significance) of proposed plans and projects and in determining the level of mitigation that may be required when birds are to be affected by plans or projects.

Wales

2.3.7 Wales has its own BoCC list, which was last updated and published in December 2022; Birds of Conservation Concern Wales (BoCCW) 4 (Ref 11). Conservation concern for BoCC and BoCCW is categorised in the same way, resulting in Red, Amber and Green Lists. Both sets of lists are applicable to the assessment and are, therefore, both referred to throughout this report.

3. Methodology

3.1 Desk Study

3.1.1 A desk study was undertaken to identify ecological designations specifically for their ornithological interest, as well as contemporary records of protected and notable species of potential relevance to the Proposed Development and locations of ornithological interest or sensitivity (such as habitats regularly used by roosting birds for which designated sites are notified). A summary of the data sources, study areas and data requested / received is provided in **Table 1**. Desk Study areas are shown in **Figure 11-D1 in Annex A**, except where these are stated as being “data specific”, in which case the data received, and their spatial context are described in **Section 4.1** and associated annexes to this report.

3.1.2 A data set was acquired from the BTO Wetland Birds Survey (WeBS) in July 2024 to reflect the spatial extent of the Proposed Development.

3.1.3 In addition to the area-specific requests for data set out in **Table 1**, following the Scoping Opinion on 20 March 2024 (**Appendix 1-B: Scoping Opinion (EN010166/APP/6.4)**), The initial survey findings were presented to Natural Resources Wales (NRW) on 18 July 2024.

Table 1: Desk Study Sources and Study Areas

Data Source	Study Area ¹	Accessed / Data Received	Data Obtained
North Wales Environmental Information Service (Cofnod)	Up to 2 km	March 2024	Species records, non-statutory site locations, and interest features / reasons for designation.
Multi Agency Geographic Information for the Countryside (MAGIC)	Up to 15 km	November 2023	Statutory designated site locations (2 km for local statutory designations).
Joint Nature Conservation Committee (JNCC) website	Up to 15 km	November 2023	Reasons for designation and other information on international statutory designated sites.
British Trust for Ornithology (BTO) Wetland Birds Survey (WeBS) (Ref 12)	Data specific	August 2024	Detailed high and low tide count data for wetland birds occurring within selected

¹ Distance from the Construction and Operation Area

Data Source	Study Area ¹	Accessed / Data Received	Data Obtained
			official count sectors from the last five years.
Aspect Ecology	The Main Development Area and Construction and Indicative Enhancement Area (C&IEA) and adjacent land.	April 2022 to February 2023	Breeding, passage and wintering bird survey data.
Deeside Naturalists' Society (provided by Uniper UK Limited)	Connah's Quay Power Station Nature Reserve adjacent to the Site (Compartment 1 north-west and Compartment 2 north-east).	January 2013 to December 2023	Monthly wetland bird survey data.
North-East Wales Bird Report 2022 (Ref 13)	Flintshire and Denbighshire	November 2024	Species records from across North-East Wales
Flintshire bird recorder	Up to 2 km	May 2024	Barn owl nest site records.
Wirral Barn Owl Trust	Up to 2 km	May 2024	Barn owl nest site records.

3.2 Field Survey

Wetland Bird Counts

3.2.1 Surveys comprised one low tide (diurnal) and three high tide [one diurnal and two nocturnal (the latter ensuring coverage of spring and neap tides)] ornithological surveys each month between November 2023 and October 2024 inclusive.

The Diurnal and Nocturnal Survey Areas (together termed the 'Survey Areas') are illustrated in **Figure 11-D2** in **Annex A**. The Diurnal Survey Area comprises all land within the Order limits including the Main Development Area (but excluding the existing Connah's Quay Power Station operational areas), the Water Connection Corridor, Proposed CO₂ Connection Corridor, Repurposed CO₂ Connection Corridor and C&IEA) and adjacent Dee Estuary habitats up to 1 km (as visibility allowed). The Nocturnal Survey Area comprises the three fields to the west of the existing Connah's Quay Power

Station where the Main Development Area and temporary construction areas are proposed to be located.

3.2.2 The surveys followed the general principles of a BTO WeBS. The survey areas were divided into count sectors. The count sectors are typically within a 500 m radius from the Proposed Development with adjustments made to address design changes and species specific habitat requirements where possible and appropriate to do so. Count sectors were also demarcated:

- where third party data were insufficient to inform the assessment in **Chapter 11: Terrestrial and Aquatic Ecology** of the ES (**EN010166/APP/6.2.11**);
- by the distribution of habitats and the known habitat requirements of birds within the genera and taxonomic families likely to be encountered within the survey areas;
- as a contingency for a broader layout of the evolving project design at the time of survey to encompass proposed infrastructure locations;
- by the availability of suitable locations from which adequate visual coverage of habitats could be achieved;
- by the presence of geographical and habitat features that might provide markers by which the surveyor could judge the location of birds and to aid with navigation around the survey area;
- by the minimisation of risks to health and safety (primarily of the surveyor); and
- by the availability of land access.

3.2.3 These areas were extended in some cases to include habitats beyond 500 m where it was anticipated, based on habitat type and connectivity, that these were likely to have some functional importance and continuity with habitats used by wetland birds within 500 m of the Proposed Development, and that were within an area that could reasonably be included on each survey and that was readily accessible.

3.2.4 The count sectors are shown in **Figures 11-D3 and 11-D4 in Annex A**.

3.2.5 The diurnal high and low tide wetland bird surveys were carried out by an ornithologist, equipped with high-powered optical equipment (tripod-mounted telescope and binoculars), recording all relevant species (as detailed below) within the Diurnal Bird Survey Area (as shown in **Figure 11-D2 in Annex A**). Each survey commenced no later than 2.5 hours prior to high/low tide and finished no earlier than 2.5 hours after the peak tide time².

3.2.6 The nocturnal high tide wetland bird surveys were carried out by ornithologists, equipped with a thermal imager monocular (Pulsar Axion 2), recording all relevant species within the Nocturnal Bird Survey Area (as shown on **Figure 11-D2 in Annex A**). Each survey commenced no earlier than 1.5 hours prior to high tide and finished no later than 1.5 hours after high tide.

² The time at which the tide was highest or lowest.

3.2.7 The following birds (relevant species), which include (but are not limited to) all species that are reasons for the notification of the various coastal statutory designated sites within the maximum Study Area defined in **Table 1**, were recorded during the counts, where observed:

- raptors;
- cormorants and shags;
- waders;
- terns, skuas, auks and gulls;
- sawbills;
- grebes;
- divers;
- herons;
- wildfowl (including all ducks, geese and swans); and
- kingfisher (*Alcedo atthis*).

3.2.8 All target birds observed or heard within the survey areas were recorded onto a smart phone with a pre-loaded survey map on the Field Maps app. In addition, the following details were recorded: species, number of birds, behaviour (e.g., roosting, foraging, loafing), and notes on disturbance (e.g., surveyor, natural (e.g., predator) or anthropogenic (e.g., overflying aircraft)) where such instances occur. Survey metadata were also collected, comprising start and end times, tidal state (including height and time), weather (temperature, wind speed and direction, and precipitation), sunrise/set, and other relevant notes (e.g., survey limitation). This metadata is provided in **Annex B**.

Breeding Birds

3.2.9 Surveys of breeding birds were undertaken at locations of suitable semi-natural and wetland habitats within locations of proposed permanent infrastructure, site compounds, storage areas, laydowns and potentially significant temporary habitat loss or disturbance, following the Common Bird Census (CBC) method (Ref 14; Ref 15) within the Diurnal Survey Area (as shown on **Figure 11-D2 in Annex A**).

3.2.10 The survey visits were undertaken on six occasions between late-March and early-July 2024, with at least two weeks between visits. During each survey visit, an ornithologist equipped with high-powered binoculars recorded all species within the Diurnal Bird Survey Area. Each survey was completed between 06:00 and 11:00 hrs in suitable weather conditions with good visibility for recording bird breeding activity.

3.2.11 All birds seen or heard within the Diurnal Survey Area were recorded onto a smart phone with a pre-loaded survey map on the Field Maps app. Records were plotted on the map with details of each recorded: species, number of birds, behaviour (e.g., singing, territorial interactions, nesting activity), and notes on disturbance (e.g., surveyor, natural (e.g., predator) or anthropogenic (e.g., overflying aircraft)) where such instances occur. Survey metadata was also collected, comprising start and end times, tidal state

(including height and time), weather (temperature, wind speed and direction, and precipitation), sunrise/set, and other relevant notes (e.g., survey limitation). This metadata is provided in **Annex C**.

3.2.12 An assessment was made of the breeding status of each species recorded at the Diurnal Survey Area using the criteria adopted by the BTO Bird Atlas 2007-11 (Ref 16) with each species being assigned to one of four levels. The criteria for this are shown in

3.2.13 Table 2.

Table 2: Criteria for assigning breeding status

Breeding Status	Criteria
Non-breeding	Flying over, species observed but suspected to be still on migration and/or species observed but suspected to be summering non-breeder.
Possible	Species observed in breeding season in suitable habitat or singing male present (or breeding calls heard) in breeding season in suitable breeding habitat.
Probable	Pair observed in suitable nesting habitat in breeding season, Permanent territory presumed through registration of territorial behaviour (song, etc.) on at least two different days a week or more apart at the same or many individuals on one day, courtship and display judged to be in or near potential breeding habitat, visiting probable nest site, agitated behaviour or alarm calls from adults, suggesting probable presence of nest or young nearby or nest building or excavating nest-hole.
Confirmed	Distraction-display or injury feigning, recently fledged young or downy young, used nest or eggshells found (occupied or laid within period of survey), adults entering or leaving nest-site in circumstances indicating occupied nest (including high nests or nest holes, the contents of which cannot be seen) or adults seen incubating, adult carrying faecal sac or food for young, nest containing eggs or nest with young seen or heard.

3.2.14 Where breeding signs were recorded, it is assumed that a 'breeding territory' was present and this term is used from this point forward within this report. Territory analysis was carried out following guidance in Marchant (1983) and Bibby *et al.* (2000) (Ref 15; Ref 17) using the cumulative data from all survey visits to identify clusters of bird registrations indicative of the presence of territories. Determination of the number of breeding territories is calculated from when the same species was recorded in the same vicinity on two or more visits and showing signs of at least 'Probable' breeding (see breeding evidence criteria in Paragraph 3.2.14).

3.2.15 The main output of this exercise is an estimated number and approximate locations of territories rather than a definitive proof of breeding for individual species, although proof of breeding can be obtained if certain behaviours are observed, such as the presence of adults visiting nest sites, incubating

adults or fledged young. A range of breeding territories is reported for each species, reflecting the precautionary approach adopted given multiple registrations or signs of breeding across survey visits within suitable breeding habitat. Over-flying birds were recorded to establish their presence, but they were not considered to form part of the bird assemblage and were therefore excluded from territory analysis unless they were observed to land within the Survey Sites. Standard recording techniques were also used to record non-breeding species, although these were excluded from territory analysis.

3.3 Limitations

- 3.3.1 Species, particularly highly mobile ones such as birds, can be transient and their presence intermittent. Desk study data provide a snapshot of the presence of species rather than a comprehensive record of all the species that use the habitats within a study area. Furthermore, they are dependent on records being collected and submitted to the relevant records centre, rather than being collected systematically by means of a formal survey protocol carried out at regular intervals. Therefore, the absence of a species record cannot be interpreted as the absence of a species within a study area. Conversely, the effects of habitat and other environmental changes (such as climate change) and other factors acting that influence the distribution and numbers of a given species over time means that the absence of a species record cannot be taken to mean that the species is entirely absent from a study area.
- 3.3.2 It is possible that the restrictions on travel imposed by national government to help stem the spread of Covid-19 in 2020 and 2021 could have reduced the number of records submitted to records centres nationwide during this period. Therefore, the number of third-party bird records for these two years may be lower than would otherwise be expected. However, there is no strong indication of this in any of the data received.
- 3.3.3 Bird counts could not be carried out across all parts of the survey areas on all surveys due to conditions of restricted access and / or certain conditions imposed by landowners when accessing private land. These access restrictions delayed survey visits to a section of the Proposed and Repurposed CO₂ Connection Corridors until June 2024. However, delayed access to a section of the Proposed and Repurposed CO₂ Connection Corridors is considered by the surveyor not to limit the validity of the recorded survey data. The area of the existing Connah's Quay Power Station was also not subject to any bird survey on foot due to access restrictions, however this area was suitably covered from adjacent land.
- 3.3.4 Short daylengths prevented the complete coverage of survey areas during daylight hours on some of the surveys in January and February 2024. To mitigate the restrictions of short daylength, the survey window was extended slightly on some occasions beyond that of a standard WeBS count.
- 3.3.5 The November Nocturnal High Neap wetland bird survey was conducted on 1 December due to equipment availability, and the December Nocturnal High Neap wetland bird survey had to be rescheduled to 24 January due to poor weather. However, it is considered that a sufficient survey effort was

undertaken in combination with extensive desk study to accurately assess the ornithological value of the Main Development Area.

4. Results and Evaluation

4.1 Desk Study

Designated Sites

4.1.1 **Table 3** summarises the designated sites within the Study Area (see **Table 1** for the study areas applied to different designations) and their spatial relationship to the Order limits. The designated sites are shown on **Figure 11-D1 in Annex A**.

4.1.2 There are two SPAs, one Ramsar site and six Sites of Special Scientific Interest (SSSIs) within 15 km of the Order limits. There are two Local Wildlife Sites (LWS) within 2 km of the Order limits for which birds are one of few ecological features for designation.

Table 3: Designated sites (notified for ornithological features) within the Study Area

Designated Site	Interest Feature(s) / Reason(s) for Notification	Ecological Value and Status	Proximity to Order limits	Proximity to the Proposed Development Main Development Area ³
Statutory				
The Dee Estuary SPA	<p>Article 4.1 qualification (as the site is regularly used by 1% or more of the Great Britain populations in any season); during the breeding season the SPA regularly supports:</p> <ul style="list-style-type: none"> common tern (<i>Sterna hirundo</i>) 392 individuals representing 3.2% (5 year mean) of the GB population 1995/9 little tern (<i>Sternula albifrons</i>) 69 individuals representing 2.9% (5 year mean) of the GB population 1995/9 <p>Article 4.1 qualification (as the site is regularly used by 1% or more of the Great Britain populations in any season); on passage during spring/autumn the SPA regularly supports:</p> <ul style="list-style-type: none"> Sandwich tern (<i>Thalasseus sandvicensis</i>) 957 individuals representing 2.2% (5 year mean) of the GB population 1994/5-1998/9 <p>Article 4.1 qualification (as the site is regularly used by 1% or more of the Great Britain populations in any season); during the winter the SPA regularly supports:</p> <ul style="list-style-type: none"> bar-tailed godwit (<i>Limosa lapponica</i>) 1,150 individuals representing 2.2% (5 year mean) of the GB population 1994/5-1998/9 	International	0 m	0 m

³ The Main Development Area includes the 'Main Development Area Laydown Areas' for temporary use during construction (see Section 1.1.3).

Designated Site	Interest Feature(s) / Reason(s) for Notification	Ecological Value and Status	Proximity to Order limits	Proximity to the Proposed Development Main Development Area ³
	<p>Article 4.2 qualification (as the site is regularly used by 1% or more of the biogeographical populations of migratory species in any season); over winter the SPA regularly supports:</p> <ul style="list-style-type: none"> • pintail (<i>Anas acuta</i>) 5,407 individuals representing 9% (5 year mean) of the North-western Europe population 1994/5-1998/9 • teal (<i>Anas crecca</i>) 5,251 individuals representing 1.3% (5 year mean) of the North-western Europe population 1994/5-1998/9 • dunlin (<i>Calidris alpina</i> ssp. <i>alpina</i>) 27,769 individuals representing 2% (5 year mean) of the Northern Siberia/Europe/Western Africa population 1994/5-1998/9 • knot (<i>Calidris canutus</i>) 12,394 individuals representing 3.5% (5 year mean) of the North-eastern Canada/Greenland/Iceland/Northwestern Africa population 1994/5-1998/9 • oystercatcher (<i>Haematopus ostralegus</i>) 22,677 individuals representing 2.5% (5 year mean) of the Europe/North-western Africa population 1994/5-1998/9 • black-tailed godwit (<i>Limosa limosa</i> ssp. <i>islandica</i>) 1,747 individuals representing 2.5% (5 year mean) of the Iceland (breeding) population population 1994/5-1998/9 • curlew (<i>Numenius arquata</i>) 3,899 individuals representing 1.1% (5 year mean) of the Europe (breeding) population 1994/5-1998/9 			

Designated Site	Interest Feature(s) / Reason(s) for Notification	Ecological Value and Status	Proximity to Order limits	Proximity to the Proposed Development Main Development Area ³
	<ul style="list-style-type: none"> grey plover (<i>Pluvialis squatarola</i>) 1,643 individuals representing 1.1% (5 year mean) of the Eastern Atlantic (wintering) population 1994/5-1998/9 shelduck (<i>Tadorna tadorna</i>) 7,725 individuals representing 2.6% (5 year mean) of the North-western Europe population 1994/5-1998/9 redshank (<i>Tringa totanus</i>) 5,293 individuals representing 3.5% (5 year mean) of the Eastern Atlantic (wintering) population 1994/5-1998/9 <p>Article 4.2 qualification (as the site is regularly used by 1% or more of the biogeographical populations of migratory species in any season); on passage during spring/autumn the SPA regularly supports:</p> <ul style="list-style-type: none"> redshank 8,795 individuals representing 5.9% (5 year mean) of the Eastern Atlantic (wintering) population 1994-1998 <p>Article 4.2 qualification (as the site is regularly used by over 20,000 waterbirds in any season); the SPA over winter wetland bird assemblage regularly supports 120,726 (5 year peak mean 1994/5 to 1998/9), species include:</p> <ul style="list-style-type: none"> pintail, knot, bar-tailed godwit, oystercatcher, redshank and shelduck 			
The Dee Estuary Ramsar site	Criterion 5 qualification (as the site is regularly used by over 20,000 waterbirds in any season): outside the breeding season the Ramsar site regularly supports 120,726 individual wetland birds (5 year peak mean 1994/5 to 1998/9).	International	0 m	0 m

Designated Site	Interest Feature(s) / Reason(s) for Notification	Ecological Value and Status	Proximity to Order limits	Proximity to the Proposed Development Main Development Area ³
	<p>Criterion 6 qualification as species/populations regularly recorded at levels of international importance); on passage during spring/autumn the Ramsar site peak counts:</p> <ul style="list-style-type: none"> • redshank 8,795 individuals representing 5.9% (5 year mean) of the Eastern Atlantic (wintering) population 1994/5-1998/9 <p>Criterion 6 qualification (as species/populations regularly recorded at levels of international importance); over winter the Ramsar site peak counts:</p> <ul style="list-style-type: none"> • pintail 5,407 individuals representing 9% (5 year mean) of the North-western Europe population 1994/5-1998/9 • teal 5,251 individuals representing 1.3% (5 year mean) of the North-western Europe population 1994/5-1998/9 • dunlin 27,769 individuals representing 2% (5 year mean) of the Northern Siberia/Europe/Western Africa population 1994/5-1998/9 • knot 12,394 individuals representing 3.5% (5 year mean) of the North-eastern Canada/Greenland/Iceland/Northwestern Africa population 1994/5-1998/9 • oystercatcher 22,677 individuals representing 2.5% (5 year mean) of the Europe/North-western Africa population 1994/5-1998/9 • bar-tailed godwit 1,150 individuals representing 1.2% (5 year mean) of the GB population 1994/5-1998/9 			

Designated Site	Interest Feature(s) / Reason(s) for Notification	Ecological Value and Status	Proximity to Order limits	Proximity to the Proposed Development Main Development Area ³
	<ul style="list-style-type: none"> black-tailed godwit 1,747 individuals representing 2.5% (5 year mean) of the Iceland (breeding) population 1994/5-1998/9 curlew 3,899 individuals representing 1.1% (5 year mean) of the Europe (breeding) population 1994/5-1998/9 grey plover 1,643 individuals representing 1.1% (5 year mean) of the Eastern Atlantic (wintering) population 1994/5-1998/9 shelduck 7,725 individuals representing 2.6% (5 year mean) of the North-western Europe population 1994/5-1998/9 redshank 5,293 individuals representing 3.5% (5 year mean) of the Eastern Atlantic (wintering) population 1994/5-1998/9 			
Mersey Estuary SPA	<p>Article 4.1 qualification (as the site is regularly used by 1% or more of the Great Britain populations in any season); during the winter the SPA regularly supports:</p> <ul style="list-style-type: none"> golden plover (<i>Pluvialis apricaria</i>) 1.2% (5 year mean) of the GB population 1993/4-1997/8 <p>Article 4.2 qualification (as the site is regularly used by 1% or more of the biogeographical populations of migratory species in any season); over winter the SPA regularly supports:</p> <ul style="list-style-type: none"> pintail 1.9% (5 year mean) of the North-western Europe population 1993/4-1997/8 teal 2.9% (5 year mean) of the North-western Europe population 1993/4-1997/8 	International	13 km	13 km

Designated Site	Interest Feature(s) / Reason(s) for Notification	Ecological Value and Status	Proximity to Order limits	Proximity to the Proposed Development Main Development Area ³
	<ul style="list-style-type: none"> wigeon (<i>Mareca penelope</i>) 4.2% (5 year mean) of the Western Siberia/North-western Europe /North-eastern Europe population 1993/4-1997/8 dunlin 3.6% (5 year mean) of the Northern Siberia/Europe/Western Africa population 1993/4-1997/8 black-tailed godwit 1.6% (5 year mean) of the Iceland/Western breeding population 1993/4-1997/8 and 1.1% (5 year mean) of the GB population 1993/4-1997/8 grey plover 2.3% (5 year mean) of the Eastern Atlantic wintering population 1993/4-1997/8 great crested grebe (<i>Podiceps cristatus</i>) 1.4% (5 year mean) of the North-western Europe wintering population 1993/4-1997/8 shelduck 2.2% (5 year mean) of the North-western Europe population 1993/4-1997/8 redshank 2.8% (5 year mean) of the Eastern Atlantic (wintering) population 1993/4-1997/8 lapwing (<i>Vanellus vanellus</i>) 0.7% of the Europe breeding population 1993/4-1997/8 <p>Article 4.2 qualification (as the site is regularly used by 1% or more of the biogeographical populations of migratory species in any season); on passage during spring/autumn the SPA regularly supports:</p> <ul style="list-style-type: none"> ringed plover (<i>Charadrius hiaticula</i>) 1.7% (5 year mean) of the Europe/Northern Africa (wintering) population 1993-1997 			

Designated Site	Interest Feature(s) / Reason(s) for Notification	Ecological Value and Status	Proximity to Order limits	Proximity to the Proposed Development Main Development Area ³
	<ul style="list-style-type: none"> redshank 3.8% (5 year mean) of the Eastern Atlantic (wintering) population 1993-1997 			
Mersey Estuary Ramsar site	<p>Criterion 5 qualification (as the site is regularly used by over 20,000 waterbirds in any season): outside the breeding season the Ramsar site regularly supports 89,576 individual wetland birds (5 year peak mean 1998/9 to 2002/3).</p> <p>Criterion 6 qualification as species/populations regularly recorded at levels of international importance); on passage during spring/autumn the Ramsar site peak counts:</p> <ul style="list-style-type: none"> shelduck 12,676 individuals representing 4.2% (5 year mean) of the North-western Europe population 1998/9-2002/3 black-tailed godwit 2,011 individuals representing 5.7% (5 year mean) of the Iceland/Western Europe population 1998/9-2002/3 redshank 6,651 individuals representing 2.6% (5 year mean) of the Eastern Atlantic population 1998/9-2002/3 <p>Criterion 6 qualification (as species/populations regularly recorded at levels of international importance); over winter the Ramsar site peak counts:</p> <ul style="list-style-type: none"> pintail 565 individuals representing 2% (5 year mean) of the North-western Europe population 1998/9-2002/3 teal 10,613 individuals representing 2.6% (5 year mean) of the North-western Europe population 1998/9-2002/3 	International	13 km	13 km

Designated Site	Interest Feature(s) / Reason(s) for Notification	Ecological Value and Status	Proximity to Order limits	Proximity to the Proposed Development Main Development Area ³
	<ul style="list-style-type: none"> dunlin 48,364 individuals representing 3.6% (5 year mean) of the Western Siberia/Western Europe population 1998/9-2002/3 			
Dee Estuary / Aber Afon Dyfrdwy SSSI	<p>The SSSI is a nationally important staging post for migrating birds in spring and autumn.</p> <p>It supports nationally important numbers of ringed plover on passage and non-breeding black-tailed godwit during the summer.</p> <p>It also supports nationally important numbers of common tern foraging during the summer, great crested grebe moulting during the autumn and cormorant (<i>Phalacrocorax carbo</i>) throughout the year.</p>	National	0 m	0 m
Shotton Lagoons and Reedbeds SSSI	Shotton Lagoons and Reedbeds supports a large population of breeding common terns, the largest in Wales. In winter, waterfowl from the nearby Dee Estuary also frequent the SSSI.	National	485 m north-east	1.3 km east
Inner Marsh Farm SSSI	Inner Marsh Farm supports aggregations of non-breeding birds including: black-tailed godwit, pintail and teal.	National	2.8 km north-east	3.2 km north-east
Dibbinsdale SSSI	The diverse bird population contributes to the Dibbinsdale designation, with 61 regular breeding species. The species include: tawny owl (<i>Strix aluco</i>), kingfisher (<i>Alcedo atthis</i>), green woodpecker (<i>Picus viridis</i>), great spotted woodpecker (<i>Dendrocopos major</i>), nuthatch (<i>Sitta europaea</i>), treecreeper (<i>Certhia familiaris</i>), willow tit (<i>Poecile montanus</i>) and grasshopper warbler (<i>Locustella naevia</i>).	National	10.4 km north-east	10.6 km north-east
Mersey Estuary SSSI	The Mersey Estuary encompasses extensive intertidal sand and mudflats. These habitats support curlew and golden plover.	National	12.7 km north-east	13.0 km north-east

Designated Site	Interest Feature(s) / Reason(s) for Notification	Ecological Value and Status	Proximity to Order limits	Proximity to the Proposed Development Main Development Area ³
New Ferry SSSI	New Ferry's designation is attributed to its importance for non-breeding bird aggregations, particularly black-tailed godwit and pintail. The site's littoral sediment provides critical resources for these and other bird species.	National	14.5 km north-east	14.7 km north-east
Non-statutory				
The River Dee LWS	An important site for birds, used by waders, kingfisher, lapwing and gulls.	District	1.1 km east	2.3 km east
Shotton Steelworks LWS	The site is important for breeding and wintering birds, there being an important tern colony along with many wetland species.	District	1.4 km north-east	2.1 km east

Cofnod Records

4.1.3 There are 107,173 records for 208 bird species within the 2 km study area within the last 10 years. Out of these species there are 9,234 records associated with 36 species of Annex 1 birds; 11,904 records associated with 47 species of birds listed as Schedule 1; and 88,247 records for 162 species of birds associated with National and Local BAPs. Annex 1 and Schedule 1 birds within the study area are listed in **Table 4**.

Table 4: Annex 1 and Schedule 1 bird species returned by Cofnod

Common Name	Scientific Name	Annex 1	Schedule 1	BoCC Wales	Section 7
Arctic Tern	<i>Sterna paradisaea</i>	X		Red	
Avocet	<i>Recurvirostra avosetta</i>	X	X	Green	
Barnacle goose	<i>Branta leucopsis</i>	X		Not listed	
Barn owl	<i>Tyto alba</i>		X	Green	
Bar-tailed godwit	<i>Limosa lapponica</i>	X		Red	X
Bee-eater	<i>Merops apiaster</i>		X	Not listed	
Bewick's swan	<i>Cygnus columbianus bewickii</i>	X	X	Red	X
Black-headed gull	<i>Chroicocephalus ridibundus</i>			Red	X
Black redstart	<i>Phoenicurus ochruros</i>		X	Amber	
Black tern	<i>Chlidonias niger</i>	X	X	Green	
Black-necked grebe	<i>Podiceps nigricollis</i>		X	Amber	
Black-tailed godwit	<i>Limosa limosa</i>		X	Amber	
Brambling	<i>Fringilla montifringilla</i>		X	Green	
Cetti's warbler	<i>Cettia cetti</i>		X	Green	
Common scoter	<i>Melanitta nigra</i>		X	Amber	X
Common tern	<i>Sterna hirundo</i>	X		Amber	
Crossbill	<i>Loxia curvirostra</i>		X	Green	
Curlew	<i>Numenius arquata</i>			Red	X
Dunlin	<i>Calidris alpina</i>			Red	
Fieldfare	<i>Turdus pilaris</i>		X	Amber	

Common Name	Scientific Name	Annex 1	Schedule 1	BoCC Wales	Section 7
Firecrest	<i>Regulus ignicapilla</i>		X	Amber	
Garganey	<i>Spatula querquedula</i>		X	Amber	
Golden plover	<i>Pluvialis apricaria</i>	X		Red	X
Great northern diver	<i>Gavia immer</i>	X	X	Green	
Greenfinch	<i>Chloris chloris</i>			Red	
Greenland white-fronted goose	<i>Anser albifrons flavirostris</i>	X		Red	X
Green sandpiper	<i>Tringa ochropus</i>		X	Amber	
Greenshank	<i>Tringa nebularia</i>		X	Green	
Hen harrier	<i>Circus cyaneus</i>	X	X	Red	X
Herring gull	<i>Larus argentatus</i>			Red	X
Hobby	<i>Falco subbuteo</i>		X	Green	
Honey-buzzard	<i>Pernis apivorus</i>	X	X	Red	
Kestrel	<i>Falco tinnunculus</i>			Red	
Kingfisher	<i>Alcedo atthis</i>	X	X	Green	
Knot	<i>Calidris canutus</i>			Amber	
Lapland bunting	<i>Calcarius lapponicus</i>		X	Amber	
Lapwing	<i>Vanellus vanellus</i>			Red	X
Leach's petrel	<i>Hydrobates leucorhous</i>	X	X	Red	
Linnet	<i>Linaria cannabina</i>			Red	X
Little egret	<i>Egretta garzetta</i>	X		Green	
Little gull	<i>Hydrocoloeus minutus</i>	X	X	Amber	
Little ringed plover	<i>Charadrius dubius</i>		X	Green	
Little tern	<i>Sternula albifrons</i>	X	X	Red	
Long-tailed duck	<i>Clangula hyemalis</i>		X	Red	
Marsh harrier	<i>Circus aeruginosus</i>	X	X	Amber	
Meadow pipit	<i>Anthus pratensis</i>			Red	

Common Name	Scientific Name	Annex 1	Schedule 1	BoCC Wales	Section 7
Mediterranean gull	<i>Ichthyaetus melanocephalus</i>	X	X	Amber	
Merlin	<i>Falco columbarius</i>	X	X	Red	
Mute swan	<i>Cygnus olor</i>	X	X	Green	
Osprey	<i>Pandion haliaetus</i>	X	X	Amber	
Oystercatcher	<i>Haematopus ostralegus</i>			Amber	
Pallid harrier	<i>Circus macrourus</i>	X	X	Not Listed	
Peregrine	<i>Falco peregrinus</i>	X	X	Green	
Pintail	<i>Anas acuta</i>			Amber	
Red kite	<i>Milvus milvus</i>	X	X	Green	
Red-necked phalarope	<i>Phalaropus lobatus</i>	X	X	Not Listed	
Red-throated diver	<i>Gavia stellata</i>	X	X	Amber	
Redshank	<i>Tringa totanus</i>			Red	
Redwing	<i>Turdus iliacus</i>		X	Green	
Ringed plover	<i>Charadrius hiaticula</i>			Red	
Ruddy shelduck	<i>Tadorna ferruginea</i>	X		Not Listed	
Ruff	<i>Calidris pugnax</i>	X	X	Amber	
Sandwich tern	<i>Thalasseus sandvicensis</i>	X		Amber	
Scaup	<i>Aythya marila</i>		X	Amber	
Shelduck	<i>Tadorna tadorna</i>			Red	
Short-eared owl	<i>Asio flammeus</i>	X		Amber	
Song thrush	<i>Turdus philomelos</i>				X
Slavonian grebe	<i>Podiceps auritus</i>	X	X	Red	
Song thrush	<i>Turdus philomelos</i>				X
Smew	<i>Mergus albellus</i>	X		Not Listed	
Snow bunting	<i>Plectrophenax nivalis</i>		X	Amber	
Spoonbill	<i>Platalea leucorodia</i>	X	X	Amber	

Common Name	Scientific Name	Annex 1	Schedule 1	BoCC Wales	Section 7
Starling	<i>Sturnus vulgaris</i>			Red	
Teal	<i>Anas crecca</i>			Amber	
Whooper swan	<i>Cygnus columbianus</i>	X	X	Green	
Whimbrel	<i>Numenius phaeopus</i>		X	Amber	
Whitethroat	<i>Currucà communis</i>			Red	
Wigeon	<i>Mareca penelope</i>			Amber	
Wood sandpiper	<i>Tringa glareola</i>	X	X	Amber	

Aspect Ecology

4.1.4 The ornithological surveys conducted at the Main Development Area by Aspect Ecology between April 2022 and February 2023 showed that the adjacent part of the Dee Estuary is utilised by a wide range of birds; species observed included large numbers of Canada goose (*Branta canadensis*), pink-footed goose, shelduck, wigeon, mallard (*Anas platyrhynchos*), teal, oystercatcher, lapwing, black-tailed godwit, dunlin, redshank and black-headed gull (*Chroicocephalus ridibundus*). These findings underscored the Estuary's importance as a valuable habitat for a diverse range of bird species. Within the Connah's Quay Nature Reserve Compartment 1, before the lapse in management the grassland and large pond attracted substantial numbers of wetland birds such as teal, black-tailed godwit and, less frequently, pintail.

4.1.5 The surveys Aspect Ecology conducted at the C&IEA between April 2022 and February 2023 resulted in fewer birds and species recorded than from the Connah's Quay Nature Reserve. Redshank, shelduck, teal, oystercatcher, curlew, and dunlin were recorded in relatively small numbers along the saltmarsh fringe. However, none of these species were observed within the C&IEA itself, which lacks suitable habitat for wetland bird species. Breeding bird observations within the C&IEA included low numbers of species such as woodpigeon (*Columba palumbus*), wren (*Troglodytes troglodytes*), dunnock (*Prunella modularis*), whitethroat (*Currucà communis*) and greenfinch (*Chloris chloris*).

Deeside Naturalists' Society

4.1.6 Between 2019 to 2023 there have been some changes in the species and abundance of birds recorded at the Connah's Quay Nature Reserve, such as: avocet and spotted redshank (*Tringa erythropus*) within Compartment 2

which have occurred more frequently within the last five years. In Compartment 1, the peak counts of curlew and black-tailed godwit have not been exceeded since December 2019 and September 2022 respectively, when the grassland sward was shorter. Peak counts of species relevant to the assessment are presented in **Table 5**.

Table 5: Connah's Quay Nature Reserve five year (2019/23) peak counts of species relevant to the assessment

Species	Peak Count	Date	Location
Pintail	700	October 2022	Compartment 1
Teal	1,100	October 2022	Compartment 1
Wigeon	550	January 2021	Compartment 2
Curlew	82	December 2019	Compartment 1
Black-tailed godwit	1,500	September 2022	Compartment 1
Knot	27	August 2023	Compartment 2
Redshank	5,400	September 2023	Compartment 2
Spotted redshank	21	September 2022	Compartment 2
Greenshank (<i>Tringa nebularia</i>)	37	September 2022	Compartment 2

Barn Owl Nest Records

4.1.7 Wirral Barn Owl Trust (WBOT) confirmed that the closest barn owl nest box is located approximately 4 km north-east of the Order limits at Burton, Cheshire. This nest box was not being used by barn owls in 2024 (Seve Harris pers.comm, 4 July 2024, WBOT).

4.1.8 No barn owl nest sites within the Search Area are known by the Flintshire Bird Recorder (Glenn Morris pers.comm, 24 May 2024).

British Trust for Ornithology Wetland Birds Survey Low Tide Data

4.1.9 The low tide data for the winter of 2021/22 were purchased for all seven sectors adjacent to and up to approximately 500 m from the Order limits. The low tide sector summary data from BTO is provided in **Annex D**, along with a plan showing the sectors (**Figure 11-D3** in **Annex A**).

4.1.10 The data received provide extremely detailed information on numbers of wetland birds within the Dee Estuary area as a whole and within individual sectors, but the data lack detail regarding habitat use by or distribution of birds at a scale finer than sector level.

4.1.11 Low tide data are not used in setting thresholds for SPA populations but are useful for contextualising the relative importance of intertidal habitats adjacent to the Order limits and identifying species that might occur inland.

4.1.12 The low tide count data included 11 qualifying species of the Dee Estuary SPA / Ramsar site, four qualifying species of the equivalent SSSI, twelve qualifying species of Mersey Estuary SPA/Ramsar site, two qualifying species of the equivalent SSSI, ten qualifying species of Inner Marsh Farm SSSI and two qualifying species of New Ferry SSSI. However, the metrics for total number of species recorded indicate that collectively this area supports a much larger number of species regardless of their inclusion or otherwise as notified features of the designations, with 60 species recorded in total across all Dee Estuary count sectors.

4.1.13 Each table in **Annex D** includes the % contribution of that sector to the whole site total for each species. The following observations regarding Dee Estuary SPA/ Ramsar and SSSI and Mersey Estuary SPA/ Ramsar site species can be made:

- DD038 supported 11.1% of the designated site total for redshank; and
- DD039 supported the majority of the designated site totals for black-tailed godwit (53.4%) and avocet (50.0%), with a significant contribution for lapwing.

British Trust for Ornithology Wetland Birds Survey Core Count Data

4.1.14 The core count (high tide) five-year synopsis tables were purchased for all three sectors adjacent to and up to approximately 500 m from the Order limits. The core count sector summary data from BTO is provided in **Annex E**, along with a plan showing the sectors (**Figure 11-D4** in **Annex A**). The following information has been added to each sector table to provide context to the numbers recorded for each SPA and Ramsar site species:

- the qualifying population size for individual species (as stated on the relevant site data sheet);
- the qualifying population size for assemblage species (the average derived from the last five years of data available, as stated in Austin *et al.* 2023); and
- a significance threshold of 1% of the relevant SPA/ Ramsar site population.

4.1.15 The core count data are too detailed to include in full within this report, however a summary of the data is provided in **Table 6** and the narrative that follows. The table sets out the patterns of occurrence of SPA and Ramsar site qualifying species and identifies where the counts of these species equaled or exceeded 1% of the relevant SPA/ Ramsar site populations.

4.1.16 Qualifying populations are not provided for SSSIs, however, where species exceed the national thresholds stated in the synopsis tables in **Annex E**, this is identified in **Table 6**.

Table 6: Exceedance of SPA and Ramsar site 1% thresholds for The Dee Estuary SPA / Ramsar and Mersey Estuary SPA/ Ramsar site

(Exceedances are for Dee Estuary and Mersey Estuary(*) designations unless stated otherwise; Y = equals or exceeds 1% threshold; N = lower than 1% threshold; A = species is absent from the count sectors)

BTO Core Count Sectors and Names	69426 Deeside Naturalists Reserve	-	69427 – White Sands	69459 Oakenholt Marsh	-
Total number of species counted	51		41		56
Number of SPA Species counted	13		11		18
Bar-tailed godwit	A		A		Y
Black-tailed godwit	Y		Y		Y
Common tern	Y		A		Y
Curlew	Y		Y		Y
Dunlin	N		Y		Y
Great crested grebe	Y		Y		Y
Golden plover*	A		A		Y
Grey plover	A		A		N
Knot	N		A		Y
Lapwing	Y		Y		N
Oystercatcher	N		Y		Y
Pintail	N		Y		Y
Redshank	Y		Y		Y
Ringed plover	A		A		Y
Sandwich tern	A		A		N
Shelduck	N		Y		Y
Teal	Y		Y		Y
Wigeon	Y		Y		Y

4.1.17 The core count sectors were all estuarine habitat and so conclusions of habitat preference cannot be drawn.

4.1.18 The following patterns of occurrence and general observations can be made:

- black-tailed godwit, curlew, great crested grebe, redshank, teal and wigeon exceeded 1% of the SPA threshold in all three count sectors; and
- grey plover and Sandwich tern were the only SPA species that did not exceed 1% SPA thresholds in any of the three count sectors.

- 4.1.19 All of the core count sectors contribute significant or at least notable numbers of one or more qualifying species to the overall species assemblage for the Dee Estuary. All qualifying species are represented by the core count sectors, with notable numbers of all but sandwich tern present across the Study Area.
- 4.1.20 The Deeside Naturalist's Reserve sector (which includes Connah's Quay Nature Reserve Compartments 1 and 2) overlaps with two fields within the Main Development Area. This sector supported small numbers of dunlin, oystercatcher and pintail, though none exceeded the 1% SPA threshold, despite doing so in the other surveyed count sectors by considerable margins.

4.2 Field Survey

Wetland Bird Counts

- 4.2.1 The total number of species recorded across all survey areas was 48 at low tide and 43 at high tide, of which 14 are qualifying features of one or more of the Ramsar site, SPAs and SSSIs listed in **Table 3**.
- 4.2.2 Summary count data (peak and mean bird counts by sector) are provided in **Annex F**. The tables within **Annex F** identify the peak and mean counts of all species, by sector, which occurred during the AECOM bird counts. They also identify where peak counts of SPA species equaled or exceeded 1% of the SPA population. This information will support the assessment of impacts on wetland birds in **Chapter 11: Terrestrial and Aquatic Ecology (EN010166/APP/6.2.11)**. For the purposes of this baseline report, descriptions of bird distribution and key locations for wetland birds are provided as follows. A map of the key locations frequented by wetland bird species of importance is provided on **Figure 11-D5** in **Annex A**.
- 4.2.3 The Survey Area regularly supports a large number of foraging and roosting waders and waterfowl. The pattern of use by all species is impacted by tide, prey availability, seasonality and other factors which are more difficult to quantify such as anthropogenic disturbance and predation, notably from peregrine and marsh harrier.
- 4.2.4 The wetland bird survey findings align with the BTO WeBS low tide and core count data within the corresponding sectors as indicated in the respective survey data tables provided in **Annex F**.
- 4.2.5 Within the Order limits, curlew is the only Dee Estuary SPA/ Ramsar site qualifying species that regularly exceeds the 1% population threshold, indicating functional linkage⁴¹ (Ref 18). More precisely, the fields at the Main Development Area are utilised by curlew for foraging and roosting. Curlew were regularly recorded in these fields between October 2023 and April 2024, both at high tide and low tide and during the day and night. A peak count of 60 (1.54% of the Dee Estuary SPA/ Ramsar site population) was recorded in these fields during January 2024. The fields at the Main Development Area

⁴ Functionally linked land' (FLL) is a term often used to describe areas of habitat occurring outside a designated site which are critical to, or necessary for, the ecological or behavioural functions in a relevant season of a qualifying feature for which a Special Areas of Conservation (SAC), Special Protection Area (SPA) or Ramsar site has been designated. These fields are reported to have 'Moderate Potential' as Functionally Linked Land to The Dee Estuary SPA. Natural England Commissioned Report NECR483 (Natural England, 2022).

also regularly attract lapwing, shelduck, oystercatcher and snipe in smaller numbers mainly between October and April.

4.2.6 The mudflats north of the Order limits provide important habitat for a number of the Dee Estuary SPA/ Ramsar site and Mersey Estuary SPA/ Ramsar site qualifying species. In particular, the mudflats within the Survey Area supported numbers that exceed the 1% SPA threshold at some point during the survey effort: bar-tailed godwit (2.43%), black-tailed godwit (171.72%), curlew (4.92%), dunlin (5.76%), lapwing (6.26%), oystercatcher (4.72%), redshank (20.22%), shelduck (2.51%), teal (37.17%) and wigeon (3.20%) Small numbers of avocet, golden plover, great crested grebe, grey plover, knot, pintail and ringed plover were recorded occasionally within the Survey Area.

4.2.7 Between July and September 2024, the number of black-tailed godwit peaked with non-breeding and passage birds, which is equivalent to 7.3% of the total wintering population of the UK (Ref 17).

4.2.8 The surrounding saltmarsh and mudflats including the Water Connection Corridor are used by large numbers of foraging waders and waterfowl. At low tide, there is a huge area of potential foraging habitat for birds to utilise throughout the estuary and so the distribution varies between surveys. Generally, as greater areas of mudflat are exposed, birds are more widely spread and at greater distance from the Order limits.

4.2.9 Connah's Quay Nature Reserve regularly supports notable numbers of waders and waterfowl for foraging and roosting. Larger numbers of both seem to be present at higher tide states when alternative foraging/roosting areas are unavailable, but this area also appears to be well used by wigeon and teal during the winter, and redshank, spotted redshank and greenshank particularly during the autumn.

4.2.10 No species that are qualifying features of the Dee Estuary SPA/ Ramsar site and Mersey Estuary SPA/ Ramsar site were recorded within the Proposed CO₂ Connection Corridor.

Breeding Bird Surveys

4.2.11 A summary of the bird species recorded and their breeding status is provided in **Table 7** and the following paragraphs. The breeding bird territories are indicated on **Figure 11-D6** in **Annex A**.

4.2.12 The most abundant breeding species across the Survey Area were woodpigeon, blue tit, chiffchaff, blackcap, wren, blackbird, robin, dunnock and chaffinch. These species are common and are associated with hedgerows and woodland at the Site.

4.2.13

4.2.14

- 4.2.15 No barn owl (a protected species listed on Schedule 1 of the Wildlife and Countryside Act 1981 [as amended]) nest sites were recorded within the Survey Area.
- 4.2.16 The wetland habitats within Compartment 1 of the Connah's Quay Nature Reserve also supported several other species during the breeding season including gadwall, tufted duck, coot, moorhen, little grebe, reed warbler and reed bunting (a Section 7 species). These species are common and are associated with ponds and marginal common reed vegetation.
- 4.2.17 The hedgerows in the central part of the Main Development Area supported a range of common species including lesser whitethroat, whitethroat, bullfinch (a Section 7 species) and linnet.
- 4.2.18 The wetland habitats within Compartment 2 of the Connah's Quay Nature Reserve (north-east of the Order limits) supported a breeding pair of oystercatchers. Other common species included little egret and grey heron which were regularly recorded foraging within the pools of Compartment 2.
- 4.2.19 The scattered trees and scrub to the south-east of the Main Development Area also supported additional common breeding birds, such as, whitethroat, greenfinch and goldfinch.

Table 7: Breeding status, number of territories and conservation status of birds recorded within the Survey Area

Species	Conservation status (where applicable)*	Breeding status	territory	Number of territories of breeding species (where applicable)	Supporting Notes
Blackbird	BoCCW Green	Confirmed	4		
Blackcap	BoCCW Green	Confirmed	4		
Black-headed gull	S7, BoCCW Red	Confirmed	1		
Black-tailed godwit	Sch. 1, BoCC Red	Non-breeding			
Blue tit	BoCCW Green	Probable	(5)		
Bullfinch	S7, BoCCW Amber	Probable	(2)		
Buzzard	BoCCW Green	Non-breeding			
Canada goose	-	Non-breeding			
Carrion crow	BoCCW Green	Non-breeding			
Chaffinch	BoCCW Amber	Probable	(2)		
Chiffchaff	BoCCW Green	Confirmed	7		
Coot	BoCCW Amber	Probable	(1)		
Cormorant	BoCCW Green	Non-breeding			
Curlew	S7, BoCCW Red	Non-breeding			
Dunnock	BoCCW Amber	Possible	(6)		
Gadwall	BoCC Amber	Possible	(2)		
Garganey	BoCCW Amber	Non-breeding			

Species	Conservation status (where applicable)*	Breeding status	territory	Number of territories of breeding species (where applicable)	Supporting Notes
Goldcrest	BoCCW Red	Possible	(2)		
Goldfinch	BoCCW Green	Probable	(4)		
Great tit	BoCCW Green	Confirmed	1		
Greenfinch	BoCCW Red	Probable	(5)		
Greenshank	BoCCW Green	Non-breeding			
Grey heron	BoCCW Amber	Non-breeding			
House sparrow	S7, BoCCW Amber	Possible	(3)		
Jay	BoCCW Green	Possible	(1)		
Lapwing	BoCCW Red	Non-breeding			
Lesser black-backed gull	BoCCW Amber	Confirmed	3		Existing Connah's Quay Power Station
Lesser whitethroat	BoCCW Green	Possible	(2)		
Little egret	BoCCW Green	Non-breeding			
Little grebe	BoCCW Green	Probable	(1)		
Linnet	S7, BoCCW Red	Probable	(2)		
Long-tailed tit	BoCCW Green	Confirmed	1		
Magpie	BoCCW Amber	Non-breeding			
Mallard	BoCC Amber	Non-breeding			
Marsh harrier	BoCCW Amber	Non-breeding			

Species	Conservation status (where applicable)*	Breeding status	territory	Number of territories of breeding species (where applicable)	Supporting Notes
Meadow pipit	BoCCW Red	Probable	(1)		
Mute swan	BoCCW Green	Non-breeding			
Oystercatcher	BoCCW Amber	Confirmed	1		
Pheasant	-	Non-breeding			
Redshank	BoCCW Red	Non-breeding			
Reed bunting	S7, BoCC Amber	Possible	(1)		
Raven	BoCCW Green	Possible	(1)		Existing Connah's Quay Power Station
Reed warbler	BoCCW Green	Possible	(1)		
Robin	BoCCW Green	Confirmed	3		
Sedge warbler	BoCCW Green	Probable	(1)		
Shelduck	BoCCW Red	Possible	(3)		
Skylark	S7, BoCC Red	Possible	(1)		
Song thrush	S7, BoCC Amber	Possible	(2)		
Tufted duck	BoCCW Green	Possible	(1)		
Whitethroat	BoCCW Red	Probable	(4)		
Wigeon	BoCCW Amber	Non-breeding			

Species	Conservation status (where applicable)*	Breeding status	territory	Number of territories of breeding species (where applicable)	Supporting Notes
Willow warbler	BoCCW Red	Possible	(2)		
Woodpigeon	BoCC Amber	Confirmed	1		
Wren	BoCC Amber	Confirmed	3		
Total number of species	56				
Breeding assemblage	37				

*Where BoCC and BoCCW hold different conservation statuses for a species, whichever is higher is included.

5. Summary

5.1 Summary of Key Locations for Birds

5.1.1 Irrespective of the presence of any designated sites, the entirety of the Dee Estuary can be considered to support significant populations of non-breeding birds. The baseline data presented in this report have identified some locations or broad areas that are of particular importance to wetland birds. This is due to their reliance on them by birds either during potentially adverse tide and/or weather conditions, or on a regular basis irrespective of the conditions.

5.2 Identification of Ornithological Features

5.2.1 The following sections provide a summary of the key locations that support birds identified within the Study and Survey Areas. **Table 8** draws upon the baseline presented in this report to identify a list of ornithological features with the potential to be impacted either adversely or beneficially by the Proposed Development.

5.2.2 For brevity, the table excludes all designated sites from **Table 3**, all of which will be taken forward for assessment.

5.2.3 Features can be designated sites, assemblages of species or individual species. A method for valuing each is provided in **Section 5.3**. All relevant species and species assemblages are included. Species that are qualifying features of a designated site are considered separately from the designations only where there is merit in doing so.

5.3 Valuation of Ornithological Features

5.3.1 The following frames of reference used herein are based on guidance published by the Chartered Institute of Ecology and Environmental management (CIEEM; Ref 19) in accordance with **Appendix 11-A: EcIA Methodology (EN010166/APP/6.4)**:

- International (generally this is within a European context, reflecting the general availability of good data to allow cross-comparison);
- National (Great Britain, but considering the potential for certain ecological features to be more notable (of higher value) in a Wales context relative to Great Britain as a whole);
- Regional (North Wales);
- County (Flintshire);
- District (Deeside);
- Local (ecological features that do not meet criteria for valuation at a District or higher level, but that have sufficient value to merit retention or mitigation); and

- negligible (common and widespread ecological features of such low priority that they do not require retention or mitigation at the relevant location to otherwise maintain a favourable nature conservation status).

5.3.2 For designated sites, the appropriate value is implicit in the type of designation and/ or the legislation under which it is designated, i.e., sites designated under international legislation or the domestic equivalent include Ramsar site and SPA and are valued accordingly; sites under national legislation and/or importance nationally include SSSI and National Nature Reserve (NNR); sites designated as Local Nature Reserve (LNR) or LWS are generally of importance at the county scale unless there is a clear rationale for upgrading or downgrading their valuation on a site by site basis, such as their playing a critical supporting role to the function and integrity of a nationally or internationally designated site.

5.3.3 Values have been assigned to relevant species features occurring within the Study Area based on the geographical scale at which that population is important. In doing so, consideration has been given to the perceived importance, rarity, or vulnerability of the species with reference to:

- inclusion as Priority Species on the UK BoCC Red/Amber Lists of Conservation Concern (Welsh Section 7 species and BoCC Wales Red/Amber Lists of Conservation Concern);
- inclusion as a notified feature of a designated site, where there is a clearly defined rationale for assessing these species separately from the relevant site itself;
- breeding species monitored by the Rare Breeding Birds Panel (RBBP) (Ref 20); and,
- inclusion in the North-East Wales Bird Report 2022 (Ref 13) with species abundance indicated for Flintshire.

5.3.4 For the purposes of this report, and the assessments in **Chapter 11: Terrestrial and Aquatic Ecology (EN010166/APP/6.2.11)**, District level or greater is defined as any species that is identified in the county avifauna as "Rare", "Scarce", or "Fairly Scarce". Additionally, breeding species monitored by the RBBP that are listed as "Less Scarce", "Scarce" or "Rare" are assigned a value or "County" or higher.

5.3.5 Assemblages of species that are qualifying features of the Dee Estuary SPA and Ramsar site and Mersey Estuary SPA and Ramsar site, that occur within land that is functionally linked to the sites, are also valued separately; this is because qualifying features of designated sites, and by default land that is functionally linked to a designated site, are not necessarily of International "value" in their own right, but they qualify on the basis that the designated site supports internationally important numbers of that species; indeed, even common and widespread species can be listed as qualifying features on this basis.

5.3.6 Species assemblages supporting species that are not qualifying features of designated sites are valued as individual ornithological features using professional judgement and the criteria summarised above to determine value based on the "typicalness" of the assemblage in the context of the location and habitats present.

Table 8: Relevant Ornithological Features⁵

Feature	Description of Feature Key Locations	Principal Data Source(s)	Value	Rationale for Valuation	Proximity to the Order limits
The Dee Estuary SPA / Ramsar site qualifying species					
Common tern (breeding)	Recorded in small numbers during the summer foraging over the Dee Estuary. There is a common tern breeding colony 485 m north-east of the Order limits at Shotton Lagoons and Reedbeds SSSI.	Desk study Field survey	District	Common breeding summer visitor in Flintshire (Ref 13).	Overlapping
Bar-tailed godwit (non-breeding)	Regularly recorded in small numbers foraging on the mudflats north of the Order limits. Peak count was observed in January.	Desk study Field survey	District	Uncommon passage migrant and winter visitor in Flintshire (Ref 13).	120 m
Pintail (non-breeding)	Small numbers use the Order limits infrequently, with greater numbers at low tide on the Dee Estuary. Peak count was observed in March.	Desk study Field survey	District	Although an abundant winter visitor in Flintshire (Ref 13) it is a SPA qualifying species that is relevant to the assessment and hence slightly elevated value.	Overlapping
Teal (non-breeding)	Regularly with considerably larger numbers present at low tide. Regularly recorded at high tide within the Water	Desk study Field survey	Local	An abundant winter visitor in Flintshire (Ref 13).	Overlapping

⁵ Multiple locations and/or multiple years of occurrence are available for some species, in which case the distance is measured to the closest known or recorded occupied location. Breeding locations used are those where breeding was confirmed where possible. Approximate distances are provided for receptors represented only by third party records that do not confirm precise locations.

Feature	Description of Feature Key Locations	Principal Data Source(s)	Value	Rationale for Valuation	Proximity to the Order limits
	Connection Corridor. Small numbers occasionally recorded on the Main Development Area fields. Peak count was observed in December.				
Dunlin (non-breeding)	Use the mud flats north of the Order limits in varying numbers over winter, with greater numbers observed at high tide. Small numbers occasionally recorded on the Main Development Area fields. Peak count observed in December.	Desk study Field survey	Local	An abundant winter visitor and passage migrant in Flintshire (Ref 13).	Overlapping
Knot (non-breeding)	Recorded in small numbers foraging on the mudflats north of the Order limits occasionally during diurnal surveys only, with greater numbers present at low tide. Peak count observed in March.	Desk study Field survey	Local	An abundant winter visitor in Flintshire (Ref 13).	120 m
Oystercatcher (non-breeding)	Regularly recorded on fields at the Main Development Area in small numbers, and in large numbers only in sector 69426. Peak count observed in July.	Desk study Field survey	Local	An abundant winter visitor in Flintshire (Ref 13).	Overlapping
Black-tailed godwit (non-breeding)	Large population (greater than the cited SPA population) consistently foraging on the mudflats north of the site and occasionally roosting on Connah's Quay Nature Reserve during the late summer, peaking in September	Desk study Field study	Regional	An abundant passage migrant and winter visitor in Flintshire (Ref 13).	120 m

Feature	Description of Feature Key Locations	Principal Data Source(s)	Value	Rationale for Valuation	Proximity to the Order limits
Curlew (non-breeding)	Present throughout the year, particularly October to April with peak counts recorded in December on the Main Development Area fields.	Desk study Field survey	District	A common winter visitor in Flintshire (Ref 13).	Overlapping
Grey plover (non-breeding)	Only recorded on the mudflats north of the Order limits as single individuals in winter.	Desk study Field survey	District	An uncommon winter visitor in Flintshire (Ref 13).	120 m
Shelduck (non-breeding)	Recorded regularly throughout the year, with numbers peaking in June. Numbers were greater at high tide.	Desk study Field survey	Local	A very common year-round visitor in Flintshire (Ref 13).	Overlapping
Redshank (non-breeding)	Recorded in large numbers throughout the year. Regularly forages and roosts within Connah's Quay Nature Reserve Compartment 2. Small numbers occasionally recorded on the Main Development Area fields. Numbers peaking in July.	Desk study Field survey	District	An abundant passage migrant and fairly common winter visitor in Flintshire (Ref 13).	Overlapping

Mersey Estuary SPA/ Ramsar site qualifying species not already named above

Golden plover (non-breeding)	Recorded only on the Dee Estuary north of the Order limits in December at low tide in low numbers.	Desk study Field survey	District	An uncommon winter visitor in Flintshire (Ref 13).	120 m
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Feature	Description of Feature Key Locations	Principal Data Source(s)	Value	Rationale for Valuation	Proximity to the Order limits
Wigeon (non-breeding)	Recorded in large numbers over winter, peaking in November and December, with individuals observed over summer months. Regularly recorded at high tide within the Water Connection Corridor.	Desk study Field survey	Local	An abundant winter visitor in Flintshire (Ref 13).	Overlapping
Great crested grebe (non-breeding)	Recorded in small numbers in the Dee Estuary in September.	Desk study Field survey	Local	A common winter visitor in Flintshire (Ref 13).	250 m
Lapwing (non-breeding)	Recorded consistently during winter, returning in lower numbers from August. Peak count recorded in December at low tide. Recorded roosting at night on the Main Development Area fields.	Desk study Field survey	Local	An abundant winter visitor in Flintshire (Ref 13).	Overlapping
Ringed plover (non-breeding)	Recorded in small numbers on mudflats north of the Order limits in August 2024.	Desk study	District	A fairly common passage migrant and winter visitor in Flintshire (Ref 13).	120 m

Dee Estuary SSSI species (additional to those listed under SPA / Ramsar site qualifying features)

Cormorant (non-breeding)	Recorded throughout the year foraging in the Dee Estuary, with numbers peaking in January. Regularly recorded roosting within the Water Connection Corridor.	Desk study Field survey	Local	A common resident in Flintshire (Ref 13).	Overlapping
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Regularly occurring species and assemblages (local or higher value only, excluding species that are reasons for designation of the above designated sites)

Feature	Description of Feature Key Locations	Principal Data Source(s)	Value	Rationale for Valuation	Proximity to the Order limits
Spotted redshank (non-breeding)	Regularly forages and roosts within Connah's Quay Nature Reserve Compartment 2, with peak counts recorded in October.	Desk study Field survey	County	An uncommon winter visitor in Flintshire (Ref 13).	30 m
Greenshank (non-breeding)	Regularly forages and roosts within Connah's Quay Nature Reserve Compartment 2, with peak counts recorded in October.	Desk study Field survey	District	A regular passage migrant and winter visitor in Flintshire (Ref 13).	30 m
Breeding bird assemblage	Breeding and foraging in scrub, grassland and hedgerows.	Field survey	District	56 breeding species including: 14 Red List, 16 Amber List, and 8 S7 species.	Overlapping

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Annex A: Figures

Figure 11-D1 Desk study area and designated sites map

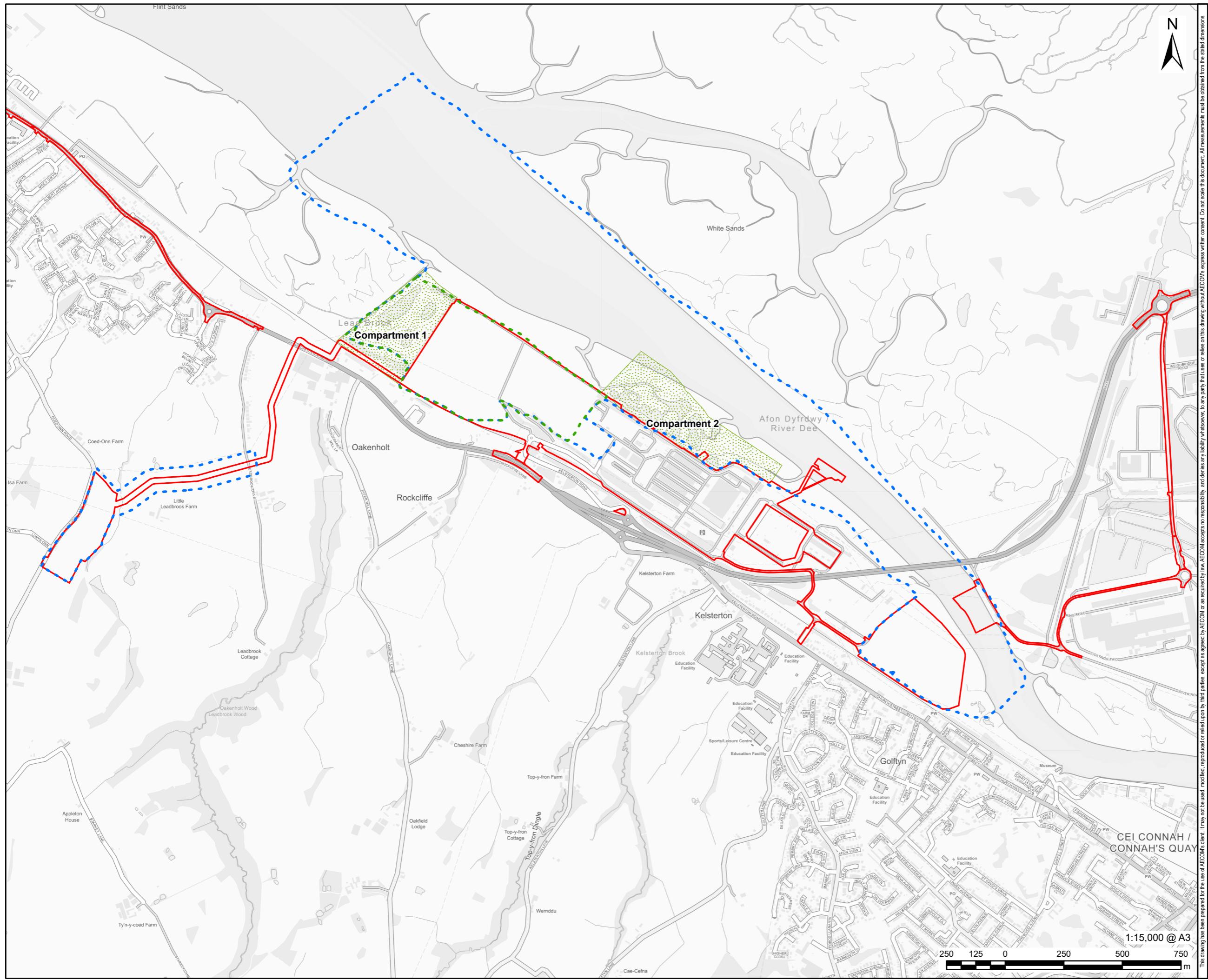
Figure 11-D2 Diurnal and nocturnal survey areas map

Figure 11-D3 WeBS low tide count sectors map

Figure 11-D4 WeBS core (high tide) count sectors map

Figure 11-D5 Important wetland bird species key locations map

Figure 11-D6 Breeding bird territory map



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LEGEND

- Order limits
- Diurnal Bird Survey Area
- Nocturnal Bird Survey Area
- Indicative Connah's Quay Nature Reserve Compartment

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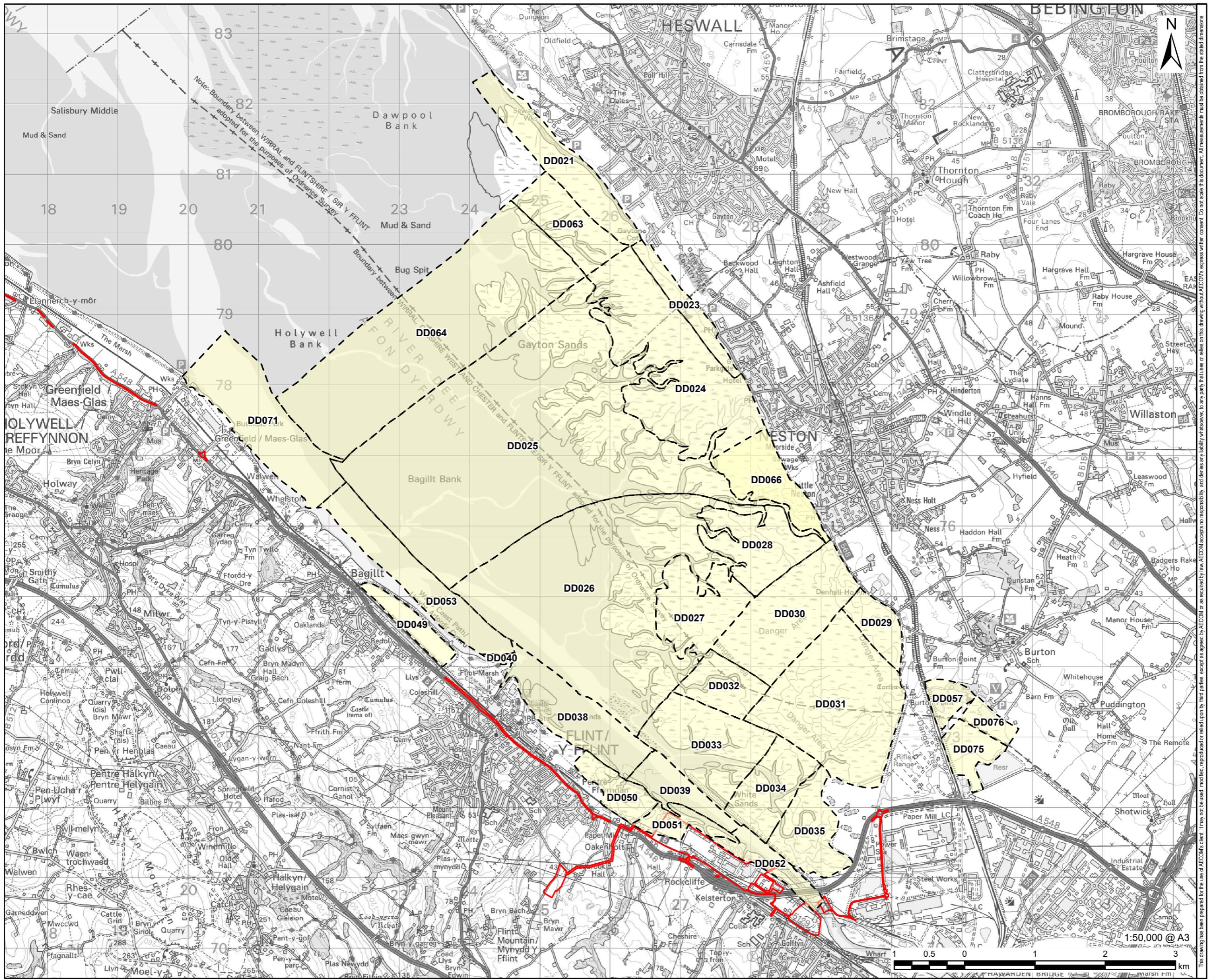
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FIGURE TITLE

Ornithological Survey Area

FIGURE NUMBER

Figure 11D.2



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Order limits
Wetland Birds Low Tide Count Sector

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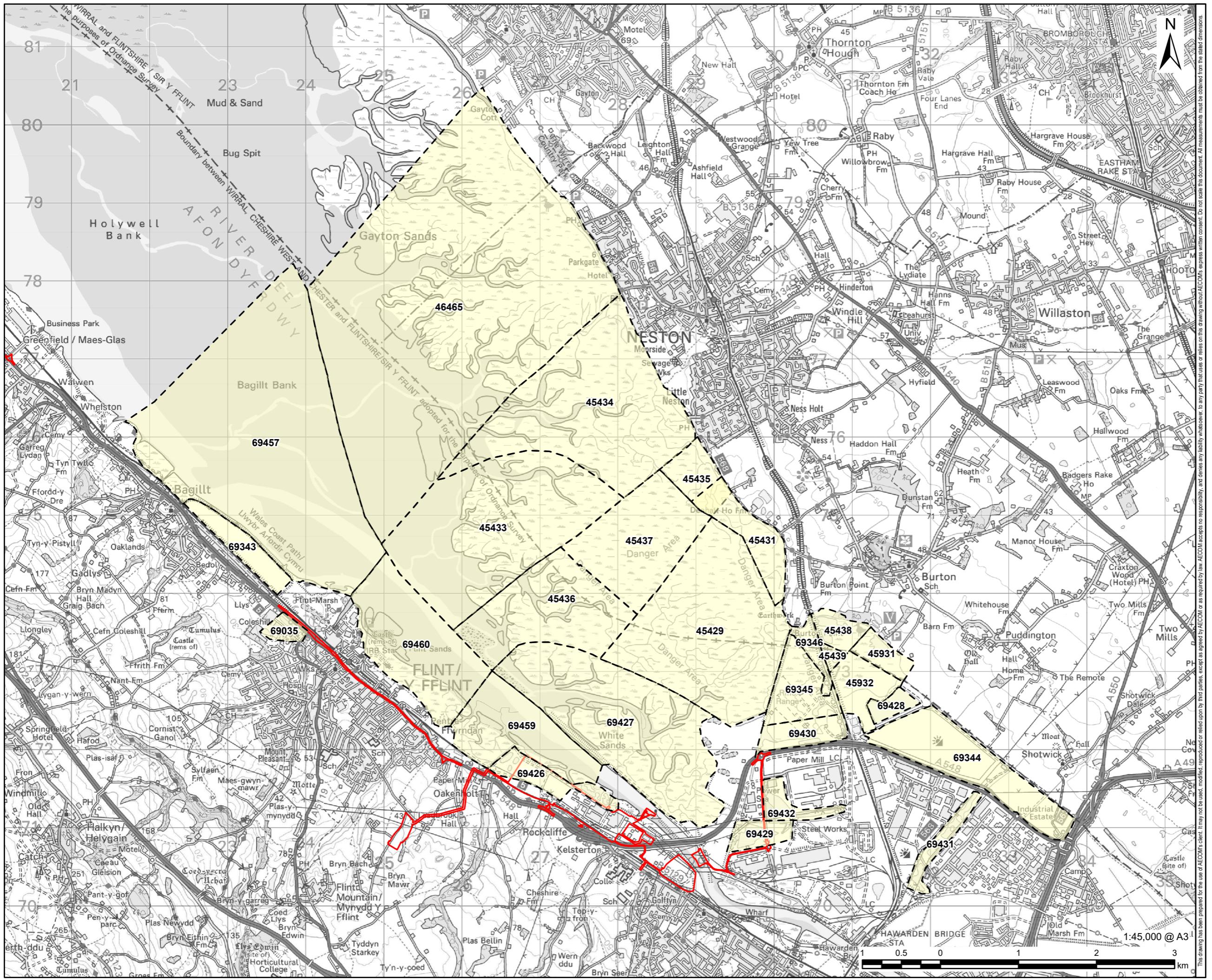
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FIGURE TITLE
Wetland Birds Low Tide Count Sectors

FIGURE NUMBER
Figure 11D-3

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LEGEND

- Order limits
- Wetland Birds Core (High Tide) Count Sector

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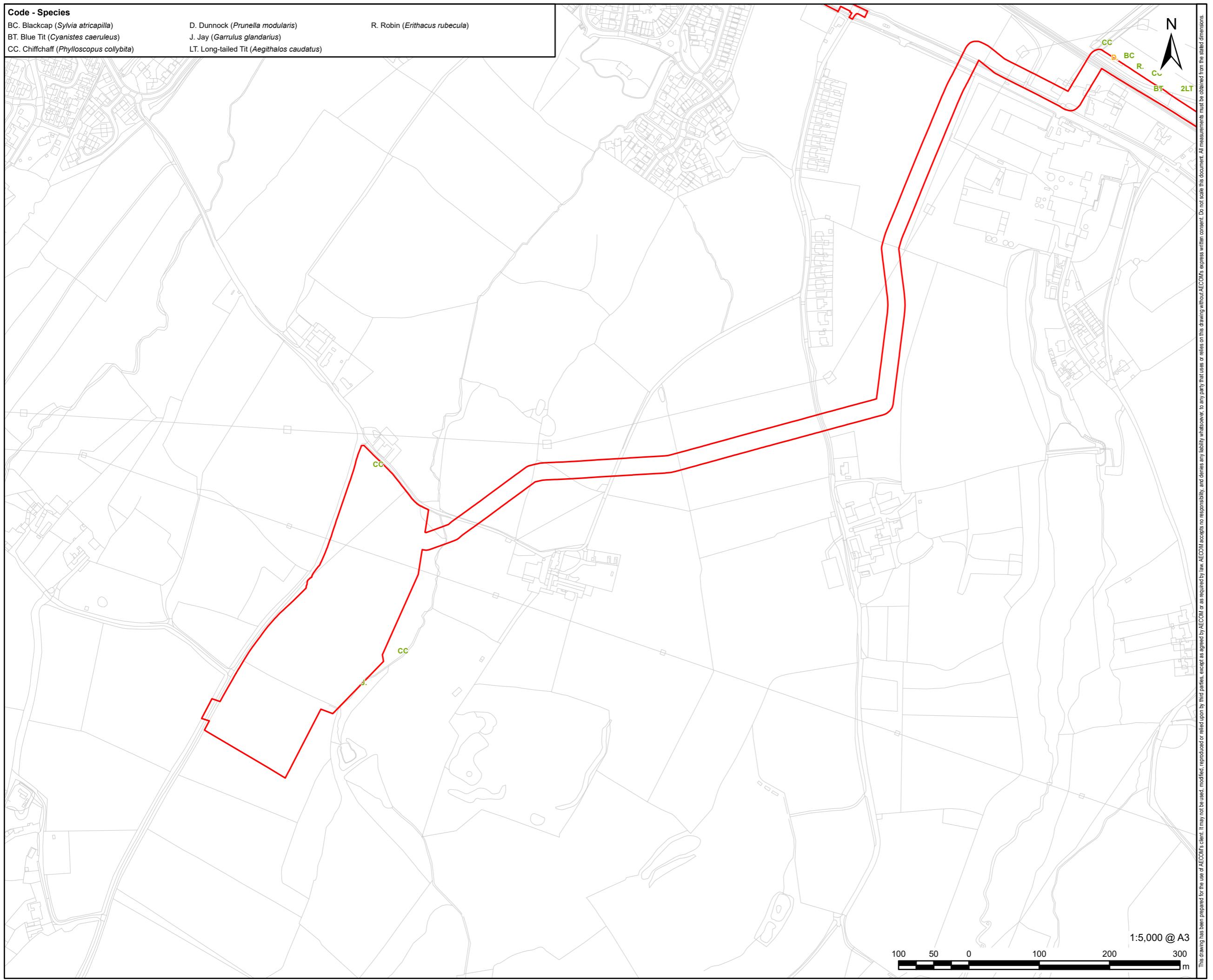
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FIGURE TITLE

Wetland Birds Core (High Tide) Count
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Figure 11D-4



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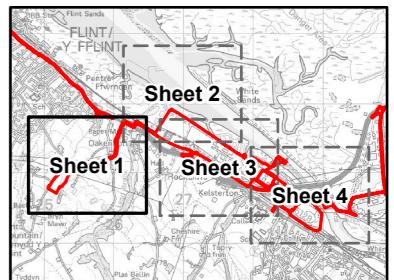
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LEGEND

Order limits



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FIGURE TITLE

Breeding Bird Survey Results
March - 2024, Sheet 1 of 4
Sheet 1 of 20

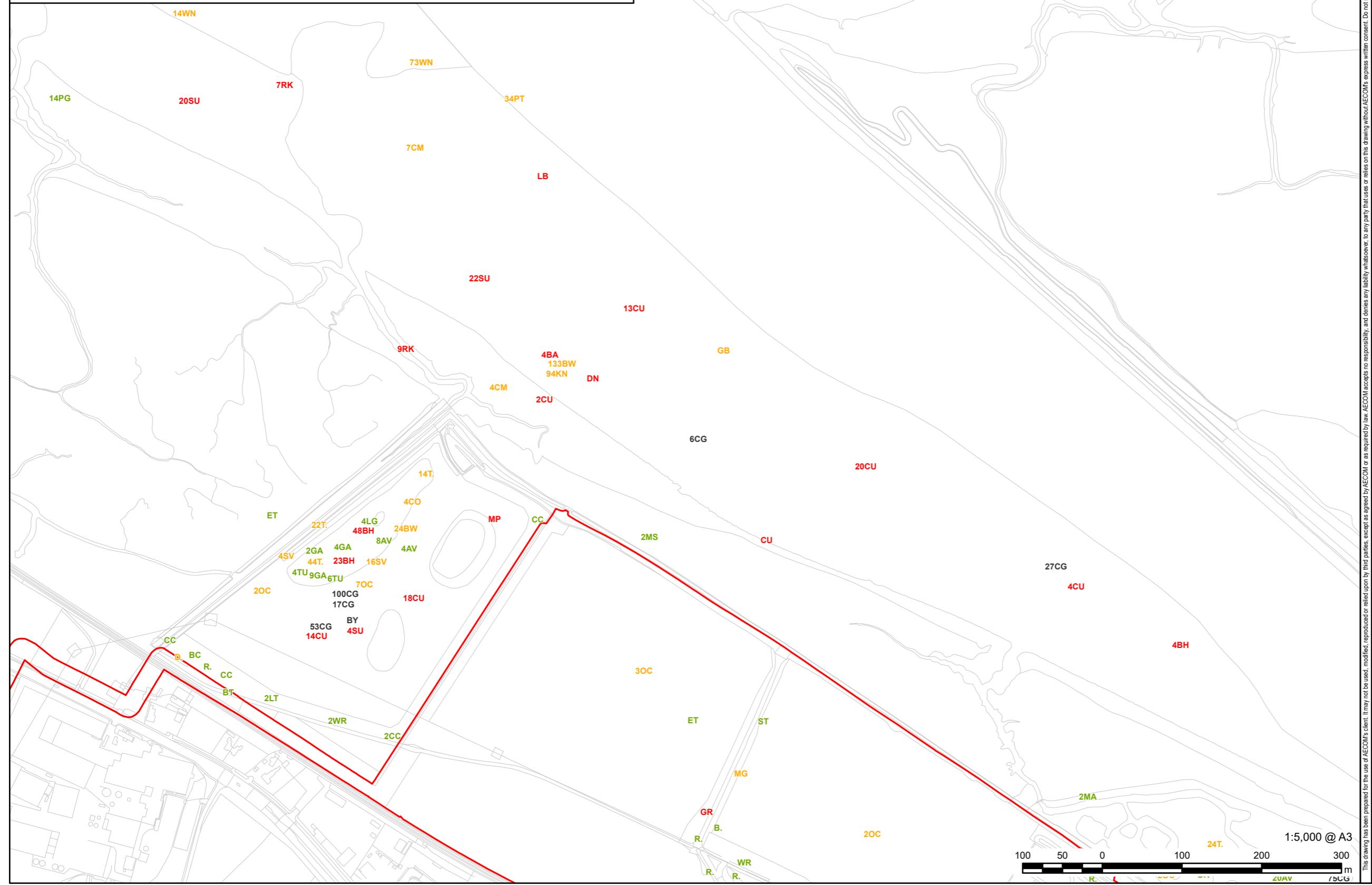
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Figure 11D-6

Code - Species

AV. Avocet (*Recurvirostra avosetta*)
 B. Blackbird (*Turdus merula*)
 BA. Bar-tailed Godwit (*Limosa lapponica*)
 BC. Blackcap (*Sylvia atricapilla*)
 BH. Black-headed Gull (*Chroicocephalus ridibundus*)
 BT. Blue Tit (*Cyanistes caeruleus*)
 BW. Black-tailed Godwit (*Limosa limosa*)
 BY. Barnacle Goose (*Branta leucopsis*)
 CC. Chiffchaff (*Phylloscopus collybita*)
 CG. Canada Goose (*Branta canadensis*)
 CH. Chaffinch (*Fringilla coelebs*)
 CM. Common Gull (*Larus canus*)
 CO. Coot (*Fulica atra*)
 CS. Common Sandpiper (*Actitis hypoleucos*)

- MS. Mute Swan (*Cygnus olor*)
- OC. Oystercatcher (*Haematopus ostralegus*)
- PG. Pink-footed Goose (*Anser brachyrhynchus*)
- PT. Pintail (*Anas acuta*)
- R. Robin (*Erithacus rubecula*)
- RK. Redshank (*Tringa totanus*)
- ST. Song Thrush (*Turdus philomelos*)
- SU. Shelduck (*Tadorna tadorna*)
- SV. Shoveler (*Spatula clypeata*)
- T. Teal (*Anas crecca*)
- TU. Tufted Duck (*Aythya fuligula*)
- WN. Wigeon (*Mareca penelope*)
- WR. Wren (*Troglodytes troglodytes*)
- WS. Whooper Swan (*Cygnus cygnus*)



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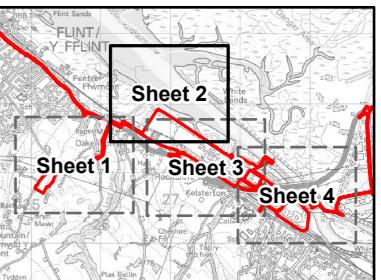
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LEGEND

Order limits



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FIGURE TITLE

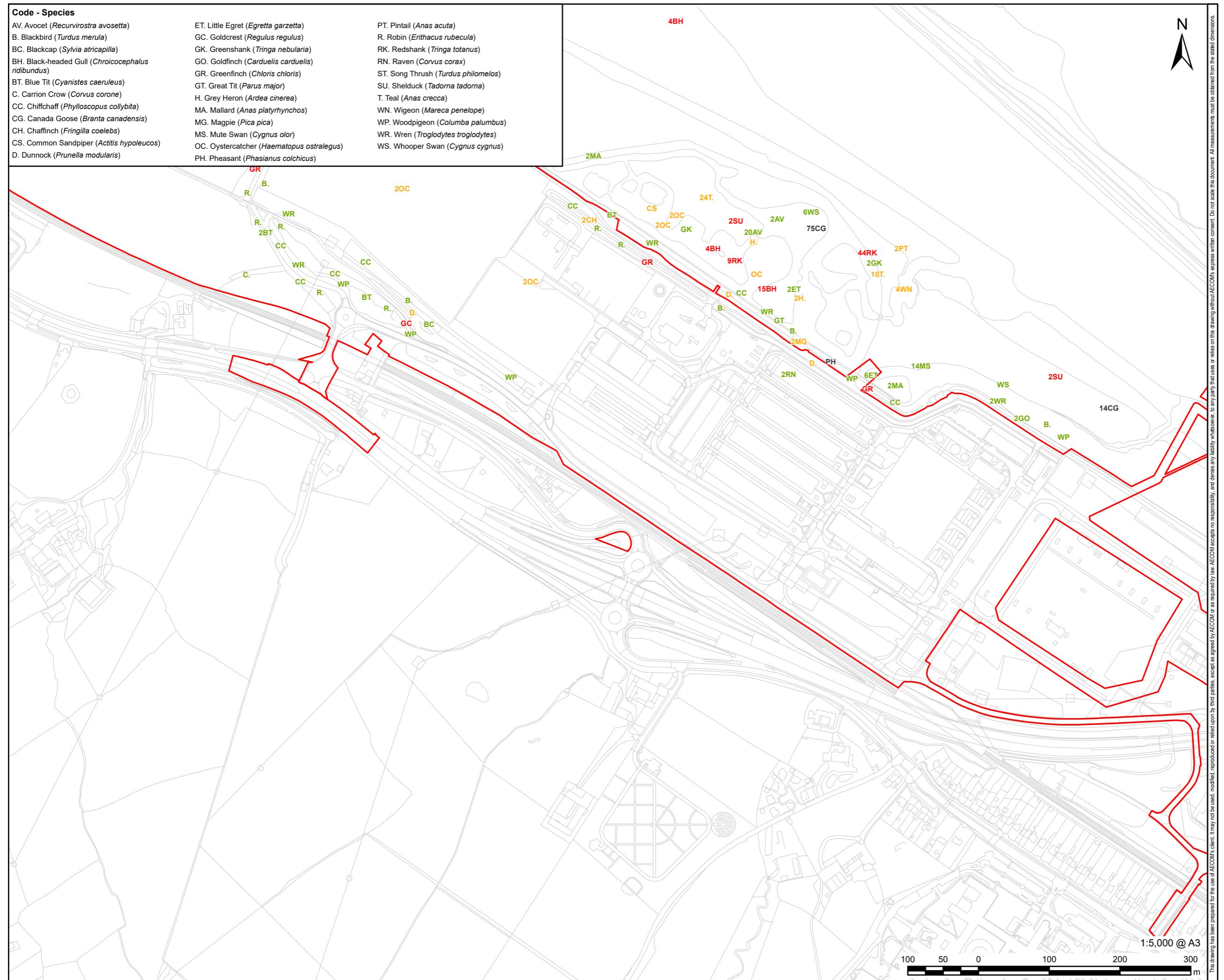
Breeding Bird Survey Results

March - 2024, Sheet 2 of 4

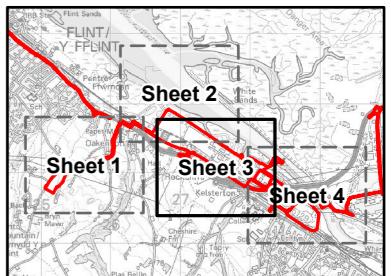
Sheet 2 of 20

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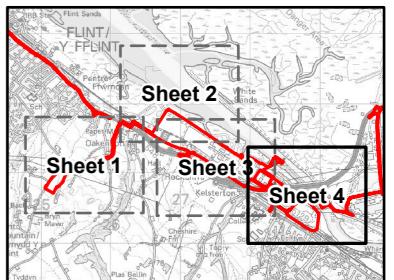
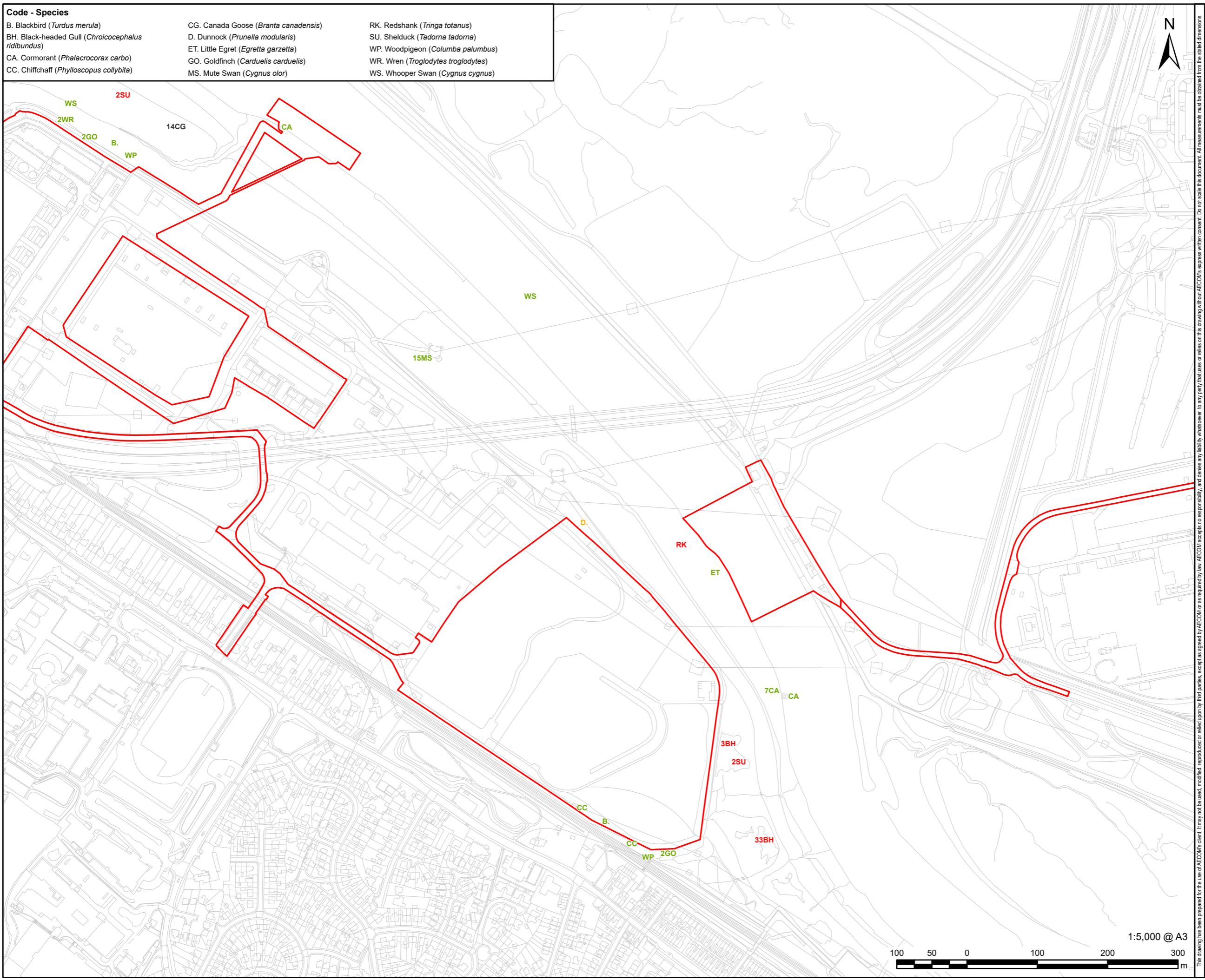
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FIGURE TITLES

Breeding Bird Survey Results
March - 2024, Sheet 3 of 4
Sheet 3 of 20

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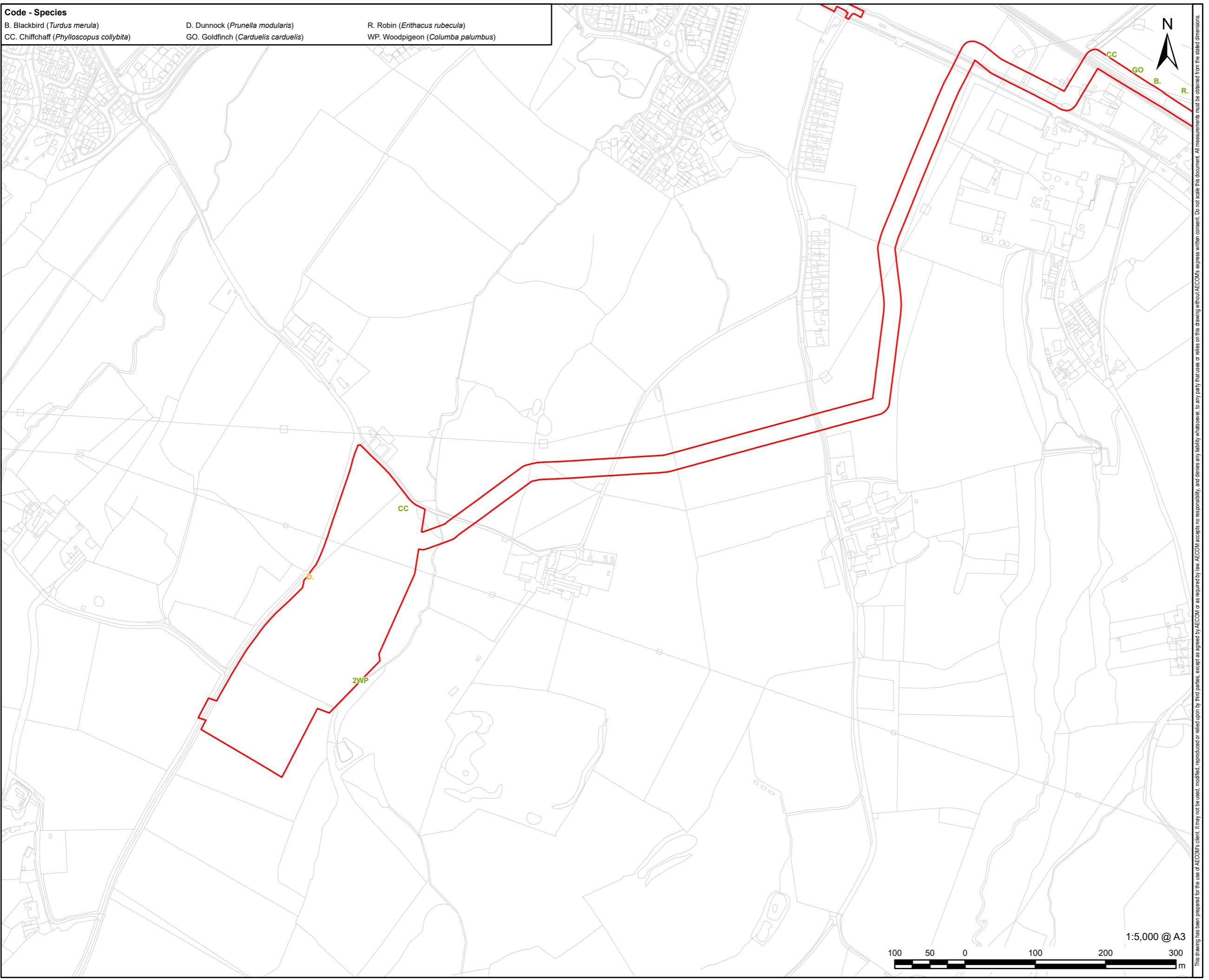
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FIGURE TITLE

Breeding Bird Survey Results
 March - 2024, Sheet 4 of 4
 Sheet 4 of 20

FIGURE NUMBER

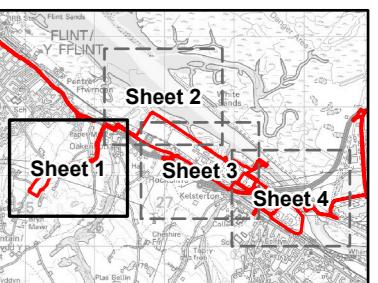
Figure 11D-6

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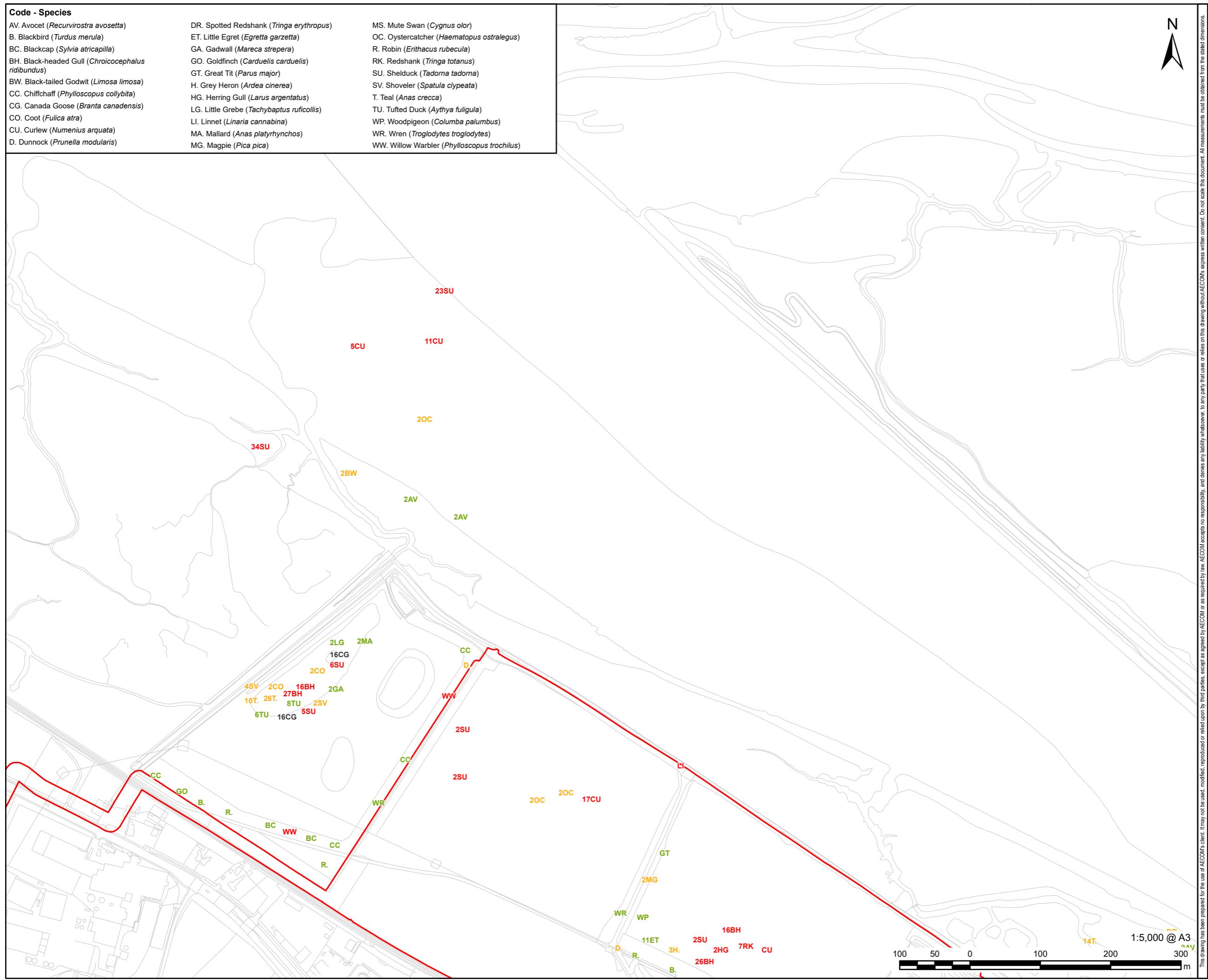
FIGURE TITLE

Breeding Bird Survey Results
 April - 2024, Sheet 1 of 4
 Sheet 5 of 20

FIGURE NUMBER

Figure 11D-6

Code - Species		
AV. Avocet (<i>Recurvirostra avosetta</i>)	DR. Spotted Redshank (<i>Tringa erythropus</i>)	MS. Mute Swan (<i>Cygnus olor</i>)
B. Blackbird (<i>Turdus merula</i>)	ET. Little Egret (<i>Egretta garzetta</i>)	OC. Oystercatcher (<i>Haematopus ostralegus</i>)
BC. Blackcap (<i>Sylvia atricapilla</i>)	GA. Gadwall (<i>Mareca strepera</i>)	R. Robin (<i>Erithacus rubecula</i>)
BH. Black-headed Gull (<i>Chroicocephalus ridibundus</i>)	GO. Goldfinch (<i>Carduelis carduelis</i>)	RK. Redshank (<i>Tringa totanus</i>)
BW. Black-tailed Godwit (<i>Limosa limosa</i>)	GT. Great Tit (<i>Parus major</i>)	SU. Shelduck (<i>Tadorna tadorna</i>)
CC. Chiffchaff (<i>Phylloscopus collybita</i>)	H. Grey Heron (<i>Ardea cinerea</i>)	SV. Shoveler (<i>Spatula clypeata</i>)
CG. Canada Goose (<i>Branta canadensis</i>)	HG. Herring Gull (<i>Larus argentatus</i>)	T. Teal (<i>Anas crecca</i>)
CO. Coot (<i>Fulica atra</i>)	LG. Little Grebe (<i>Tachybaptus ruficollis</i>)	TU. Tufted Duck (<i>Aythya fuligula</i>)
CU. Curlew (<i>Numenius arquata</i>)	LI. Linnet (<i>Linaria cannabina</i>)	WP. Woodpigeon (<i>Columba palumbus</i>)
D. Dunnock (<i>Prunella modularis</i>)	MA. Mallard (<i>Anas platyrhynchos</i>)	WR. Wren (<i>Troglodytes troglodytes</i>)
	MG. Magpie (<i>Pica pica</i>)	WW. Willow Warbler (<i>Phylloscopus trochilus</i>)



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July 2025

PROJECT NUMBER

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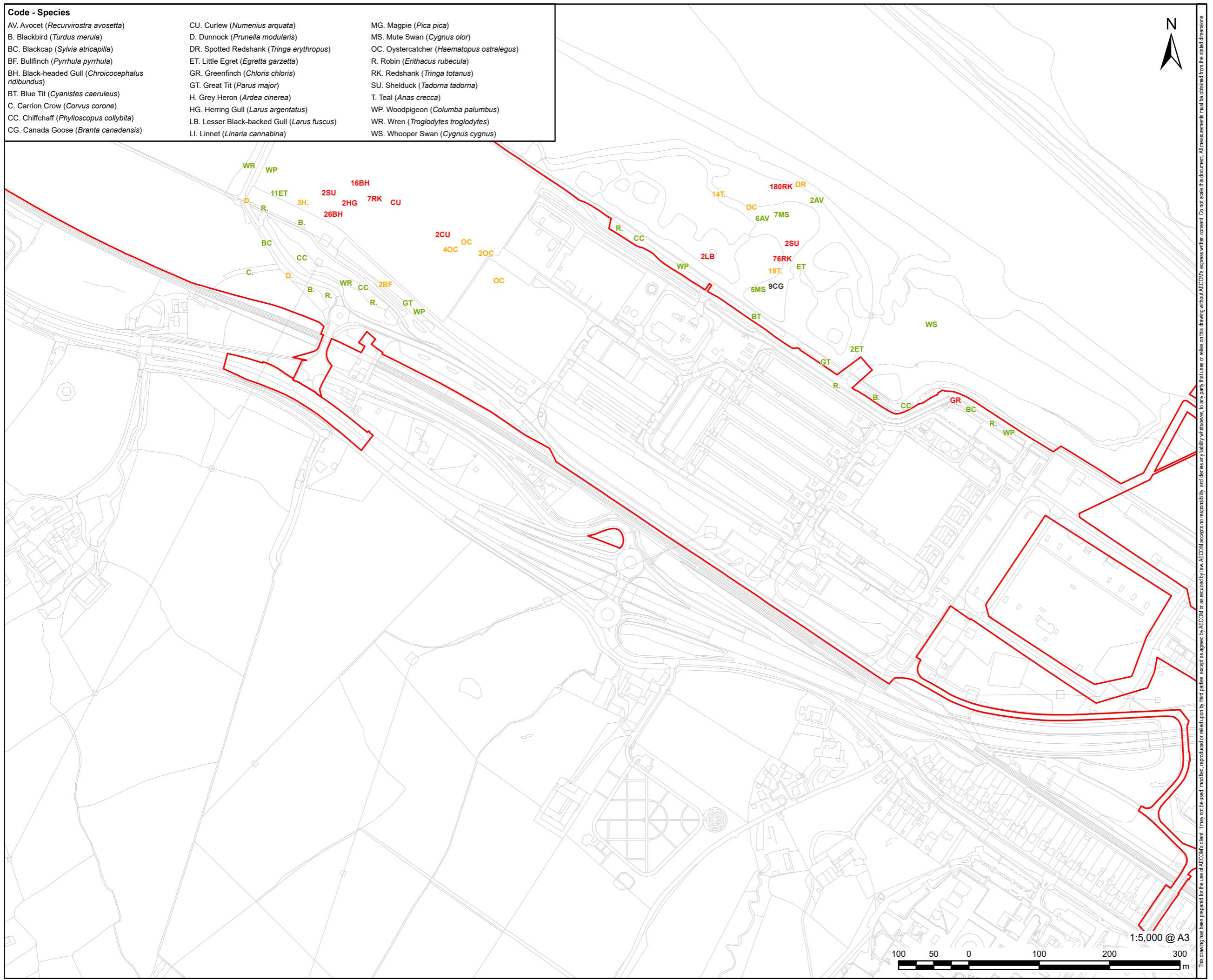
FIGURE TITLE

Breeding Bird Survey Results
April - 2024, Sheet 2 of 4
Sheet 6 of 20

FIGURE NUMBER

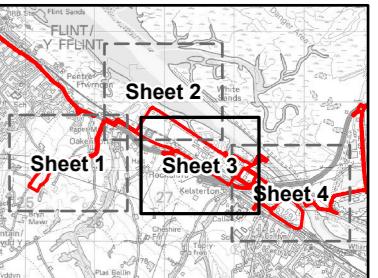
Figure 11D-6

Code - Species	
AV. Avocet (<i>Recurvirostra avosetta</i>)	CU. Curlew (<i>Numenius arquata</i>)
B. Blackbird (<i>Turdus merula</i>)	D. Dunnock (<i>Prunella modularis</i>)
BC. Blackcap (<i>Sylvia atricapilla</i>)	DR. Spotted Redshank (<i>Tringa erythropus</i>)
BF. Bullfinch (<i>Pyrrhula pyrrhula</i>)	ET. Little Egret (<i>Egretta garzetta</i>)
BH. Black-headed Gull (<i>Chroicocephalus ridibundus</i>)	GR. Greenfinch (<i>Chloris chloris</i>)
BT. Blue Tit (<i>Cyanistes caeruleus</i>)	GT. Great Tit (<i>Parus major</i>)
C. Carrion Crow (<i>Corvus corone</i>)	H. Grey Heron (<i>Ardea cinerea</i>)
CC. Chiffchaff (<i>Phylloscopus collybita</i>)	HG. Herring Gull (<i>Larus argentatus</i>)
CG. Canada Goose (<i>Branta canadensis</i>)	LB. Lesser Black-backed Gull (<i>Larus fuscus</i>)
	LI. Linnet (<i>Linaria cannabina</i>)
	MG. Magpie (<i>Pica pica</i>)
	MS. Mute Swan (<i>Cygnus olor</i>)
	OC. Oystercatcher (<i>Haematopus ostralegus</i>)
	R. Robin (<i>Erithacus rubecula</i>)
	RK. Redshank (<i>Tringa totanus</i>)
	SU. Shelduck (<i>Tadorna tadorna</i>)
	T. Teal (<i>Anas crecca</i>)
	WP. Woodpigeon (<i>Columba palumbus</i>)
	WR. Wren (<i>Troglodytes troglodytes</i>)
	WS. Whooper Swan (<i>Cygnus cygnus</i>)



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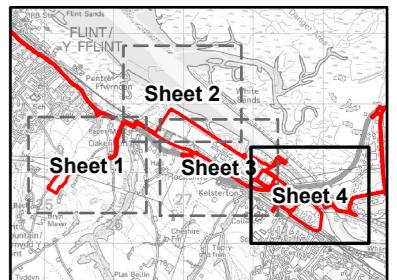
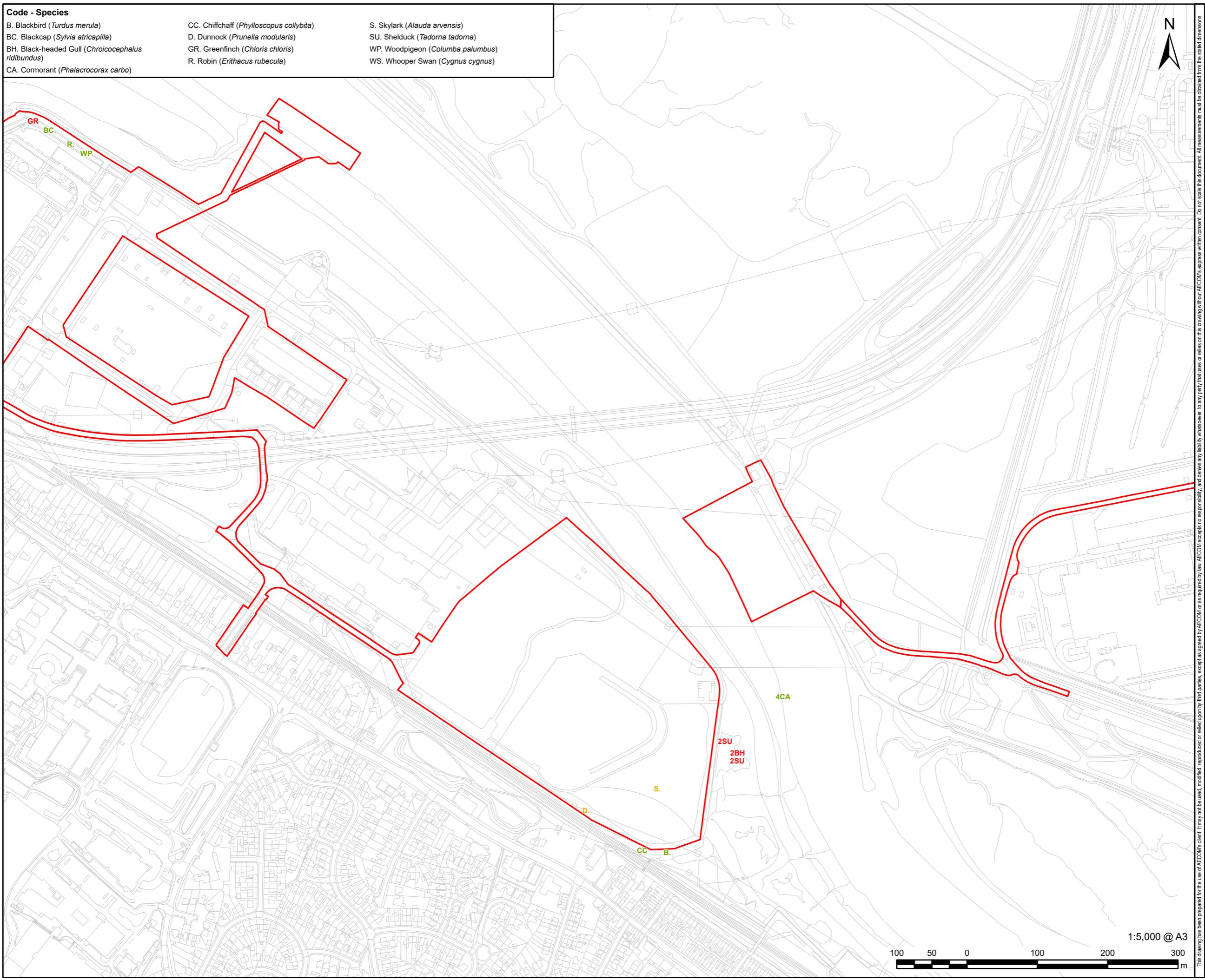
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FIGURE TITLE

Breeding Bird Survey Results
April - 2024, Sheet 3 of 4
Sheet 7 of 20

FIGURE NUMBER

Figure 11D-6



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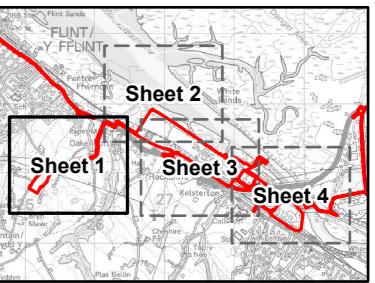
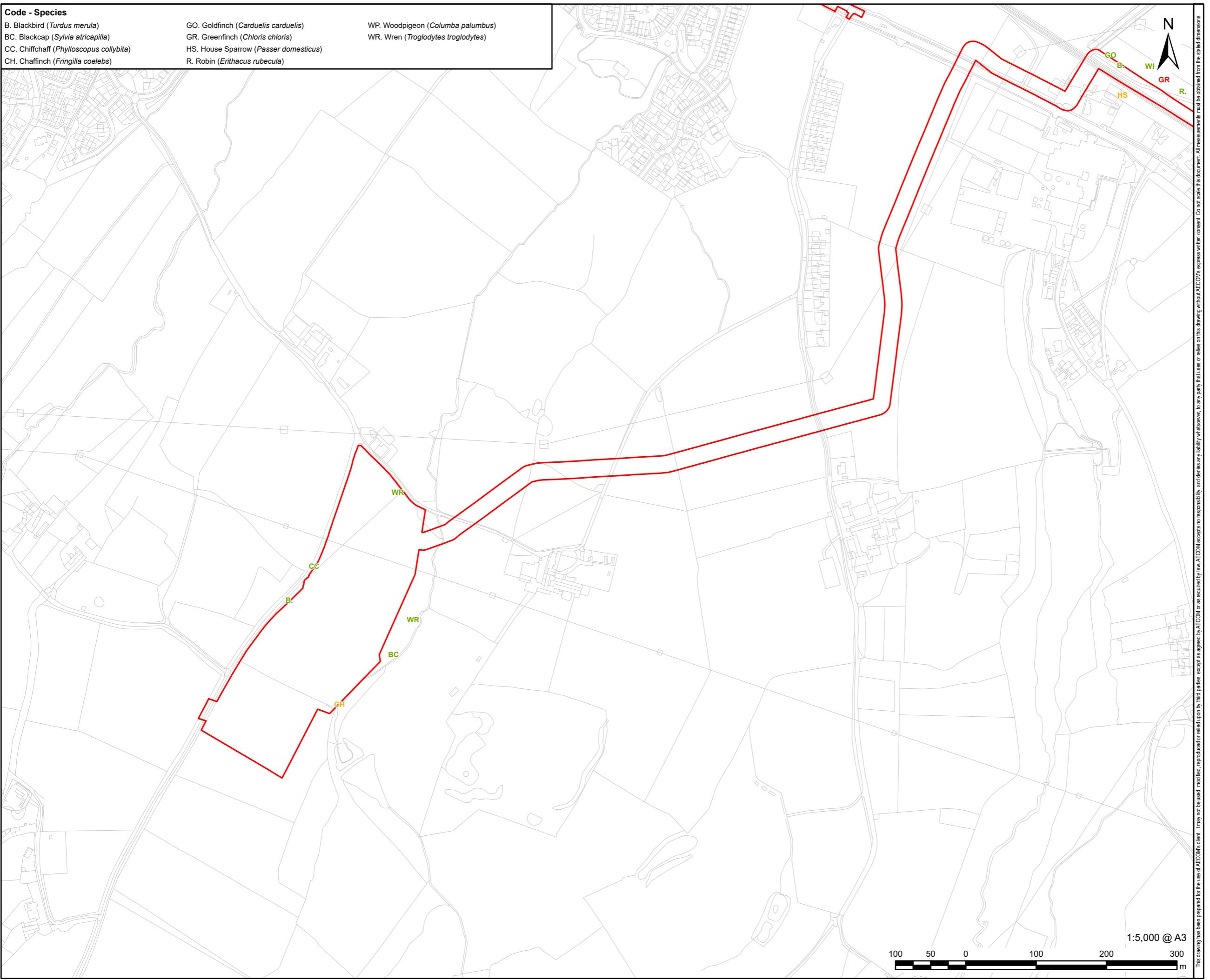
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FIGURE TITLE

Breeding Bird Survey Results
April - 2024, Sheet 4 of 4
Sheet 8 of 20

FIGURE NUMBER

Figure 11D-6

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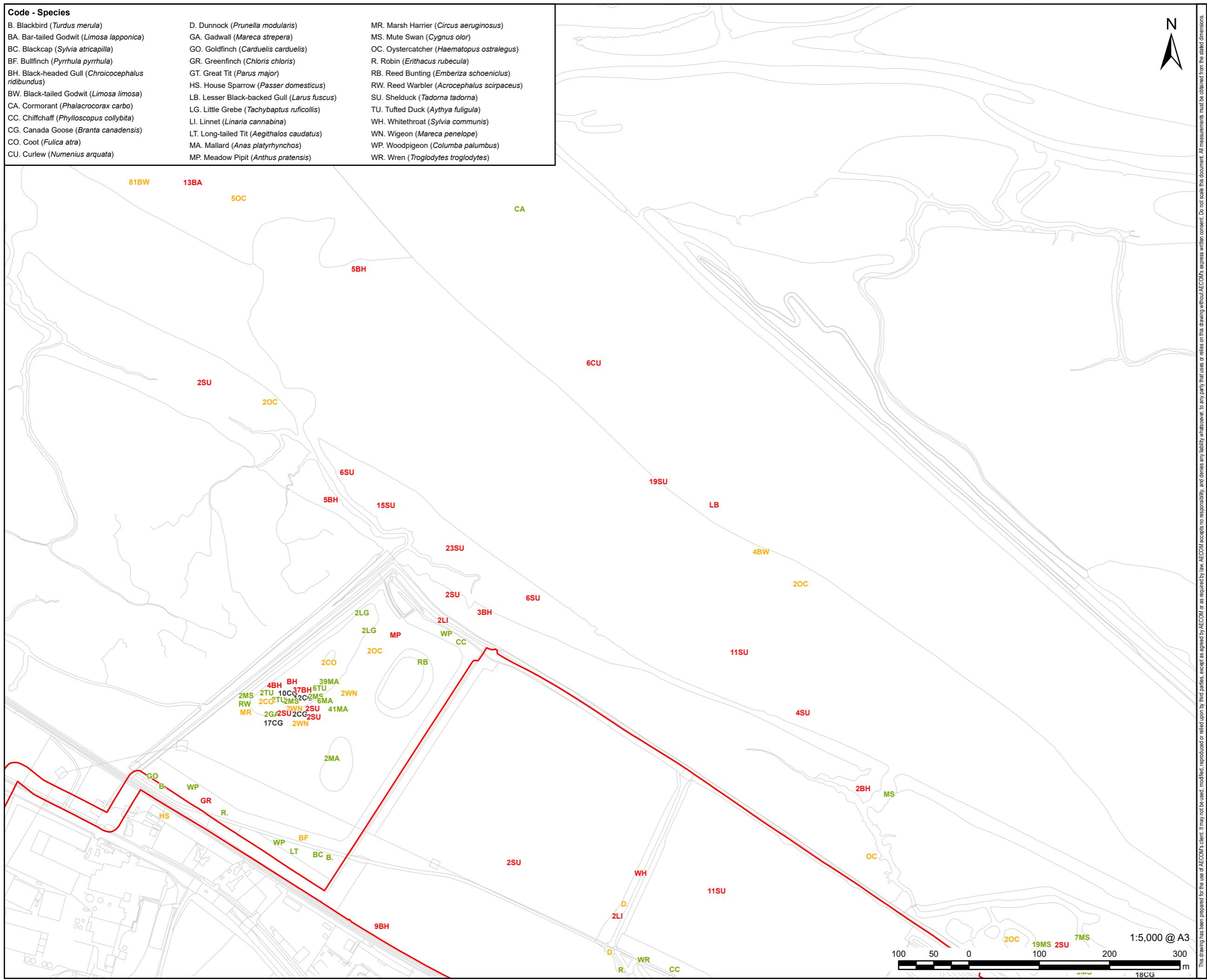
FIGURE TITLE

Breeding Bird Survey Results
May - 2024, Sheet 1 of 4
Sheet 9 of 20

FIGURE NUMBER

Figure 11D-6

Code - Species		
B. Blackbird (<i>Turdus merula</i>)	D. Dunnock (<i>Prunella modularis</i>)	MR. Marsh Harrier (<i>Circus aeruginosus</i>)
BA. Bar-tailed Godwit (<i>Limosa lapponica</i>)	GA. Gadwall (<i>Mareca strepera</i>)	MS. Mute Swan (<i>Cygnus olor</i>)
BC. Blackcap (<i>Sylvia atricapilla</i>)	GO. Goldfinch (<i>Carduelis carduelis</i>)	OC. Oystercatcher (<i>Haematopus ostralegus</i>)
BF. Bullfinch (<i>Pyrrhula pyrrhula</i>)	GR. Greenfinch (<i>Chloris chloris</i>)	R. Robin (<i>Erithacus rubecula</i>)
BH. Black-headed Gull (<i>Chroicocephalus ridibundus</i>)	GT. Great Tit (<i>Parus major</i>)	RB. Reed Bunting (<i>Emberiza schoeniclus</i>)
BW. Black-tailed Godwit (<i>Limosa limosa</i>)	HS. House Sparrow (<i>Passer domesticus</i>)	RW. Reed Warbler (<i>Acrocephalus scirpaceus</i>)
CA. Cormorant (<i>Phalacrocorax carbo</i>)	LB. Lesser Black-backed Gull (<i>Larus fuscus</i>)	SU. Shelduck (<i>Tadorna tadorna</i>)
CC. Chiffchaff (<i>Phylloscopus collybita</i>)	LG. Little Grebe (<i>Tachybaptus ruficollis</i>)	TU. Tufted Duck (<i>Aythya fuligula</i>)
CG. Canada Goose (<i>Branta canadensis</i>)	LI. Linnet (<i>Linaria cannabina</i>)	WH. Whitethroat (<i>Sylvia communis</i>)
CO. Coot (<i>Fulica atra</i>)	LT. Long-tailed Tit (<i>Aegithalos caudatus</i>)	WN. Wigeon (<i>Mareca penelope</i>)
CU. Curlew (<i>Numenius arquata</i>)	MA. Mallard (<i>Anas platyrhynchos</i>)	WP. Woodpigeon (<i>Columba palumbus</i>)
	MP. Meadow Pipit (<i>Anthus pratensis</i>)	WR. Wren (<i>Troglodytes troglodytes</i>)



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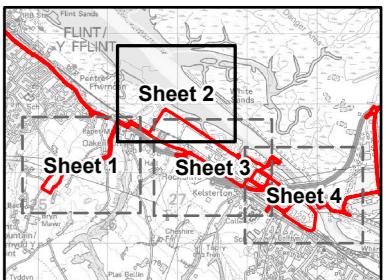
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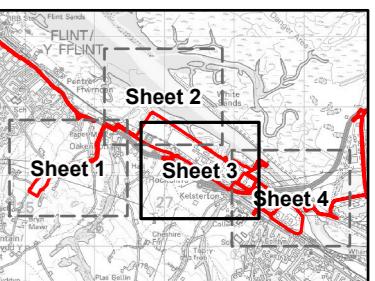
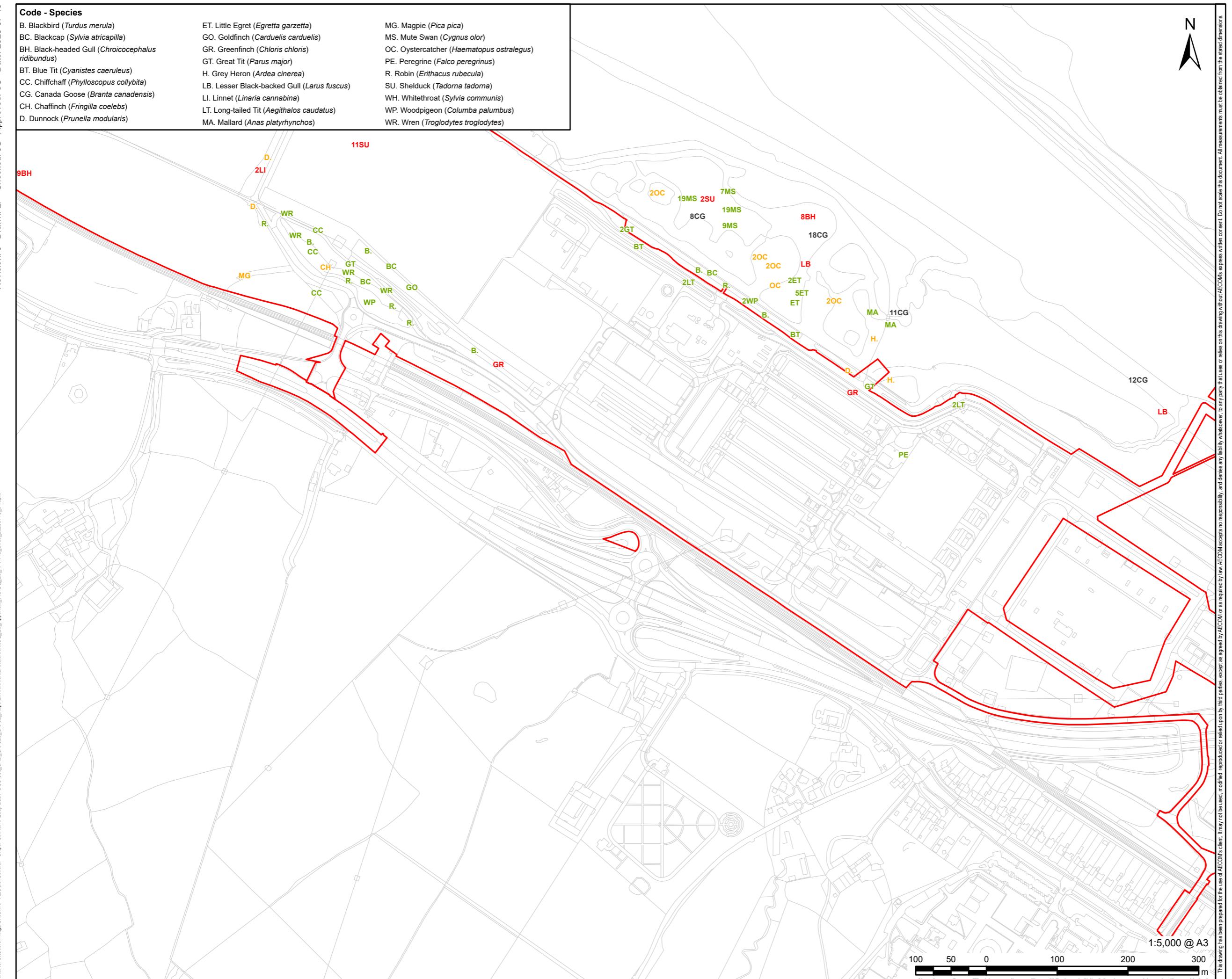
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Breeding Bird Survey Results
May - 2024, Sheet 2 of 4
Sheet 10 of 20

FIGURE NUMBER

FIGURE NUMBER



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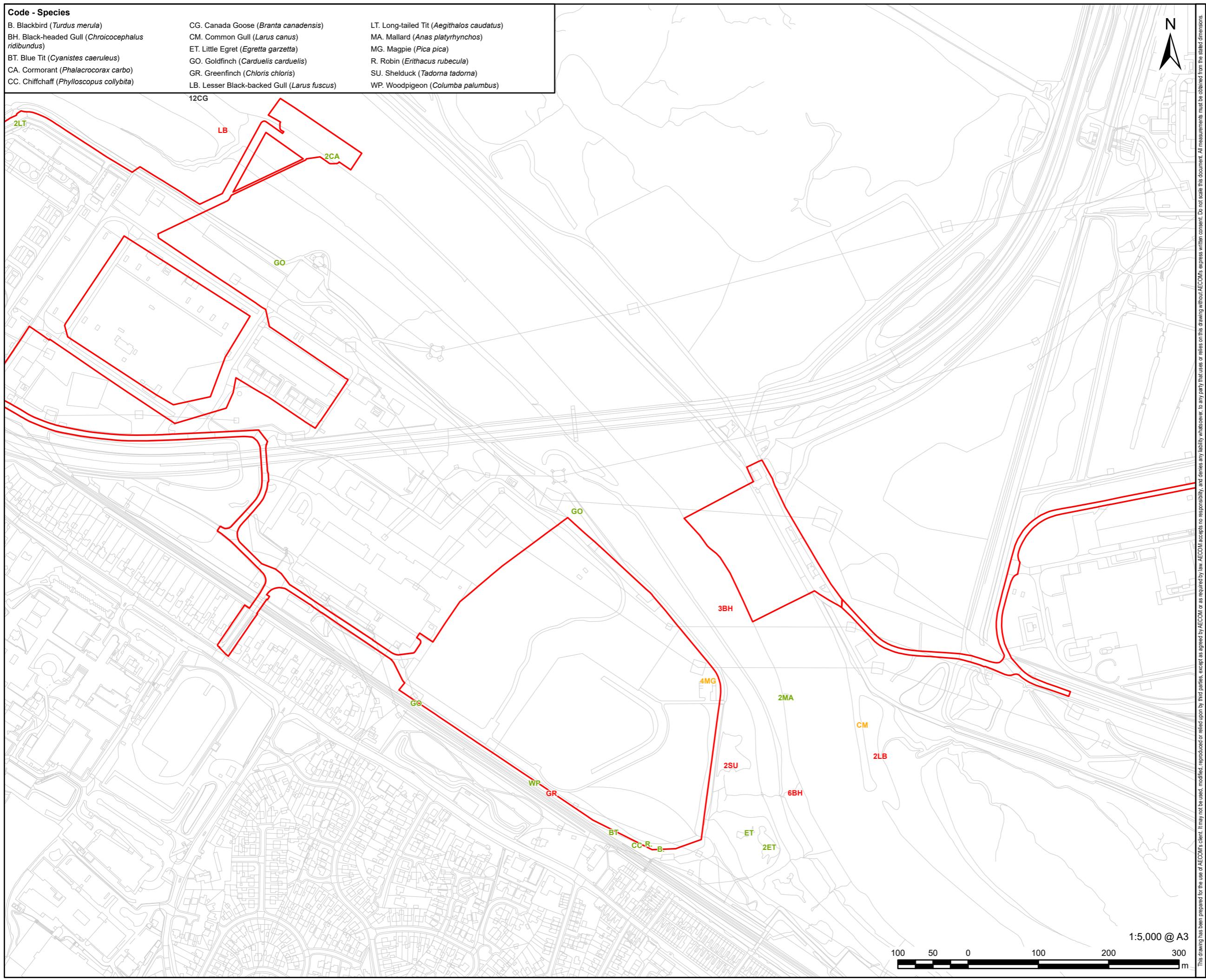
July 2025

PROJECT NUMBER

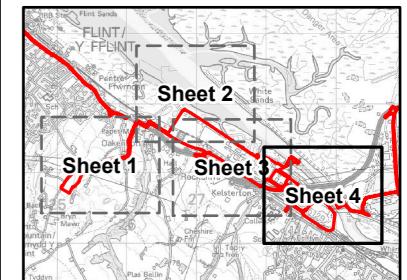
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FIGURE TITLE
Breeding Bird Survey Results
May - 2024, Sheet 3 of 4
Sheet 11 of 20

FIGURE NUMBER
Figure 11D-6



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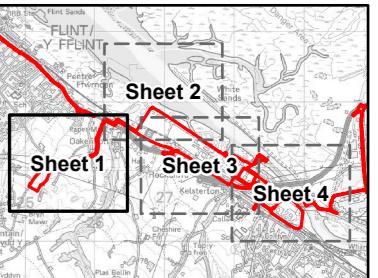
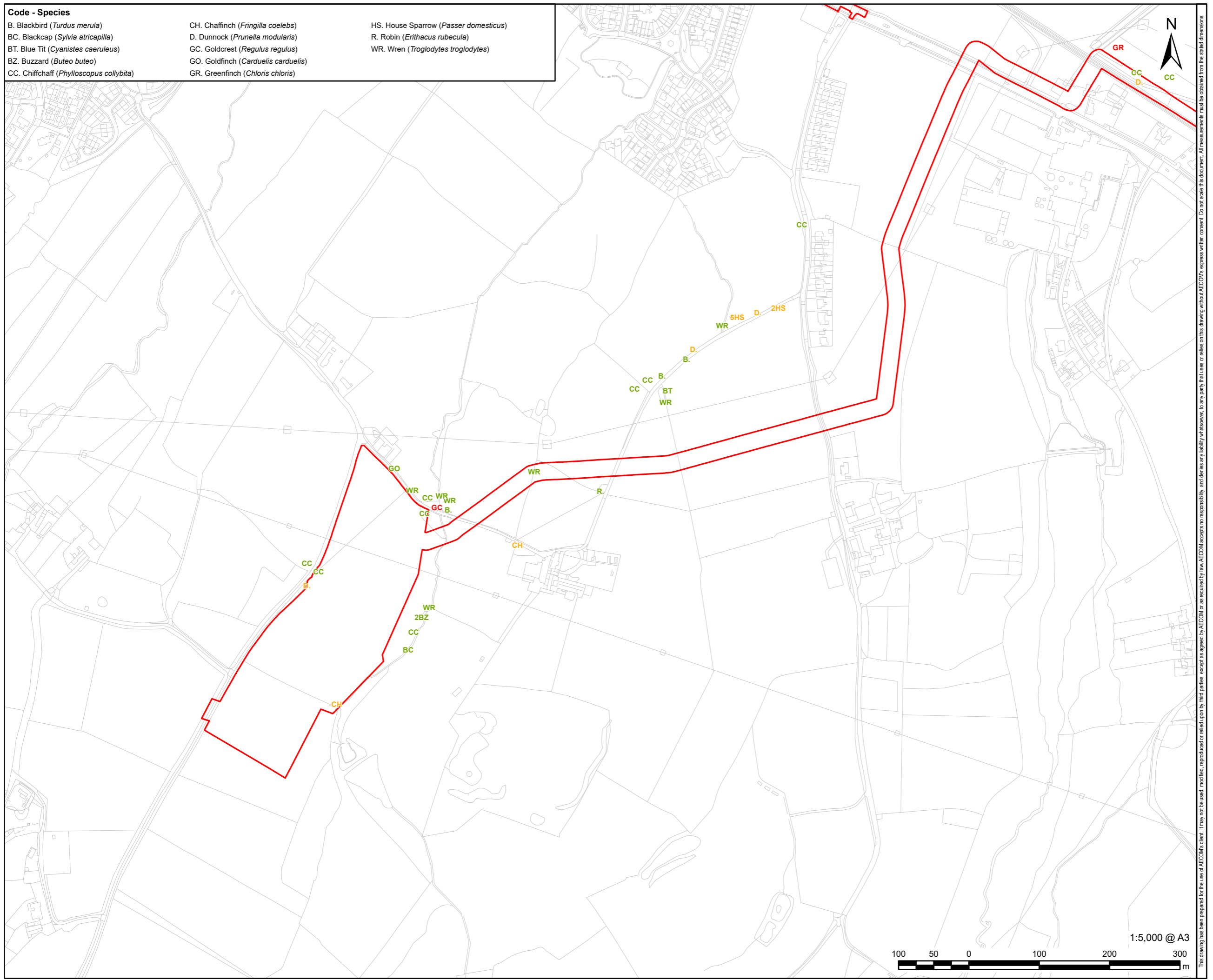
ISSUE PURPOSE
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DATE
July 2025

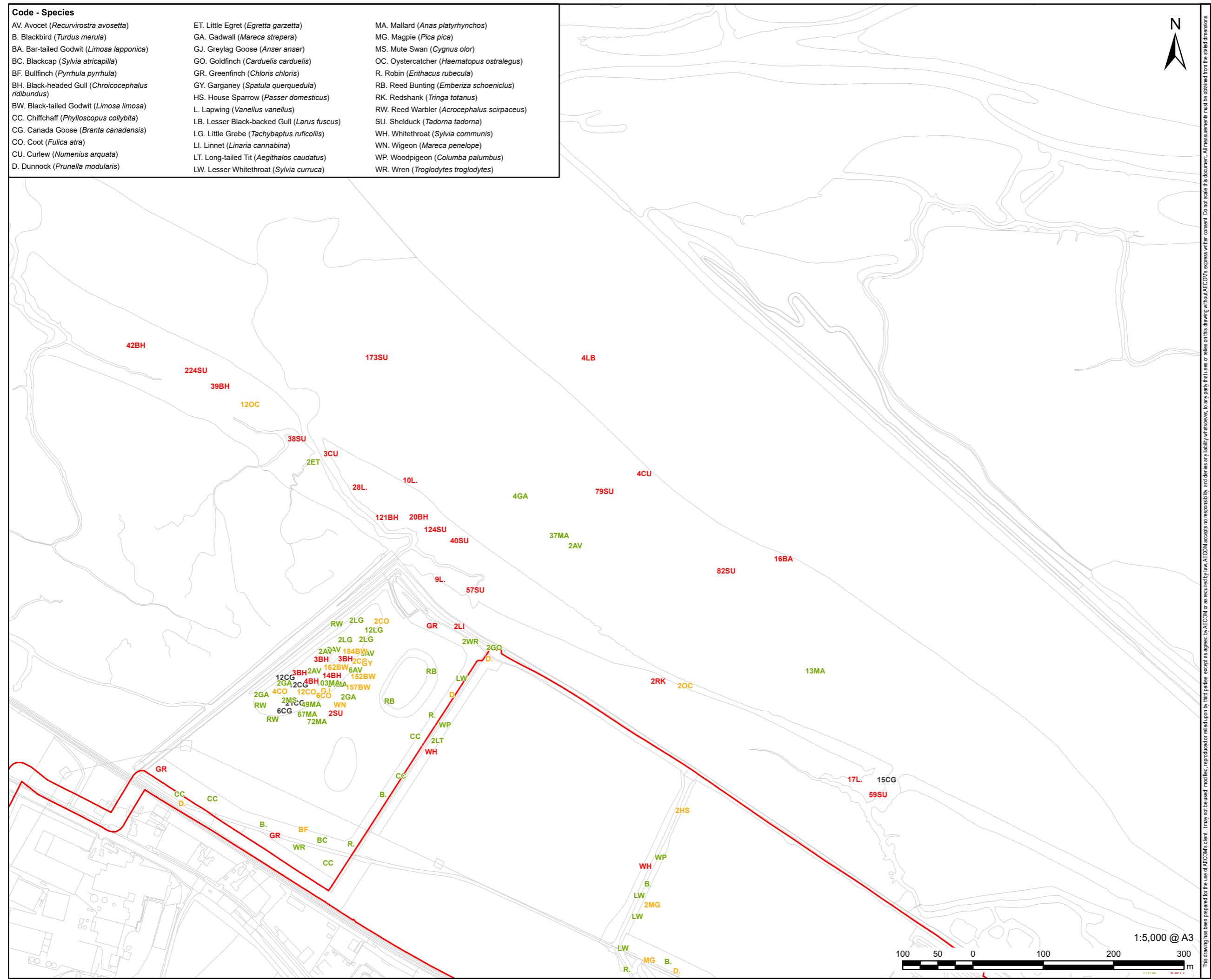
PROJECT NUMBER
60717119

FIGURE TITLE
Breeding Bird Survey Results
May - 2024, Sheet 4 of 4
Sheet 12 of 20

FIGURE NUMBER
Figure 11D-6



Code - Species		
AV. Avocet (<i>Recurvirostra avosetta</i>)	ET. Little Egret (<i>Egretta garzetta</i>)	MA. Mallard (<i>Anas platyrhynchos</i>)
B. Blackbird (<i>Turdus merula</i>)	GA. Gadwall (<i>Mareca strepera</i>)	MG. Magpie (<i>Pica pica</i>)
BA. Bar-tailed Godwit (<i>Limosa lapponica</i>)	GJ. Greylag Goose (<i>Anser anser</i>)	MS. Mute Swan (<i>Cygnus olor</i>)
BC. Blackcap (<i>Sylvia atricapilla</i>)	GO. Goldfinch (<i>Carduelis carduelis</i>)	OC. Oystercatcher (<i>Haematopus ostralegus</i>)
BF. Bullfinch (<i>Pyrrhula pyrrhula</i>)	GR. Greenfinch (<i>Chloris chloris</i>)	R. Robin (<i>Erithacus rubecula</i>)
BH. Black-headed Gull (<i>Chroicocephalus ridibundus</i>)	GY. Garganey (<i>Spatula querquedula</i>)	RB. Reed Bunting (<i>Emberiza schoeniclus</i>)
BW. Black-tailed Godwit (<i>Limosa limosa</i>)	HS. House Sparrow (<i>Passer domesticus</i>)	RK. Redshank (<i>Tringa totanus</i>)
CC. Chiffchaff (<i>Phylloscopus collybita</i>)	L. Lapwing (<i>Vanellus vanellus</i>)	RW. Reed Warbler (<i>Acrocephalus scirpaceus</i>)
CG. Canada Goose (<i>Branta canadensis</i>)	LB. Lesser Black-backed Gull (<i>Larus fuscus</i>)	SU. Shelduck (<i>Tadorna tadorna</i>)
CO. Coot (<i>Fulica atra</i>)	LG. Little Grebe (<i>Tachybaptus ruficollis</i>)	WH. Whitethroat (<i>Sylvia communis</i>)
CU. Curlew (<i>Numenius arquata</i>)	LI. Linnet (<i>Linaria cannabina</i>)	WN. Wigeon (<i>Mareca penelope</i>)
D. Dunnock (<i>Prunella modularis</i>)	LT. Long-tailed Tit (<i>Aegithalos caudatus</i>)	WP. Woodpigeon (<i>Columba palumbus</i>)
	LW. Lesser Whitethroat (<i>Sylvia curruca</i>)	WR. Wren (<i>Troglodytes troglodytes</i>)



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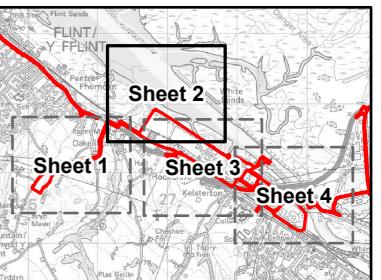
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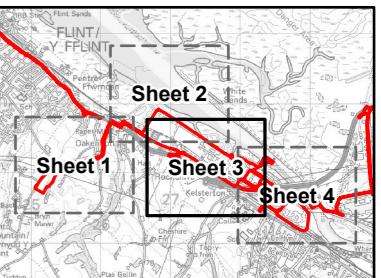
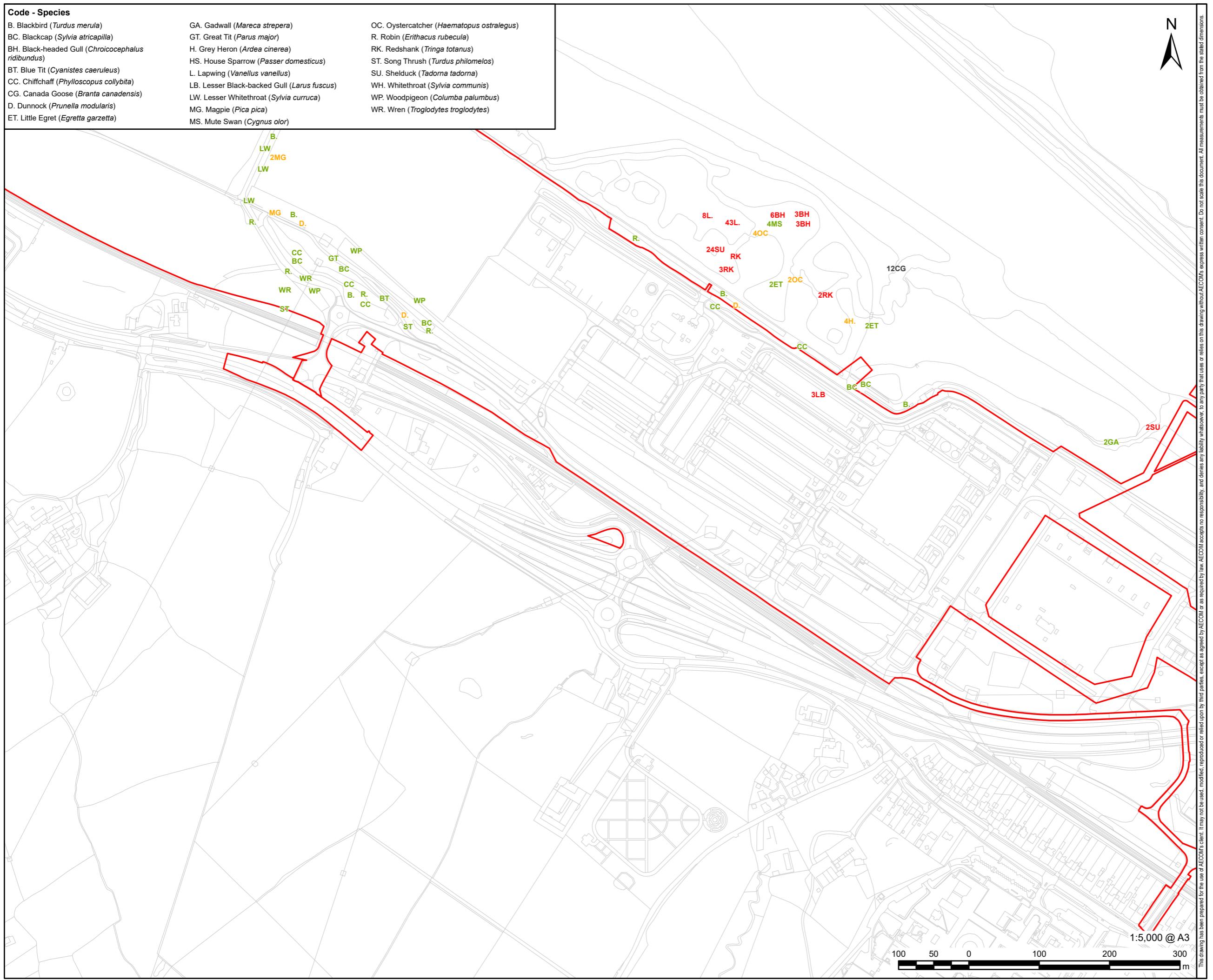
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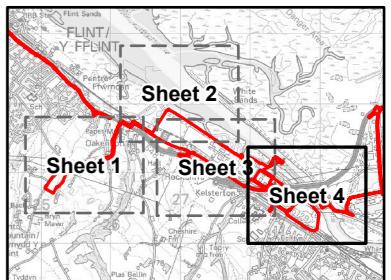
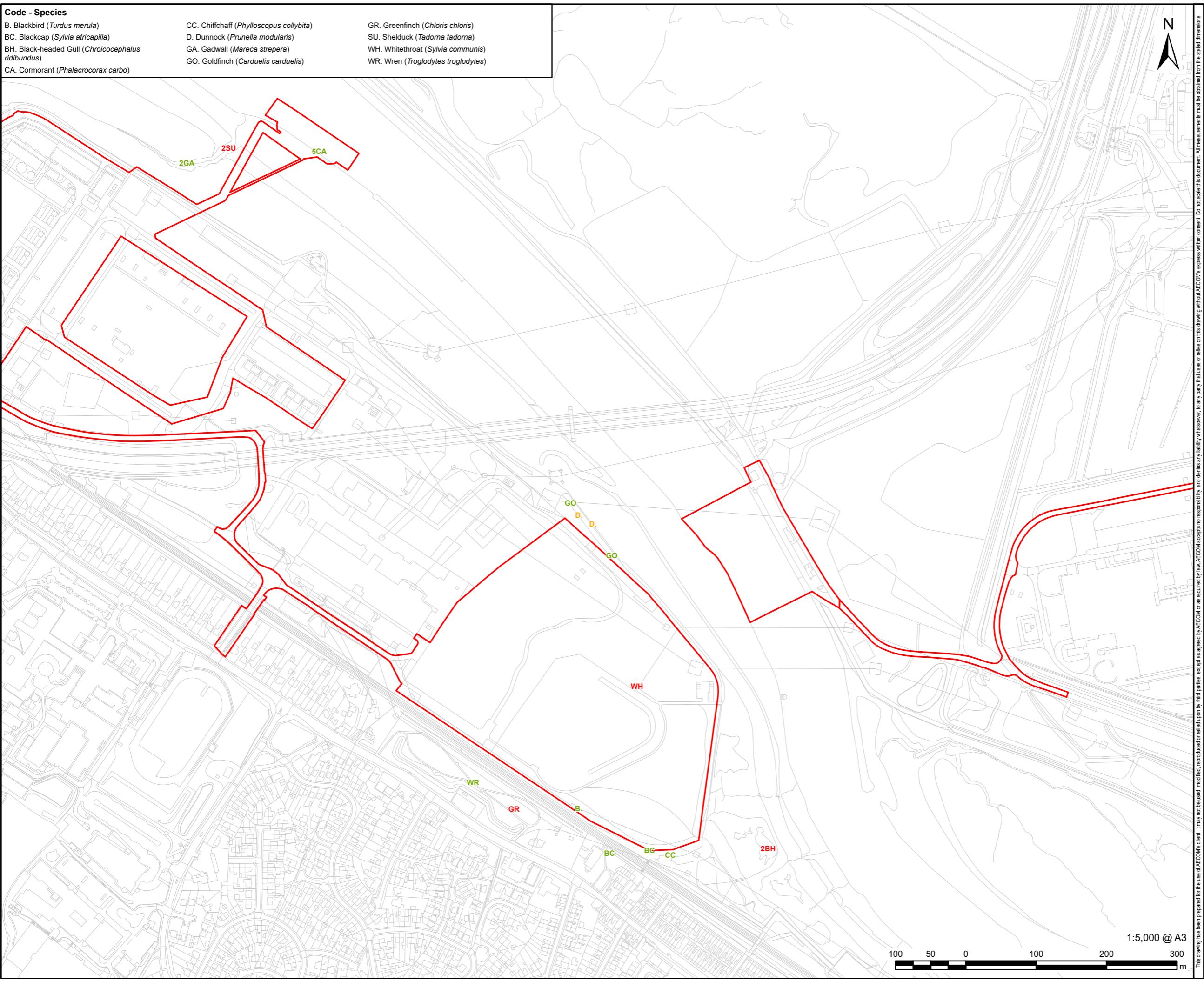
FIGURE TITLE

Breeding Bird Survey Results
June - 2024, Sheet 2 of 4
Sheet 14 of 20

FIGURE NUMBER

FIGURE NUMBER





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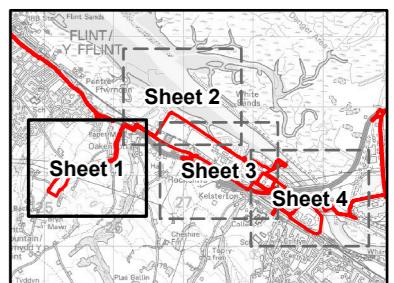
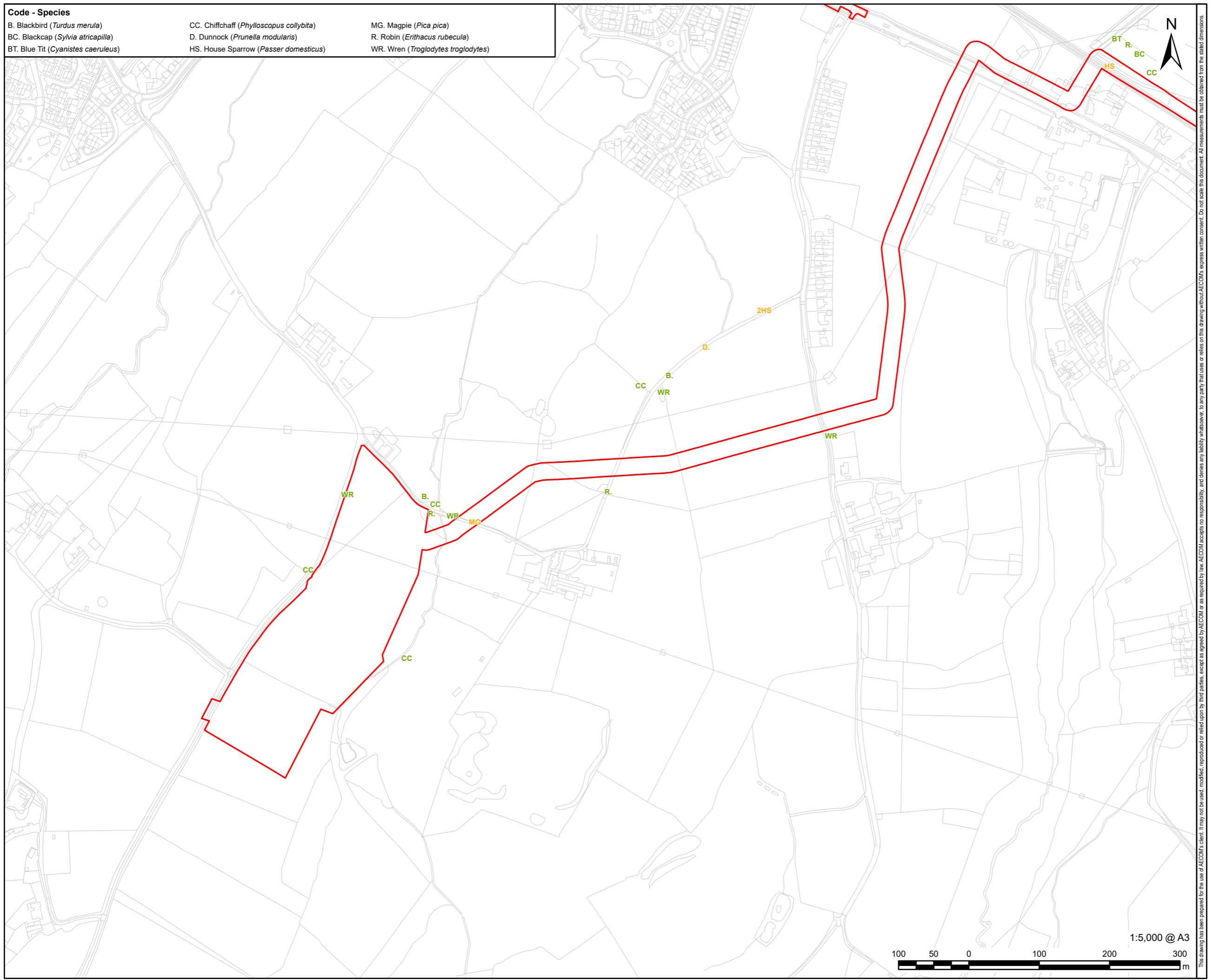
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FIGURE TITLE

Breeding Bird Survey Results
June - 2024, Sheet 4 of 4
Sheet 16 of 20

FIGURE NUMBER

Figure 11D-6



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FIGURE TITLE

Breeding Bird Survey Results
July - 2024, Sheet 1 of 4
Sheet 17 of 20

FIGURE NUMBER

Figure 11D-6

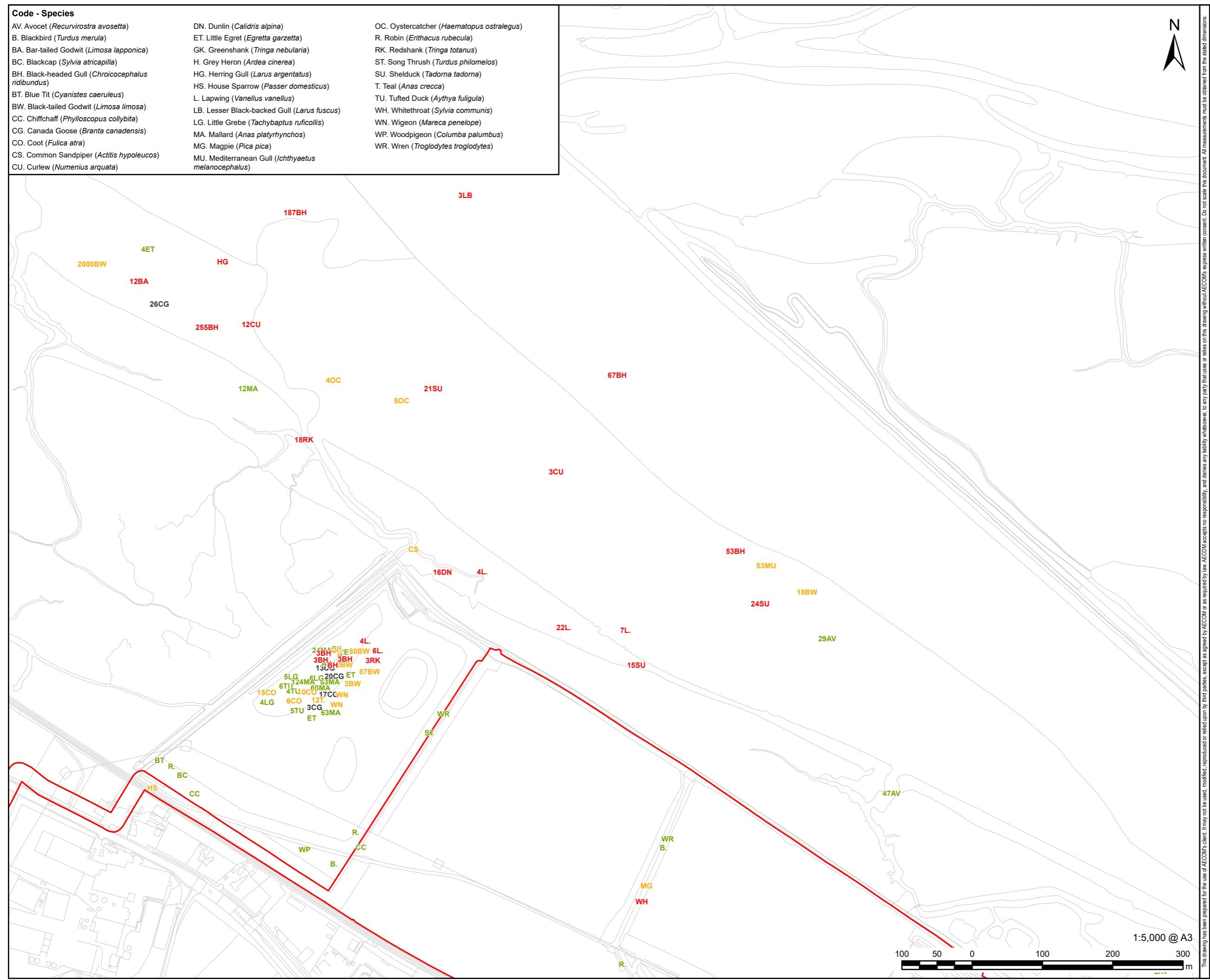
Approved: SCC Date: 2025-07-18
Reviewed: SCC

Code - Species

- AV. Avocet (*Recurvirostra avosetta*)
- B. Blackbird (*Turdus merula*)
- BA. Bar-tailed Godwit (*Limosa lapponica*)
- BC. Blackcap (*Sylvia atricapilla*)
- BH. Black-headed Gull (*Chroicocephalus ridibundus*)
- BT. Blue Tit (*Cyanistes caeruleus*)
- BW. Black-tailed Godwit (*Limosa limosa*)
- CC. Chiffchaff (*Phylloscopus collybita*)
- CG. Canada Goose (*Branta canadensis*)
- CO. Coot (*Fulica atra*)
- CS. Common Sandpiper (*Actitis hypoleucos*)
- CU. Curlew (*Numenius arquata*)

- DN. Dunlin (*Calidris alpina*)
- ET. Little Egret (*Egretta garzetta*)
- GK. Greenshank (*Tringa nebularia*)
- H. Grey Heron (*Ardea cinerea*)
- HG. Herring Gull (*Larus argentatus*)
- HS. House Sparrow (*Passer domesticus*)
- L. Lapwing (*Vanellus vanellus*)
- LB. Lesser Black-backed Gull (*Larus fuscus*)
- LG. Little Grebe (*Tachybaptus ruficollis*)
- MA. Mallard (*Anas platyrhynchos*)
- MG. Magpie (*Pica pica*)
- MU. Mediterranean Gull (*Ichthyaetus melanocephalus*)

- OC. Oystercatcher (*Haematopus ostralegus*)
- R. Robin (*Erithacus rubecula*)
- RK. Redshank (*Tringa totanus*)
- ST. Song Thrush (*Turdus philomelos*)
- SU. Shelduck (*Tadorna tadorna*)
- T. Teal (*Anas crecca*)
- TU. Tufted Duck (*Aythya fuligula*)
- WH. Whitethroat (*Sylvia communis*)
- WN. Wigeon (*Mareca penelope*)
- WP. Woodpigeon (*Columba palumbus*)
- WR. Wren (*Troglodytes troglodytes*)



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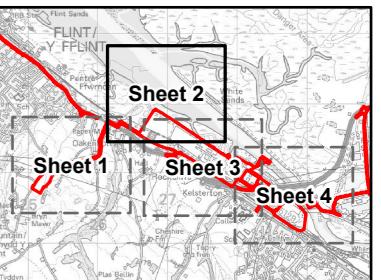
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July 2025

PROJECT NUMBER

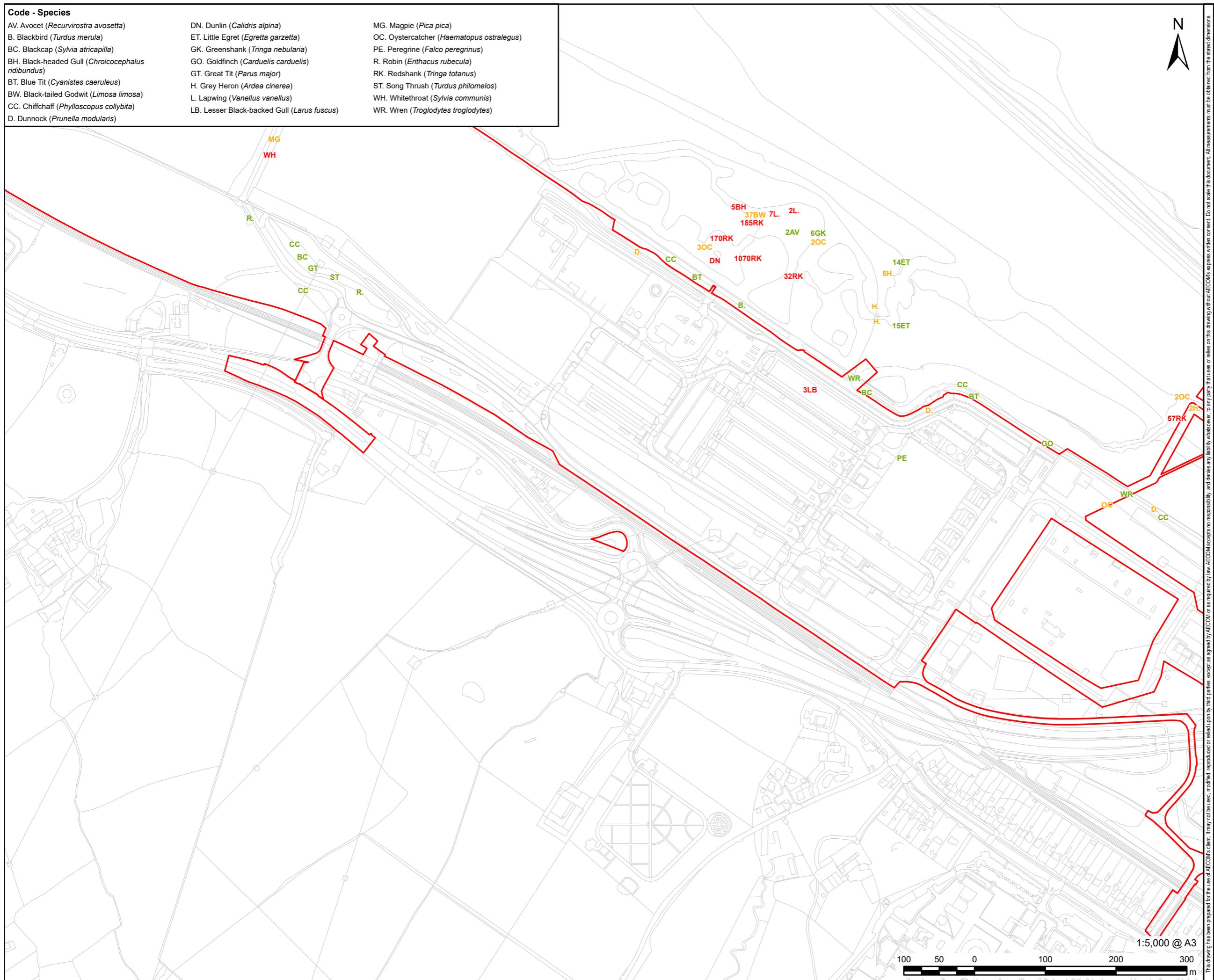
60717119

FIGURE TITLE

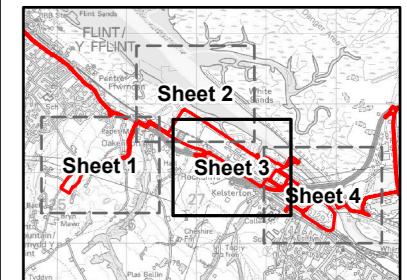
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FIGURE NUMBER

Figure 11D.6



— 1 —



NOTES

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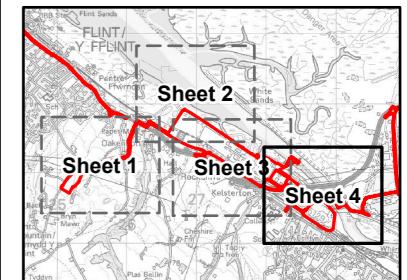
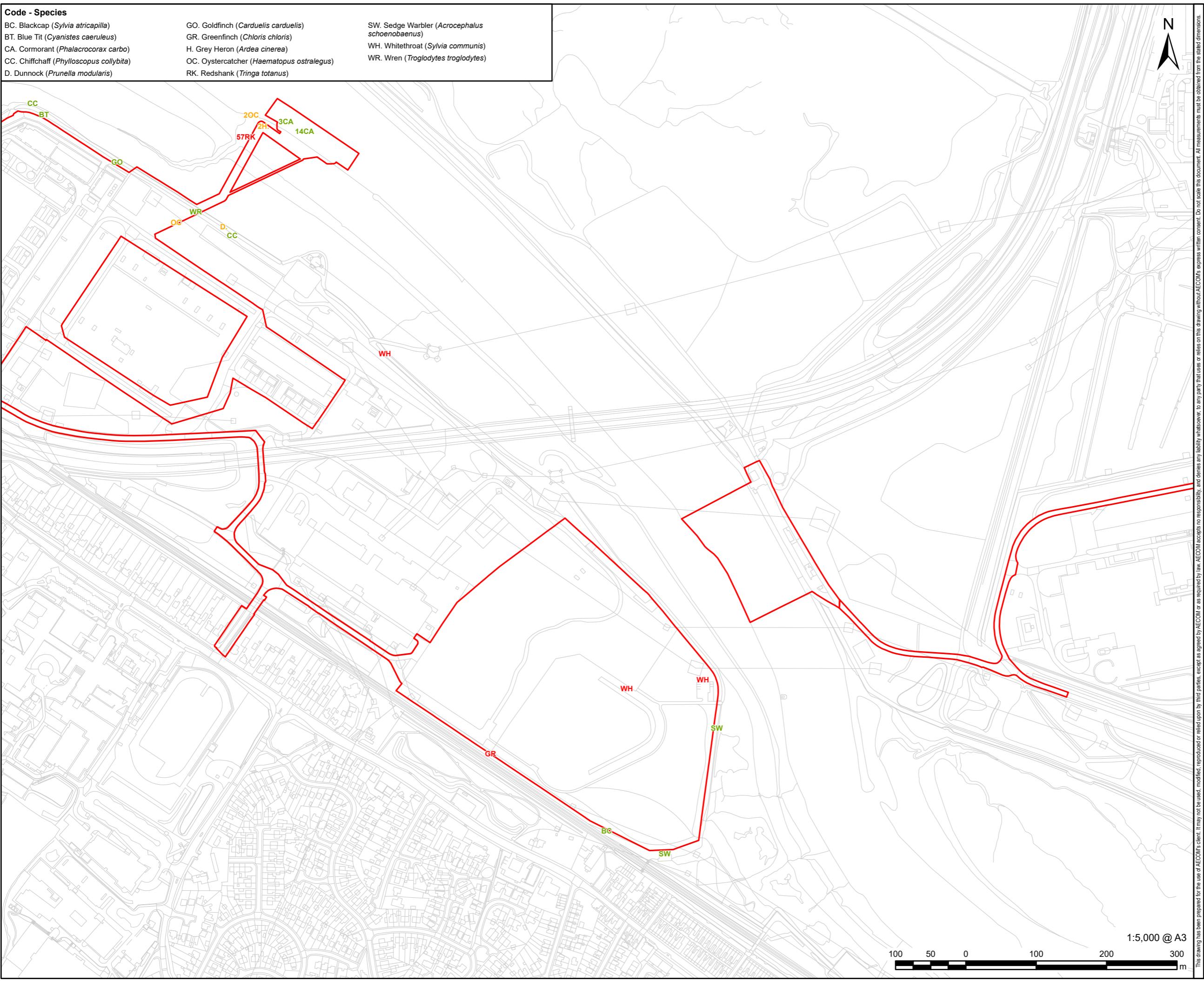
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FIGURE TITLE F

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FIGURE NUMBER

FIGURE NUMBER



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Figure 11D-6

Annex B: Wetland Bird Survey Metadata

Table B 1: Wetland Bird Survey Metadata

Survey Date	Sunrise	Sunset	Tide Type	Tide height (m)	Tide Time (GMT)	Survey Times	Wind (Beaufort, Direction)	Cloud (Oktas)	Visibility	Temperature (Celsius)	Precipitation	Disturbance
23 November 2023	07:50	16:06	Low	2.5	14:13	11:42 – 15:48	4 - 5, W	5 - 7	Excellent	14 - 13	Dry - Dry	None
27 November 2023	07:57	16:01	High	9.3	11:01	08:49 – 13:09	2, NE	8	Good	6	Rain - Drizzle	None
01 December 2023	07:58	16:01	Nocturnal – High Neap	9.2	01:21	00:27 – 02:23	0	0	N/A	-3	Dry - Dry	None
14 December 2023	08:19	15:54	High	9.3	11:38	08:23 – 14:08	3 - 5, NE	8 - 7	Good	4	Recent rain - Showers	None
14 December 2023	08:19	15:54	Nocturnal – High Spring	9.0	00:04	21:23 – 00:13	4 - 3, SE	4 - 2	Good	7 – 6	Recent rain - Dry	None
18 December 2023	08:22	15:54	Low	2.4	09:21	06:41 – 11:27	5 - 4, NE	6 - 8	Good	13 - 14	Dry - Showers	None
03 January 2024	08:26	16:06	Low	3.2	09:45	07:19 – 11:51	2, N	8	Good	6 - 8	Drizzle - Rain	None
04 January 2024	08:26	16:07	Nocturnal – High Neap	7.6	04:22	02:36 – 5:01	2, N	4 - 2	Good	6 - 7	Dry - Dry	None
11 January 2024	08:22	16:17	Nocturnal – High Spring	9.0	23:14	21:19 – 23:17	4, NE	8	Good	5	Dry - Dry	None
24 January 2024	08:09	16:39	Nocturnal – High Neap	8.6	22:46	21:59 – 23:14	2, N	0	Good	5	Dry - Dry	None
25 January 2024	08:07	16:41	High	9.5	11:00	08:16 – 13:18	2 - 3, N - NE	5 – 7	Good	7 - 9	Dry - Dry	None
05 February 2024	07:50	17:02	Nocturnal – High Neap	7.2	06:29	05:00 – 08:00	3, SW	6	Excellent	9	Dry	None
11 February 2024	07:39	17:14	Nocturnal – High Spring	9.9	00:50	23:39 – 00:52	2, SW	1	Excellent	7 - 8	Dry	None
12 February 2024	07:37	17:16	High	10.4	13:07	10:33 – 15:33	2, SW	1	Excellent	8 - 12	Dry	None
15 February 2024	07:31	17:22	Low	1.4	09:44	10:14 – 12:14	1, S	8	Excellent	12	Dry	None
07 March 2024	06:44	18:02	Nocturnal – High Neap	8.2	21:29	21:07 – 23:38	3 - 2, E	8	Excellent	5 - 6	Dry	None

Survey Date	Sunrise	Sunset	Tide Type	Tide height (m)	Tide Time (GMT)	Survey Times	Wind (Beaufort, Direction)	Cloud (Oktas)	Visibility	Temperature (Celsius)	Precipitation	Disturbance
11 March 2024	06:35	18:09	Nocturnal – High Spring	9.9	00:20	23:00 – 02:00	1, E	8	Excellent	7	Dry	None
12 March 2024	06:32	18:11	High	10.2	12:45	10:15 – 15:15	2, SW	3 - 5	Excellent	12 - 14	Dry	None
14 March 2024	06:28	18:15	Low	0.8	08:40	08:37 – 12:02	2, S	8	Excellent	12 - 14	Dry	None
02 April 2024	06:42	19:49	Nocturnal – High Neap	7.5	05:03	03:30 – 06:30	1, N	7 - 5	Excellent	5 - 3	Dry	None
09 April 2024	06:23	20:04	Nocturnal – High Spring	9.8	00:24	23:30 – 02:30	2, W	5 - 6	Excellent	6 - 5	Dry	None
10 April 2024	06:23	20:04	High	10.1	13:20	11:00 – 16:00	2, SE	8	Excellent	12 - 14	Rain - Dry	None
11 April 2024	06:21	20:06	Low	0.5	08:38	06:00 – 11:00	2, S – SW	3	Excellent	13 - 15	Dry	None
13 May 2024	05:15	21:02	Nocturnal – High Neap	8.3	03:24	02:00 – 05:00	1, SW	8	Excellent	12	Dry	None
14 May 2024	05:14	21:04	Low	0.5	11:18	09:00 – 14:00	2, SE	8 - 7	Excellent	13 - 16	Dry	None
22 May 2024	05:02	21:16	Nocturnal – High Spring	8.7	23:53	22:30 – 01:30	4, NW	8	Excellent	11	Rain - Dry	None
23 May 2024	05:00	21:18	High	8.7	12:09	10:27 – 12:50	4 - 3, W	8	Excellent	9 - 12	Showers	None
04 June 2024	04:48	21:33	Nocturnal – High Neap	8.8	22:48	22:08 – 00:36	1, NW	3	Excellent	11 - 9	Dry	None
24 June 2024	04:45	21:43	High	8.9	13:54	11:07 – 14:49	1 – 2, S	3	Excellent	23 - 26	Dry	None
24 June 2024	04:46	21:43	Nocturnal – High Spring	9.1	02:13	23:45 – 02:45	1, S	3	Excellent	16 - 15	Dry	None
26 June 2024	04:46	21:43	Low	1.4	09:58	07:30 – 12:30	1 - 2, SE	3	Excellent	19 - 22	Dry -	None
03 July 2024	04:51	21:41	Nocturnal – High Neap	8.4	22:31	21:00 – 00:00	2, W	5	Excellent	13	Dr	None
23 July 2024	05:15	21:20	High	9.3	13:45	11:15 – 16:16	2 – 1, NW	1	Excellent	19 - 20	Dry	None
23 July 2024	05:17	21:19	Nocturnal – High Spring	9.5	01:59	23:45 – 02:45	2, SW	3 - 4	Excellent	1	Dry	None
24 July 2024	05:17	21:19	Low	0.8	09:05	06:59 – 10:44	2, S	6 - 7	Excellent	17 - 20	Dry	None
05 August 2024	05:36	20:58	Low	1.6	07:43	06:53 – 11:03	2, S	3 - 6	Excellent	17 - 22	Dry	None
12 August 2024	05:48	20:45	Nocturnal – High Neap	7.9	04:29	03:52 – 06:51	3, S	3 – 5	Excellent	18	Dry	None

Survey Date	Sunrise	Sunset	Tide Type	Tide height (m)	Tide Time (GMT)	Survey Times	Wind (Beaufort, Direction)	Cloud (Oktas)	Visibility	Temperature (Celsius)	Precipitation	Disturbance
20 August 2024	06:01	20:27	Nocturnal – High Spring	9.4	00:58	23:42 – 01:41	3, W	3	Excellent	13	Dry	None
21 August 2024	06:03	20:25	High	9.7	13:27	10:59 – 14:29	3, West – SW	2 – 8	Excellent	16 – 18	Dry	None
12 September 2024	06:41	19:34	Nocturnal – High Neap	7.1	05:34	04:22 – 06:35	2, NW	1 - 5	Excellent	9 - 8	Dry – Showers	None
17 September 2024	06:50	19:21	Nocturnal – High Spring	9.9	23:52	22:00 – 01:00	1, S	0	Excellent	13 – 10	Dry	None
18 September 2024	06:51	19:19	High	9.7	12:22	11:33 – 13:26	1 – 2, S	8 - 4	Excellent	14 - 19	Dry	None
25 September 2024	07:03	19:02	Low	3.3	11:53	10:08 – 12:48	1 – 2, S	8	Excellent	11 - 13	Dry	None
11 October 2024	07:32	18:24	Nocturnal – High Neap	7.1	05:16	04:05 – 06:10	1, S	7 - 2	Excellent	5 - 4	Dry	None
17 October 2024	07:43	18:10	Nocturnal – High Spring	10.2	00:08	23:16 – 01:13	1, S	0	Excellent	12 - 10	Dry	None
18 October 2024	07:45	18:08	High	9.9	12:35	11:00 – 13:37	2 – 3, S	3 - 5	Excellent	11 – 15	Dry	None
22 October 2024	07:52	17:59	Low	2.2	09:51	09:06 – 11:42	1 – 2, W	3	Excellent	9 -14	Dry	None

Annex C: Breeding Bird Survey Metadata

Table C 1: Breeding Bird Survey Conditions

Date	Sunrise	Survey Times	Wind (Beaufort, Direction)	Cloud (Oktas)	Cover	Visibility	Temperature (Celsius)	Precipitation	Disturbance
28 March 2024	05:55	07:00 – 11:00	2 - 3, S - SW	3 - 8		Excellent	5 - 8	Dry	None
10 April 2024	06:26	07:00 – 11:00	2, S – SW	3		Excellent	13 - 15	Dry	None
13 May 2024	05:15	07:00 – 11:00	2 – 3, S	8		Excellent	15 - 18	Dry	None
05 June 2024	04:48	06:30 – 10:30	2, W	5 - 3		Excellent	10 - 13	Dry	None
25 June 2024	04:46	06:00 – 10:00	3, SE	5 - 3		Excellent	19 - 22	Dry	None
03 July 2024	04:51	06:15 – 10:15	2, SW - W	7 - 5		Excellent	12 – 16	Recent rain - Dry	None

Annex D: British Trust for Ornithology Low Tide Count Data

Table D 1: BTO WeBS Low Tide Data for Sector DD033 (2021-22)

Species	Preferred Habitat	Area of Preferred Habitat	Peak Count	Peak Density	Mean Count	Mean Density	Raw Monthly Whole Site NOV	Raw Monthly Whole Site DEC	Raw Monthly Whole Site JAN	Raw Monthly Whole Site FEB	Raw Monthly Whole Site WINTER MAXIMUM	% of whole site population
Canada goose	All habitats	171.0	1000	5.85	625	3.65	4888	3866	3081	1576	4888	20.5
Pink-footed goose	All habitats	171.0	8000	46.78	3375	19.74	6126	5038	6521	11248	11248	71.1
Shelduck ⁶⁷	All habitats	171.0	5	0.03	3	0.02	2453	1929	962	983	2453	0.2
Wigeon ⁷	All habitats	171.0	160	0.88	52	0.30	9063	6521	3725	2831	9063	1.8
Mallard	All habitats	171.0	27	0.16	14	0.08	616	454	483	465	616	4.4
Teal ⁶⁷	All habitats	171.0	45	0.26	17	0.10	2779	3005	2301	2103	3005	1.5
Little egret	Intertidal & non-tidal	155.0	4	0.03	1	0.01	177	79	60	64	177	2.3
Cormorant ⁸	All habitats	171.0	7	0.04	2	0.01	981	431	964	429	981	0.7
Oystercatcher ⁶	Intertidal	61.0	41	0.67	17	0.28	39799	35793	43425	22031	43425	0.1
Lapwing ⁷	Intertidal & non-tidal	155.0	150	0.97	69	0.44	6636	4974	6746	5648	6746	2.2
Curlew ⁶	Intertidal & non-tidal	155.0	11	0.07	9	0.06	1884	1733	3009	1703	3009	0.4
Dunlin ⁶⁷	Intertidal	61.0	21	0.34	8	0.14	13458	6286	17528	12995	17528	0.1
Redshank ⁶⁷	Intertidal & non-tidal	155.0	70	0.45	28	0.19	3732	4498	3658	4375	4498	1.6
Great black-backed gull	All habitats	171.0	6	0.04	2	0.01	113	131	71	275	275	2.2
Lesser black-backed gull	All habitats	171.0	1	0.01	0	0.00	172	95	97	181	181	0.6

⁶ Species is a qualifying feature of the Dee Estuary SPA/ Ramsar site

⁷ Species is a qualifying feature of the Mersey Estuary SPA/ Ramsar site

⁸ Species is a qualifying feature of the Dee Estuary SSSI

Table D 2: BTO WeBS Low Tide Data for Sector DD034 (2021-22)

Species	Preferred Habitat	Area of Preferred Habitat	Peak Count	Peak Density	Mean Count	Mean Density	Raw Monthly Whole Site NOV	Raw Monthly Whole Site DEC	Raw Monthly Whole Site JAN	Raw Monthly Whole Site FEB	Raw Monthly Whole Site WINTER MAXIMUM	% of whole site population
Canada goose	All habitats	99.0	500	5.05	146	1.47	4888	3866	3081	1576	4888	10.2
Pink-footed goose	All habitats	99.0	3500	35.35	1008	10.18	6126	5038	6521	11248	11248	31.1
Mute swan	Sub-tidal	8.0	7	0.88	2	0.22	39	26	36	43	43	16.3
Whooper swan	All habitats	99.0	31	0.31	14	0.14	3	21	43	32	43	72.1
Shelduck ⁶⁷	All habitats	99.0	8	0.08	2	0.02	2453	1929	962	983	2453	0.3
Wigeon ⁷	All habitats	99.0	6	0.06	2	0.02	9063	6521	3725	2831	9063	0.1
Teal ⁶⁷	All habitats	99.0	26	0.26	7	0.07	2779	3005	2301	2103	3005	0.9
Grey heron	Intertidal & non-tidal	91.0	1	0.01	0	0.00	54	65	58	53	65	1.5
Great white egret	Intertidal & non-tidal	91.0	1	0.01	0	0.00	15	14	13	12	15	6.7
Little egret	Intertidal & non-tidal	91.0	1	0.01	1	0.01	177	79	60	64	177	0.6
Curlew ⁶	Intertidal & non-tidal	91.0	3	0.03	1	0.01	1884	1733	3009	1703	3009	0.1
Redshank ⁶⁷	Intertidal & non-tidal	91.0	18	0.20	5	0.06	3732	4498	3658	4375	4498	0.4
Lesser black-backed gull	All habitats	99.0	1	0.01	0	0.00	172	95	97	181	181	0.6

Table D 3: BTO WeBS Low Tide Data for Sector DD035 (2021-22)

Species	Preferred Habitat	Area of Preferred Habitat	Peak Count	Peak Density	Mean Count	Mean Density	Raw Monthly Whole Site NOV	Raw Monthly Whole Site DEC	Raw Monthly Whole Site JAN	Raw Monthly Whole Site FEB	Raw Monthly Whole Site WINTER MAXIMUM	% of whole site population
Canada goose	All habitats	97.0	1700	17.53	652	6.72	4888	3866	3081	1576	4888	34.8
Mute swan	Sub-tidal	0.1	7	70.00	3	25.00	39	26	36	43	43	16.3
Whooper swan	All habitats	97.0	19	0.20	8	0.08	3	21	43	32	43	44.2
Shelduck ⁶ ⁷	All habitats	97.0	14	0.14	4	0.04	2453	1929	962	983	2453	0.6
Mallard	All habitats	97.0	1	0.01	0	0.00	616	454	483	465	616	0.2
Great white egret	Intertidal & non-tidal	97.0	1	0.01	0	0.00	15	14	13	12	15	6.7
Redshank ⁶⁷	Intertidal & non-tidal	97.0	1	0.01	0	0.00	3732	4498	3658	4375	4498	0.0

Table D 4: BTO WeBS Low Tide Data for Sector DD038 (2021-22)

Species	Preferred Habitat	Area of Preferred Habitat	Peak Count	Peak Density	Mean Count	Mean Density	Raw Monthly Whole Site NOV	Raw Monthly Whole Site DEC	Raw Monthly Whole Site JAN	Raw Monthly Whole Site FEB	Raw Monthly Whole Site WINTER MAXIMUM	% of whole site population
Canada goose	All habitats	142.0	120	0.85	46	0.32	4888	3866	3081	1576	4888	2.5
Shelduck ⁶⁷	All habitats	142.0	75	0.53	52	0.37	2453	1929	962	983	2453	3.1
Wigeon ⁷	All habitats	142.0	250	1.76	63	0.44	9063	6521	3725	2831	9063	2.8
Teal ⁶⁷	All habitats	142.0	100	0.70	40	0.28	2779	3005	2301	2103	3005	3.3
Great crested grebe ⁷⁸	Sub-tidal	26.0	2	0.08	1	0.02	5	3	41	1	41	4.9
Grey heron	Intertidal & non-tidal	116.0	2	0.02	1	0.00	54	65	58	53	65	3.1
Cormorant ⁸	All habitats	142.0	6	0.04	2	0.01	981	431	964	429	981	0.6
Oystercatcher ₆	Intertidal	116.0	10	0.09	3	0.02	39799	35793	43425	22031	43425	0.0
Curlew ⁶	Intertidal & non-tidal	116.0	29	0.25	13	0.11	1884	1733	3009	1703	3009	1.0
Black-tailed godwit ⁶⁷⁸	Intertidal & non-tidal	116.0	32	0.28	8	0.07	4678	1569	633	1275	4678	0.7
Dunlin ⁶⁷	Intertidal	116.0	30	0.26	8	0.06	13458	6286	17528	12995	17528	0.2
Redshank ⁶⁷	Intertidal & non-tidal	116.0	500	4.31	188	1.62	3732	4498	3658	4375	4498	11.1
Great black-backed gull	All habitats	142.0	1	0.01	0	0.00	113	131	71	275	275	0.4
Herring gull	All habitats	142.0	6	0.04	2	0.01	4152	6566	5640	14909	14909	0.0
Lesser black-backed gull	All habitats	142.0	7	0.05	2	0.01	172	95	97	181	181	3.9

Table D 5: BTO WeBS Low Tide Data for Sector DD039 (2021-22)

Species	Preferred Habitat	Area of Preferred Habitat	Peak Count	Peak Density	Mean Count	Mean Density	Raw Monthly Whole Site NOV	Raw Monthly Whole Site DEC	Raw Monthly Whole Site JAN	Raw Monthly Whole Site FEB	Raw Monthly Whole Site WINTER MAXIMUM	% of whole site population
Canada Goose	All habitats	61.0	150	2.46	68	1.11	4888	3866	3081	1576	4888	3.1
Pink-footed Goose	All habitats	61.0	1000	16.39	272	4.46	6126	5038	6521	11248	11248	8.9
Mute Swan	Sub-tidal	7.0	21	3.00	8	1.14	39	26	36	43	43	48.8
Shelduck ⁶⁷	All habitats	61.0	80	1.31	38	0.63	2453	1929	962	983	2453	3.3
Wigeon ⁷	All habitats	61.0	710	11.64	338	5.54	9063	6521	3725	2831	9063	7.8
Mallard	All habitats	61.0	90	1.48	37	0.60	616	454	483	465	616	14.6
Pintail ⁶⁷	All habitats	61.0	16	0.26	4	0.07	6361	912	390	1035	6361	0.3
Teal ⁶⁷	All habitats	61.0	237	3.89	102	1.68	2779	3005	2301	2103	3005	7.9
Grey Heron	Intertidal & non-tidal	54.0	4	0.07	2	0.04	54	65	58	53	65	6.2
Great White Egret	Intertidal & non-tidal	54.0	1	0.02	0	0.00	15	14	13	12	15	6.7
Little Egret	Intertidal & non-tidal	54.0	2	0.04	1	0.01	177	79	60	64	177	1.1
Cormorant ⁸	All habitats	61.0	11	0.18	6	0.10	981	431	964	429	981	1.1
Oystercatcher ⁶	Intertidal	54.0	37	0.69	12	0.22	39799	35793	43425	22031	43425	0.1
Avocet	Intertidal	54.0	1	0.02	1	0.01	1	1	0	2	2	50.0
Lapwing ⁷	Intertidal & non-tidal	54.0	800	14.81	614	11.37	6636	4974	6746	5648	6746	11.9
Grey plover ⁶⁷	Intertidal	54.0	3	0.06	1	0.01	375	196	283	345	375	0.8
Curlew ⁶	Intertidal & non-tidal	54.0	29	0.54	16	0.30	1884	1733	3009	1703	3009	1.0
Black-tailed Godwit ⁶⁷⁸	Intertidal & non-tidal	54.0	2500	46.30	882	16.34	4678	1569	633	1275	4678	53.4
Dunlin ⁶⁷	Intertidal	54.0	400	7.41	228	4.22	13458	6286	17528	12995	17528	2.3
Redshank ⁶⁷	Intertidal & non-tidal	54.0	200	3.70	95	1.76	3732	4498	3658	4375	4498	4.4
Spotted Redshank	Intertidal & non-tidal	54.0	3	0.06	1	0.01	6	5	5	1	6	50.0
Greenshank	Intertidal & non-tidal	54.0	2	0.04	1	0.01	6	10	8	4	10	20.0

Species	Preferred Habitat	Area of Preferred Habitat	Peak Count	Peak Density	Mean Count	Mean Density	Raw Monthly Whole Site NOV	Raw Monthly Whole Site DEC	Raw Monthly Whole Site JAN	Raw Monthly Whole Site FEB	Raw Monthly Whole Site WINTER MAXIMUM	% of whole site population
Black-headed gull	All habitats	61.0	600	9.84	316	5.17	2323	3250	3431	2685	3431	17.5
Common gull	All habitats	61.0	6	0.10	2	0.02	990	1667	1290	331	1667	0.4
Great black-backed gull	All habitats	61.0	8	0.13	3	0.04	113	131	71	275	275	2.9
Herring gull	All habitats	61.0	8	0.13	2	0.03	4152	6566	5640	14909	14909	0.1
Lesser Black-backed Gull	All habitats	61.0	70	1.15	40	0.66	172	95	97	181	181	38.7

Table D 6: BTO WeBS Low Tide Data for Sector DD050 (2021-22)

Species	Preferred Habitat	Area of Preferred Habitat	Peak Count	Peak Density	Mean Count	Mean Density	Raw Monthly Whole Site NOV	Raw Monthly Whole Site DEC	Raw Monthly Whole Site JAN	Raw Monthly Whole Site FEB	Raw Monthly Whole Site WINTER MAXIMUM	% of whole site population
Canada Goose	All habitats	51.0	290	5.69	107	2.09	4888	3866	3081	1576	4888	5.9
Pink-footed Goose	All habitats	51.0	10	0.20	3	0.05	6126	5038	6521	11248	11248	0.1
Shelduck ⁶⁷	All habitats	51.0	11	0.22	3	0.05	2453	1929	962	983	2453	0.4
Mallard	All habitats	51.0	8	0.16	2	0.04	616	454	483	465	616	1.3

Table D 7: BTO WeBS Low Tide Data for Sector DD051 (2021-22)

Species	Preferred Habitat	Area of Preferred Habitat	Peak Count	Peak Density	Mean Count	Mean Density	Raw Monthly Whole Site NOV	Raw Monthly Whole Site DEC	Raw Monthly Whole Site JAN	Raw Monthly Whole Site FEB	Raw Monthly Whole Site WINTER MAXIMUM	% of whole site population
Canada Goose	All habitats	39.0	140	3.59	35	0.90	4888	3866	3081	1576	4888	2.9
Mute Swan	Sub-tidal	0.1	22	220.00	8	82.50	39	26	36	43	43	51.2
Shelduck ⁶⁷	All habitats	39.0	20	0.51	12	0.30	2453	1929	962	983	2453	0.8
Shoveler	All habitats	39.0	25	0.64	19	0.48	170	218	224	208	224	11.2
Gadwall	All habitats	39.0	7	0.18	4	0.09	54	49	82	72	82	8.5
Wigeon ⁷	All habitats	39.0	550	14.10	175	4.47	9063	6521	3725	2831	9063	6.1
Mallard	All habitats	39.0	18	0.46	12	0.31	616	454	483	465	616	2.9
Teal ⁶⁷	All habitats	39.0	90	2.31	53	1.35	2779	3005	2301	2103	3005	3.0
Tufted Duck	Sub-tidal	0.1	18	180.00	8	77.50	42	52	67	42	67	26.9
Little Grebe	Sub-tidal	0.1	11	110.00	6	55.00	19	24	12	15	24	45.8
Grey Heron	Intertidal & non-tidal	39.0	11	0.28	6	0.16	54	65	58	53	65	16.9
Little Egret	Intertidal & non-tidal	39.0	2	0.05	2	0.04	177	79	60	64	177	1.1
Moorhen	All habitats	39.0	20	0.51	12	0.29	54	63	59	58	63	31.7
Coot	Sub-tidal	0.1	32	320.00	19	192.50	85	58	63	69	85	37.6
Oystercatcher ⁶	Intertidal	0.1	2	20.00	1	5.00	39799	35793	43425	22031	43425	0.0
Lapwing ⁷	Intertidal & non-tidal	39.0	4	0.10	1	0.03	6636	4974	6746	5648	6746	0.1
Curlew ⁶	Intertidal & non-tidal	39.0	88	2.26	43	1.10	1884	1733	3009	1703	3009	2.9
Black-tailed Godwit ⁶⁷⁸	Intertidal & non-tidal	39.0	2	0.05	1	0.01	4678	1569	633	1275	4678	0.0
Snipe	Non-tidal	39.0	21	0.54	11	0.27	39	44	87	6	87	24.1
Common sandpiper	Intertidal & non-tidal	39.0	1	0.03	1	0.01	0	2	0	1	2	50.0
Redshank ⁶⁷	Intertidal & non-tidal	39.0	12	0.31	8	0.20	3732	4498	3658	4375	4498	0.3
Greenshank	Intertidal & non-tidal	39.0	1	0.03	1	0.02	6	10	8	4	10	10.0
Black-headed gull	All habitats	39.0	4	0.10	1	0.03	2323	3250	3431	2685	3431	0.1

Species	Preferred Habitat	Area of Preferred Habitat	Peak Count	Peak Density	Mean Count	Mean Density	Raw Monthly Whole Site NOV	Raw Monthly Whole Site DEC	Raw Monthly Whole Site JAN	Raw Monthly Whole Site FEB	Raw Monthly Whole Site WINTER MAXIMUM	% of whole site population
Great black-backed gull	All habitats	39.0	1	0.03	0	0.01	113	131	71	275	275	0.4
Lesser Black-backed Gull	All habitats	39.0	2	0.05	1	0.01	172	95	97	181	181	1.1
Kingfisher	All habitats	39.0	2	0.05	1	0.02	1	2	0	1	2	100.0

Table D 8: BTO WeBS Low Tide Data for Sector DD052 (2021-22)

Species	Preferred Habitat	Area of Preferred Habitat	Peak Count	Peak Density	Mean Count	Mean Density	Raw Monthly Whole Site NOV	Raw Monthly Whole Site DEC	Raw Monthly Whole Site JAN	Raw Monthly Whole Site FEB	Raw Monthly Whole Site WINTER MAXIMUM	% of whole site population
Canada Goose	All habitats	50.0	30	0.60	8	0.15	4888	3866	3081	1576	4888	0.6
Whooper Swan	All habitats	50.0	3	0.06	1	0.02	3	21	43	32	43	7.0
Shelduck ⁶⁷	All habitats	50.0	11	0.22	3	0.06	2453	1929	962	983	2453	0.4
Wigeon ⁷	All habitats	50.0	80	1.60	35	0.71	9063	6521	3725	2831	9063	0.9
Mallard	All habitats	50.0	30	0.60	19	0.38	616	454	483	465	616	4.9
Teal ⁶⁷	All habitats	50.0	20	0.40	15	0.30	2779	3005	2301	2103	3005	0.7
Goosander	Sub-tidal	18.0	1	0.06	1	0.03	0	0	1	9	9	11.1
Grey Heron	Intertidal & non-tidal	32.0	2	0.06	1	0.04	54	65	58	53	65	3.1
Little Egret	Intertidal & non-tidal	32.0	3	0.09	2	0.06	177	79	60	64	177	1.7
Cormorant ⁸	All habitats	50.0	15	0.30	9	0.18	981	431	964	429	981	1.5
Lapwing ⁷	Intertidal & non-tidal	32.0	30	0.94	8	0.23	6636	4974	6746	5648	6746	0.4
Curlew ⁶	Intertidal & non-tidal	32.0	5	0.16	3	0.08	1884	1733	3009	1703	3009	0.2
Dunlin ⁶⁷	Intertidal	21.0	21	1.00	5	0.25	13458	6286	17528	12995	17528	0.1
Redshank ⁶⁷	Intertidal & non-tidal	32.0	100	3.13	41	1.29	3732	4498	3658	4375	4498	2.2
Greenshank	Intertidal & non-tidal	32.0	7	0.22	3	0.10	6	10	8	4	10	70.0
Black-headed gull	All habitats	50.0	21	0.42	5	0.11	2323	3250	3431	2685	3431	0.6
Great black-backed gull	All habitats	50.0	3	0.06	1	0.03	113	131	71	275	275	1.1

Annex E: British Trust for Ornithology Core Count Data

Table E 1: BTO WeBS Core Count Five-Year (2018-23) Summary for Sector 69426, Deeside Naturalists' Reserve

Species	Autumn peak of National Threshold (%)	Winter peak of National Threshold (%)	Spring peak of National Threshold (%)	Annual peak of National Threshold (%)	Autumn peak of International Threshold (%)	Winter peak of International Threshold (%)	Spring peak of International Threshold (%)	Annual peak of International Threshold (%)	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks	Dee Estuary/Mersey Estuary Peak Mean Population	SPA/Ramsar site 1% Threshold
Avocet	0	0	10	22	0	0	1	2	0	0	3	4	N/A	N/A
Barnacle Goose	0	0	1	1	0	0	0	0	0	0	1	1	N/A	N/A
Black-headed Gull	0	1	2	2	0	1	2	2	3	30	104	106	N/A	N/A
Black-tailed Godwit	256	0	282	308	91	0	100	109	358	0	232	741	N/A	N/A
Canada Goose	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	110	125	107	226	N/A	N/A
Common Gull	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A
Common Sandpiper	100	100	400	400	0	0	0	0	1	0	1	2	N/A	N/A
Common Tern	N/A	N/A	N/A	N/A	0	0	1	2	0	0	4	6	392	4
Coot	3	1	1	3	0	0	0	0	24	19	19	33	N/A	N/A
Cormorant	1	2	1	4	1	1	0	2	2	3	1	9	N/A	N/A
Curlew	6	9	10	10	1	1	2	2	51	74	36	91	3899	39
Curlew Sandpiper	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	N/A	N/A
Dunlin	1	0	0	2	0	0	0	0	10	0	0	24	27769	278
Egyptian Goose	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	N/A	N/A
Gadwall	2	3	5	5	1	1	1	1	2	4	7	8	N/A	N/A
Goldeneye	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A

Species	Autumn peak of National Threshold (%)	Winter peak of National Threshold (%)	Spring peak of National Threshold (%)	Annual peak of National Threshold (%)	Autumn peak of International Threshold (%)	Winter peak of International Threshold (%)	Spring peak of International Threshold (%)	Annual peak of International Threshold (%)	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks	Dee Estuary/Mersey Estuary Peak Mean Population	SPA/Ramsar site 1% Threshold
Goosander	1	3	0	3	0	0	0	0	1	1	0	1	N/A	N/A
Great Black-backed Gull	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A
Great Crested Grebe	2	0	0	2	0	0	0	0	1	0	0	1	136	1
Great White Egret	200	0	300	300	0	0	0	0	1	0	1	2	N/A	N/A
Green Sandpiper	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A
Greenshank	513	113	125	513	1	0	0	1	22	6	6	20	N/A	N/A
Grey Heron	1	2	1	2	0	0	0	0	3	6	3	6	N/A	N/A
Greylag Goose (British/Irish)	0	0	0	1	N/A	N/A	N/A	N/A	0	1	2	4	N/A	N/A
Herring Gull	0	0	0	2	0	0	0	1	0	1	0	26	N/A	N/A
Jack Snipe	0	0	0	0	0	0	0	0	0	1	0	1	N/A	N/A
Kingfisher	N/A	N/A	N/A	N/A	0	0	0	0	1	1	0	1	N/A	N/A
Knot	2	0	4	4	1	0	2	2	11	0	19	26	12394	124
Lapwing	6	3	0	6	2	1	0	2	158	67	0	166	10544	105
Lesser Black-backed Gull	1	0	0	3	0	0	0	1	3	0	1	8	N/A	N/A
Little Egret	28	4	8	28	3	0	1	3	18	2	4	20	N/A	N/A

Species	Autumn peak of National Threshold (%)	Winter peak of National Threshold (%)	Spring peak of National Threshold (%)	Annual peak of National Threshold (%)	Autumn peak of International Threshold (%)	Winter peak of International Threshold (%)	Spring peak of International Threshold (%)	Annual peak of International Threshold (%)	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks	Dee Estuary/Mersey Estuary Peak Mean Population	SPA/Ramsar site 1% Threshold
Little Grebe	10	6	4	10	0	0	0	0	12	6	4	11	N/A	N/A
Little Gull	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	N/A	N/A
Little Ringed Plover	N/A	N/A	N/A	N/A	0	0	0	0	0	0	1	1	N/A	N/A
Mallard	2	2	2	8	1	1	1	3	105	39	53	247	N/A	N/A
Mediterranean Gull	0	0	0	5	0	0	0	0	0	0	0	0	N/A	N/A
Moorhen	0	0	0	0	0	0	0	0	9	9	10	12	N/A	N/A
Mute Swan	0	5	6	6	0	5	6	6	0	9	12	13	N/A	N/A
Oystercatcher	0	0	0	0	0	0	0	0	0	1	4	4	22677	227
Pink-footed Goose	39	0	0	39	37	0	0	37	400	0	0	333	N/A	N/A
Pintail	20	1	1	20	7	0	0	7	11	0	0	9	5407	54
Redshank	319	17	7	319	125	7	3	125	1540	45	34	1824	5293	53
Ruff	22	0	0	22	0	0	0	0	0	0	0	1	N/A	N/A
Shelduck	1	2	13	13	0	0	3	3	1	5	33	33	7725	77
Shoveler	5	45	21	45	1	13	6	13	6	25	10	27	N/A	N/A
Snipe	1	0	0	1	0	0	0	0	29	14	7	29	N/A	N/A
Spoonbill	0	0	0	100	0	0	0	1	0	0	0	0	N/A	N/A
Spotted Redshank	2400	700	400	2400	2	1	0	2	15	1	1	14	N/A	N/A
Teal	48	4	3	48	41	4	3	41	778	90	53	687	5251	53
Tufted Duck	0	2	2	2	0	0	0	0	2	7	12	15	N/A	N/A
Turnstone	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A

Species	Autumn peak of National Threshold (%)	Winter peak of National Threshold (%)	Spring peak of National Threshold (%)	Annual peak of National Threshold (%)	Autumn peak of International Threshold (%)	Winter peak of International Threshold (%)	Spring peak of International Threshold (%)	Annual peak of International Threshold (%)	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks	Dee Estuary/Mersey Estuary Peak Mean Population	SPA/Ramsar site 1% Threshold
Water Rail	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	N/A	N/A
Whimbrel	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A
Whooper Swan	0	6	16	16	0	3	8	8	0	2	5	6	N/A	N/A
Wigeon	4	9	2	9	1	3	1	3	93	178	60	185	11886	119

Table E 2: BTO WeBS Core Count Five-Year (2018-23) Summary for Sector 69427, White Sands

Species	Autumn peak of National Threshold (%)	Winter peak of National Threshold (%)	Spring peak of National Threshold (%)	Annual peak of National Threshold (%)	Autumn peak of International Threshold (%)	Winter peak of International Threshold (%)	Spring peak of International Threshold (%)	Annual peak of International Threshold (%)	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks	Dee Estuary/Mersey Estuary Peak Mean Population	SPA/Ramsar site 1% Threshold
Avocet	0	0	0	15	0	0	0	1	0	0	0	2	N/A	N/A
Bewick's Swan	0	5	0	5	0	1	0	1	0	0	0	0	N/A	N/A
Black Swan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0.4	0	N/A	N/A
Black-headed Gull	3	2	1	9	4	2	1	10	338	140	136.4	802	N/A	N/A
Black-tailed Godwit	38	1	0	38	13	0	0	13	42	1	0	36	1747	17
Canada Goose	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	566	396	27.4	758	N/A	N/A
Common Gull	0	0	0	0	0	0	0	0	0	0	0.4	1	N/A	N/A
Coot	0	0	0	0	0	0	0	0	1	0	1.6	1	N/A	N/A
Cormorant	0	0	0	1	0	0	0	1	1	0	0	2	N/A	N/A
Curlew	3	1	0	5	0	0	0	1	20	8	1.6	24	3899	39
Curlew Sandpiper	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	N/A	N/A
Dunlin	15	5	0	15	4	1	0	4	102	34	0	113	27769	278
Egyptian Goose	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0.4	0	N/A	N/A
Gadwall	9	8	3	9	2	2	1	2	7	4	2.4	6	N/A	N/A
Great Black-backed Gull	1	1	1	2	0	0	0	0	5	3	3.8	10	N/A	N/A
Great Crested Grebe	1	0	0	1	0	0	0	0	1	0	0	1	136	1

Species	Autumn peak of National Threshold (%)	Winter peak of National Threshold (%)	Spring peak of National Threshold (%)	Annual peak of National Threshold (%)	Autumn peak of International Threshold (%)	Winter peak of International Threshold (%)	Spring peak of International Threshold (%)	Annual peak of International Threshold (%)	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks	Dee Estuary/Mersey Estuary Peak Mean Population	SPA/Ramsar site 1% Threshold
Great White Egret	700	200	200	700	1	0	0	1	3	2	1	4	N/A	N/A
Green Sandpiper	0	0	0	33	0	0	0	0	0	0	0	0	N/A	N/A
Greenshank	38	13	0	38	0	0	0	0	1	0	0	1	N/A	N/A
Grey Heron	2	1	1	2	0	0	0	0	5	1	1.4	5	N/A	N/A
Greylag Goose (British/Irish)	N/A	N/A	N/A	N/A	0	0	0	1	1	0	1.4	4	N/A	N/A
Herring Gull	0	0	0	1	0	0	0	1	2	1	2	20	N/A	N/A
Lapwing	2	7	0	7	1	2	0	2	79	75	0.4	122	10544	105
Lesser Black-backed Gull	2	0	1	10	0	0	0	2	14	2	6.8	52	N/A	N/A
Little Egret	22	12	7	22	2	1	1	2	17	5	2.8	17	N/A	N/A
Little Grebe	1	1	1	1	0	0	0	0	0	0	0.2	1	N/A	N/A
Mallard	1	0	1	1	0	0	0	0	20	5	20.6	36	N/A	N/A
Moorhen	0	0	0	0	0	0	0	0	0	0	0	1	N/A	N/A
Mute Swan	6	7	6	7	6	7	6	7	15	19	10	24	N/A	N/A
Oystercatcher	86	1	0	86	30	0	0	30	941	16	5.6	797	22677	227
Pink-footed Goose	10	67	157	157	9	63	148	148	114	1983	4500	4233	N/A	N/A
Pintail	8	16	91	91	3	5	30	30	5	6	66.8	58	5407	54

Species	Autumn peak of National Threshold (%)	Winter peak of National Threshold (%)	Spring peak of National Threshold (%)	Annual peak of National Threshold (%)	Autumn peak of International Threshold (%)	Winter peak of International Threshold (%)	Spring peak of International Threshold (%)	Annual peak of International Threshold (%)	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks	Dee Estuary/Mersey Estuary Peak Mean Population	SPA/Ramsar site 1% Threshold
Redshank	13	18	12	18	5	7	5	7	72	66	46.6	97	5293	53
Ruddy Shelduck	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	N/A	N/A
Shelduck	21	18	25	106	4	3	5	20	45	41	60.4	264	7725	77
Shoveler	7	1	1	7	2	0	0	2	3	0	0.4	3	N/A	N/A
Snipe	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A
Teal	6	2	1	6	5	2	1	5	109	31	26	102	5251	53
Tufted Duck	0	0	0	0	0	0	0	0	0	0	0.2	0	N/A	N/A
Whooper Swan	12	19	16	19	6	9	7	9	8	12	12.2	16	N/A	N/A
Wigeon	20	4	3	20	6	1	1	6	294	88	46.2	324	11886	119

Table E 3: BTO WeBS Core Count Five-Year (2018-23) Summary for Sector 69459, Oakenholt Marsh

Species	Autumn peak of National Threshold (%)	Winter peak of National Threshold (%)	Spring peak of National Threshold (%)	Annual peak of National Threshold (%)	Autumn peak of International Threshold (%)	Winter peak of International Threshold (%)	Spring peak of International Threshold (%)	Annual peak of International Threshold (%)	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks	Dee Estuary/Mersey Estuary Peak Mean Population	SPA/Ramsar site 1% Threshold
Avocet	3	3	5	7	0	0	0	1	1	1	1	3	N/A	N/A
Barnacle Goose	0	0	1	1	0	0	0	0	0	1	1	1	N/A	N/A
Bar-tailed Godwit	2	1	4	4	1	0	1	1	3	2	5	8	1150	12
Black-headed Gull	4	2	1	5	5	3	1	6	555	165	81	886	N/A	N/A
Black-tailed Godwit	667	282	256	667	2364	1000	909	2364	1700	557	312	1583	1747	17
Canada Goose	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	330	1117	85	1117	N/A	N/A
Common Gull	1	0	0	1	0	0	0	0	9	9	11	18	N/A	N/A
Common Sandpiper	100	100	100	400	0	0	0	0	0	0	1	2	N/A	N/A
Common Tern	N/A	N/A	N/A	N/A	0	0	3	4	0	0	21	38	392	4
Coot	3	1	0	3	0	0	0	0	10	6	2	14	N/A	N/A
Cormorant	9	6	8	9	5	3	4	5	28	23	24	32	N/A	N/A
Curlew	5	3	4	5	1	0	1	1	40	27	31	44	3899	39
Curlew Sandpiper	N/A	N/A	N/A	N/A	0	0	0	0	1	0	0	1	N/A	N/A
Dunlin	60	72	18	72	15	18	5	18	1474	1308	146	1950	27769	278
Egyptian Goose	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	N/A	N/A
Eider (except Shetland)	0	0	1	1	0	0	0	0	0	0	1	1	N/A	N/A

Species	Autumn peak of National Threshold (%)	Winter peak of National Threshold (%)	Spring peak of National Threshold (%)	Annual peak of National Threshold (%)	Autumn peak of International Threshold (%)	Winter peak of International Threshold (%)	Spring peak of International Threshold (%)	Annual peak of International Threshold (%)	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks	Dee Estuary/Mersey Estuary Peak Mean Population	SPA/Ramsar site 1% Threshold
Golden Plover	0	1	0	1	0	0	0	0	3	6	0	7	3040	30
Goosander	1	1	1	1	0	0	0	0	0	1	0	1	N/A	N/A
Great Black-backed Gull	2	1	1	2	0	0	0	0	8	3	4	7	N/A	N/A
Great Crested Grebe	7	4	4	7	0	0	0	0	7	2	4	7	136	1
Great White Egret	400	100	100	2100	1	0	0	3	2	0	0	5	N/A	N/A
Greenshank	13	13	0	13	0	0	0	0	1	0	0	1	N/A	N/A
Grey Heron	2	1	0	2	0	0	0	0	7	3	1	7	N/A	N/A
Grey Plover	3	2	1	3	0	0	0	0	2	2	1	4	1643	16
Greylag Goose (British/Irish)	N/A	N/A	N/A	N/A	0	1	0	1	2	6	0	6	N/A	N/A
Herring Gull	0	0	0	1	0	0	0	1	15	12	10	30	N/A	N/A
Kingfisher	N/A	N/A	N/A	N/A	0	0	0	0	1	0	0	1	N/A	N/A
Knot	39	2	1	39	19	1	1	19	291	18	10	246	12394	124
Lapwing	16	19	0	19	5	6	0	6	448	792	0	917	10544	105
Lesser Black-backed Gull	88	12	5	88	19	3	1	19	286	52	30	312	N/A	N/A
Little Egret	21	2	5	55	2	0	1	5	13	2	2	28	N/A	N/A

Species	Autumn peak of National Threshold (%)	Winter peak of National Threshold (%)	Spring peak of National Threshold (%)	Annual peak of National Threshold (%)	Autumn peak of International Threshold (%)	Winter peak of International Threshold (%)	Spring peak of International Threshold (%)	Annual peak of International Threshold (%)	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks	Dee Estuary/Mersey Estuary Peak Mean Population	SPA/Ramsar site 1% Threshold
Little Grebe	1	3	0	3	0	0	0	0	0	2	0	2	N/A	N/A
Mallard	2	4	1	7	1	2	0	2	69	75	19	161	N/A	N/A
Mediterranean Gull	0	3	0	3	0	0	0	0	0	0	0	1	N/A	N/A
Moorhen	0	0	0	0	0	0	0	0	3	5	1	5	N/A	N/A
Mute Swan	1	3	3	3	1	3	3	3	2	4	9	9	N/A	N/A
Oystercatcher	103	5	3	103	37	2	1	37	966	85	48	857	22677	227
Pink-footed Goose	0	118	28	118	0	111	26	111	0	1745	337	1970	N/A	N/A
Pintail	500	400	35	500	167	133	12	167	302	171	38	305	5407	54
Pochard	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A
Red-breasted Merganser	0	0	5	5	0	0	1	1	0	0	1	1	N/A	N/A
Redshank	319	32	28	319	125	12	11	125	1320	128	127	1177	5293	53
Ringed Plover	3	2	1	6	2	1	1	5	4	1	1	9	505	5
Ruff	11	0	0	11	0	0	0	0	0	0	0	0	N/A	N/A
Sandwich Tern	0	0	0	300	0	0	0	0	0	0	0	1	957	10
Shelduck	32	17	27	170	6	3	5	32	79	46	81	354	7725	77
Snipe	0	0	0	0	0	0	0	0	0	0	0	0	N/A	N/A
Spoonbill	100	0	0	300	1	0	0	2	0	0	0	1	N/A	N/A
Spotted Redshank	1000	700	0	1000	1	1	0	1	6	4	0	7	N/A	N/A
Teal	93	23	4	93	80	20	3	80	1586	408	80	1450	5251	53

Species	Autumn peak of National Threshold (%)	Winter peak of National Threshold (%)	Spring peak of National Threshold (%)	Annual peak of National Threshold (%)	Autumn peak of International Threshold (%)	Winter peak of International Threshold (%)	Spring peak of International Threshold (%)	Annual peak of International Threshold (%)	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks	Dee Estuary/Mersey Estuary Peak Mean Population	SPA/Ramsar site 1% Threshold
Tufted Duck	0	0	0	0	0	0	0	0	0	1	0	1	N/A	N/A
Turnstone	0	0	0	1	0	0	0	0	0	0	0	1	N/A	N/A
Whimbrel	0	0	800	900	0	0	0	0	0	0	3	5	N/A	N/A
Whooper Swan	0	1	1	1	0	1	0	1	0	0	0	1	N/A	N/A
Wigeon	67	44	4	67	21	14	1	21	926	681	132	1227	11886	119
Yellow-legged Gull	25	0	0	25	0	0	0	0	1	0	0	1	N/A	N/A

Annex F: Summary Wetland Bird Count Data

F.1.1. For all tables, peak counts are in bold, and figures in italic font denote where 1% of the SPA qualifying population is equalled or exceeded. Where surveys were not counting for a specific species (due to seasonal presence), this is denoted (-) and these months are not included in the calculated mean.

Diurnal High Tide Surveys

Table F 1: Summary Count Data for Diurnal High Tide Surveys in Count Sector 69426

Species	Nov-2023	Dec-2023	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Mean	Peak Count % of SPA population
Avocet	0	1	0	0	8	0	0	6	1	0	0	2	1.50	
Black-headed Gull	0	0	0	4	23	27	4	6	5	0	0	0	5.75	
Black-tailed Godwit ^{6 7 8}	0	0	0	0	24	0	0	157	37	0	3	2	18.58	8.99
Buzzard	0	0	1	0	0	0	0	0	0	0	0	0	0.08	
Canada Goose	1	0	400	76	75	16	11	6	13	12	0	0	50.83	
Coot	3	11	0	6	0	2	2	4	6	6	1	0	3.42	
Common Sandpiper	1	1	0	0	0	0	0	0	0	0	0	0	0.17	
Curlew ⁶	19	67	107	26	18	17	0	0	0	0	0	7	21.75	2.74
Dunlin ^{6 7}	2	0	220	0	0	0	0	0	0	0	0	0	18.50	0.79
Spotted Redshank	0	1	1	0	0	0	0	0	0	2	0	10	1.17	
Little Egret	0	0	1	1	6	11	2	2	2	3	4	1	2.75	
Gadwall	0	0	0	0	9	2	0	2	0	0	0	0	1.08	
Great Black-backed Gull	0	0	0	0	0	0	0	0	0	0	0	1	0.08	
Greenshank	4	0	2	2	2	0	0	0	0	0	7	15	2.67	
Grey Heron	0	1	4	1	2	3	1	4	5	14	0	0	2.92	
Herring Gull	0	0	0	0	0	2	0	0	0	0	0	0	0.17	
Lapwing ⁷	28	0	22	0	0	0	0	8	0	0	16	2	6.33	0.27
Lesser Black-backed Gull	0	0	0	0	0	2	1	0	0	0	0	0	0.25	
Little Grebe	3	1	1	0	4	0	0	2	6	5	2	2	2.17	
Mallard	11	12	4	13	0	0	6	49	63	37	0	4	16.58	
Moorhen	5	0	0	0	0	0	0	0	0	0	0	0	0.42	
Mute Swan	4	0	0	0	14	7	19	0	0	0	0	0	3.67	
Oystercatcher ⁶	0	0	47	2	7	2	1	2	3	0	4	0	5.67	0.21
Redshank ^{6 7}	14	24	5	26	44	180	0	3	1070	460	400	500	227.17	20.22

Species	Nov-2023	Dec-2023	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Mean	Peak Count % of SPA population
Snipe	3	3	0	0	0	0	0	0	0	0	0	0	0.50	
Shelduck ⁶ ⁷	0	2	4	0	0	5	2	0	0	0	0	0	1.08	0.06
Shoveler	9	0	5	0	4	2	0	0	0	0	0	0	1.67	
Teal ⁷	25	18	58	28	22	26	0	0	0	0	12	200	32.42	3.81
Tufted Duck	2	0	4	0	4	8	6	0	6	0	0	0	2.50	
Water Rail	0	0	1	0	0	0	0	0	0	0	0	0	0.08	
Woodcock	0	1	0	0	0	0	0	0	0	0	0	0	0.08	
Wigeon ⁷	262	560	250	28	4	0	2	0	0	0	0	0	92.17	4.71

Table F 2: Summary Count Data for Diurnal High Tide Surveys in Count Sector 69427

Species	Nov-2023	Dec-2023	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Mean	Peak Count % of SPA population
Canada Goose	0	0	300	0	0	0	0	0	0	0	0	0	50.00	
Curlew ⁶	0	1	0	0	0	0	0	0	0	0	0	0	0.17	0.03
Grey Heron	0	1	0	0	0	0	0	0	0	0	0	0	10.17	
Pink-footed goose	0	1000	0	0	0	0	0	-	-	-	0	0	222.22	

Table F 3: Summary Count Data for Diurnal High Tide Surveys in Count Sector 69459⁹

Species	Nov-2023	Dec-2023	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Mean	Peak Count % of SPA population
Avocet	0	0	0	0	0	0	0	0	47	1	0	0	4.00	
Bar-tailed Godwit ⁶	0	0	28	0	0	0	0	0	12	11	0	0	4.25	2.43
Black-headed Gull	0	0	0	42	0	0	5	121	255	420	4	43	74.17	
Black-tailed Godwit ^{6 7 8}	0	0	0	11	0	0	0	0	2000	2000	0	0	334.25	114.48
Cormorant	0	0	0	0	0	0	0	0	0	1	0	0	0.08	
Canada Goose	0	550	85	0	27	0	0	0	0	0	19	0	56.75	
Common Gull	0	0	0	0	4	0	0	0	0	0	0	0	0.33	
Common Sandpiper	0	0	0	0	0	0	0	0	1	0	0	0	0.08	
Curlew ⁶	2	3	2	5	1	0	0	3	0	7	0	0	1.92	0.18
Dunlin ^{6 7}	1200	2500	460	0	0	0	0	0	16	0	0	0	348.00	9.00
Spotted Redshank	1	0	0	0	0	0	0	0	0	0	0	0	0.08	
Little Egret	5	0	0	0	1	0	0	0	0	5	3	4	1.50	
Gadwall	3	0	0	7	0	0	0	0	0	0	0	0	0.083	
Great Black-backed Gull	0	0	0	0	0	0	0	0	0	1	0	0	0.08	
Grey Plover ^{6 7}	1	1	0	0	0	0	0	0	0	0	0	0	0.17	
Grey Heron	3	0	2	0	0	0	0	0	0	0	1	1	0.58	
Hudsonian Godwit	0	0	0	0	0	0	0	0	0	1	0	0	0.08	
Knot ⁶	0	0	0	34	0	0	0	0	0	32	0	0	5.50	0.27
Lapwing ⁷	0	118	1000	0	0	0	0	28	22	25	31	0	102.00	9.48
Lesser Black-backed Gull	0	0	0	0	0	0	0	12	0	0	1	2	1.25	
Mallard	2	18	0	0	0	0	0	0	0	12	0	14	3.83	
Mute Swan	0	11	5	2	2	1	0	0	0	0	0	0	1.75	
Oystercatcher ⁶	0	18	13	0	0	0	1	12	5	0	0	0	4.08	0.08
Pink-footed Goose	0	55	0	0	0	0	0	-	-	-	0	0	6.11	
Redshank ^{6 7}	40	38	21	53	0	0	0	0	18	15	0	16	16.75	1.00
Shelduck ^{6 7}	1	31	6	15	0	0	2	224	15	12	154	12	39.33	2.90
Shoveler	0	4	0	0	0	0	0	0	0	0	0	0	0.33	
Teal ⁷	15	85	41	57	0	0	0	0	0	0	0	53	20.92	1.62

⁹ The western part of Sector 69459 (Oakenholt Marsh) is excluded from the November 2023 to October 2024 Survey Area.

Species	Nov-2023	Dec-2023	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Mean	Peak Count % of SPA population
Wigeon ⁷	39	160	36	57	0	0	0	0	0	0	0	4	24.67	1.35

Diurnal Low Tide Surveys

Table F 4: Summary Count Data for Diurnal Low Tide Surveys in Count Sector DD033

Species	Nov-2023	Dec-2023	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Mean	Peak Count % of SPA population
Canada Goose	0	1000	0	0	0	0	0	0	0	0	0	0	83.33	
Great Crested Grebe ^{7 8}	0	0	0	0	0	0	0	0	0	0	1	0	0.08	0.74

Table F 5. Summary Count Data for Diurnal Low Tide Surveys in Count Sector DD038

Species	Nov-2023	Dec-2023	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Mean	Peak Count % of SPA population
Black-headed Gull	0	0	0	46	0	0	0	0	0	0	0	57	8.58	
Black-tailed Godwit ^{6 7 8}	0	0	0	0	0	0	81	0	0	0	3000	0	256.75	171.72
Pink-footed Goose	0	0	0	0	14	0	0	-	-	0	0	0	1.55	
Wigeon ⁷	0	0	0	0	14	0	0	0	0	0	0	0	1.17	0.12

Table F 6: Summary Count Data for Diurnal Low Tide Surveys in Count Sector DD039

Species	Nov-2023	Dec-2023	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Mean	Peak Count % of SPA population
Avocet	0	0	0	0	0	2	0	0	29	0	0	0	2.58	
Bar-tailed Godwit ⁶	0	2	0	0	4	0	13	16	12	0	0	0	3.92	1.39
Black-headed Gull	16	0	0	13	4	0	5	0	187	540	0	14	64.92	
Black-tailed Godwit ^{6 7 8}	44	0	0	23	133	2	4	0	400	146	0	19	64.25	22.90
Cormorant	0	1	0	0	0	0	1	0	0	2	6	12	1.83	
Canada Goose	64	400	2	0	0	0	0	0	26	0	0	0	41.00	
Common Gull	7	0	0	0	7	0	0	0	0	0	0	0	1.17	
Curlew ⁶	23	103	3	12	20	11	6	4	12	9	16	14	19.42	2.64
Dunlin ^{6 7}	100	1600	340	29	1	0	0	0	0	84	0	0	179.50	5.76
Little Egret	0	0	0	0	0	0	0	2	4	0	1	4	0.92	
Gadwall	0	0	0	0	0	0	0	4	0	0	0	0	0.33	
Great Black-backed Gull	1	0	0	0	1	0	0	0	0	0	0	1	0.25	
Greylag Goose	2	0	0	0	0	0	0	0	0	0	0	0	0.17	
Golden Plover ⁷	0	10	0	0	0	0	0	0	0	0	0	0	0.83	0.33
Grey Heron	0	0	1	0	0	0	0	0	0	0	3	1	0.42	
Herring Gull	4	0	0	14	0	0	0	0	1	2	0	0	1.75	
Knot ⁶	0	18	0	93	94	0	0	0	0	4	0	0	17.42	0.76
Lapwing ⁷	276	660	620	0	0	0	0	10	4	0	0	18	132.33	6.26
Lesser Black-backed Gull	18	0	0	18	1	0	1	4	3	13	28	7	7.75	
Mallard	0	0	0	0	0	0	0	37	12	12	0	0	5.08	
Marsh harrier	0	0	1	0	0	0	0	0	0	0	0	0	0.08	
Mediterranean Gull	0	0	0	0	0	0	0	0	53	0	0	0	4.42	
Oystercatcher ⁶	0	35	14	0	0	2	5	0	4	21	0	12	7.75	0.15
Pink-footed Goose	200	33	0	0	0	0	0	-	-	-	0	0	25.89	
Pintail ^{6 7}	0	0	0	12	34	0	0	0	0	0	0	0	3.83	0.63
Redshank ^{6 7}	23	79	80	0	9	0	0	0	0	0	0	69	21.67	1.51
Red-breasted Merganser	2	0	0	0	0	0	0	0	0	0	0	0	0.17	
Shelduck ^{6 7}	0	194	16	27	22	23	23	173	24	4	38	34	48.17	2.51
Teal ^{6 7}	4	155	67	0	0	0	0	0	0	34	54	54	30.67	2.95
Wigeon ⁷	30	0	0	92	73	0	0	0	0	0	0	43	19.83	0.77

Table F 7: Summary Count Data for Diurnal Low Tide Surveys in Count Sector DD050¹⁰

Species	Nov-2023	Dec-2023	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Mean	Peak Count % of SPA population
Canada Goose	0	0	1000	0	0	0	0	0	0	0	0	0	83.33	
Grey Heron	0	1	0	0	0	0	0	0	0	0	0	0	0.08	
Kingfisher	0	0	0	1	0	0	0	0	0	0	0	0	0.08	
Marsh harrier	0	1	0	0	0	0	0	0	0	0	0	0	0.08	
Mute Swan	0	0	0	2	0	0	0	0	0	0	0	0	0.17	
Pink-footed Goose	0	0	74	0	0	0	0	0	0	0	0	0	6.17	
Redshank ^{6 7}	0	0	0	27	0	0	0	0	0	0	0	0	2.25	0.51
Shelduck ^{6 7}	0	0	0	0	34	0	0	0	0	0	0	0	2.83	0.44
Teal ^{6 7}	0	35	0	24	0	0	0	0	0	0	0	0	4.92	0.67

¹⁰ The western part of Sector DD050 (Oakenholt Marsh) is excluded from the November 2023 to October 2024 Survey Area.

Table F 8: Summary Count Data for Diurnal Low Tide Surveys in Count Sector DD051

Species	Nov-2023	Dec-2023	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Mean	Peak Count % of SPA population
Avocet	0	0	0	0	0	0	0	2	0	0	0	0	0.17	
Black-headed Gull	0	0	0	0	48	16	1	14	1	0	0	0	6.67	
Black-tailed Godwit ^{6 7 8}	44	0	0	15	0	0	0	184	3	0	0	0	20.50	10.53
Barnacle goose	0	0	0	0	1	0	0	0	0	0	0	0	0.08	
Buzzard	0	0	1	0	0	0	0	0	0	0	0	0	0.08	
Canada Goose	12	0	0	13	53	16	2	21	3	63	0	0	15.25	
Coot	4	2	0	3	4	2	2	12	15	16	0	4	5.33	
Curlew ⁶	38	192	104	42	0	0	0	0	0	0	12	9	33.08	4.92
Little Egret	0	0	0	0	0	0	0	0	1	0	0	0	0.08	
Gadwall	0	5	8	2	4	0	0	0	0	0	0	0	1.58	
Great Black-backed Gull	0	0	0	1	0	0	0	0	0	0	0	0	0.08	
Greylag Goose	0	0	0	0	0	0	0	1	0	0	0	0	0.08	
Goldeneye	1	0	0	0	0	0	0	0	0	0	0	0	0.08	
Grey Heron	4	1	2	1	0	0	0	0	1	0	0	0	0.75	
Lapwing ⁷	0	6	0	0	0	0	0	0	7	0	10	0	1.92	0.09
Little Grebe	0	3	2	0	0	2	2	12	5	4	0	0	2.50	
Mallard	11	6	15	0	0	2	39	67	124	102	0	2	30.67	
Moorhen	3	0	0	1	0	0	0	0	0	0	0	2	0.50	
Mute Swan	0	16	21	0	0	0	2	0	0	0	0	0	3.25	
Oystercatcher ⁶	0	0	6	2	0	2	0	0	1	0	18	0	2.42	0.08
Peregrine	0	0	1	0	0	0	0	0	0	0	0	0	0.08	
Redshank ^{6 7}	0	5	1	2	0	0	0	0	0	0	0	0	0.67	0.09
Reed Warbler	0	0	0	0	0	0	1	0	0	0	0	0	0.08	
Shelduck ^{6 7}	3	2	5	21	4	6	11	0	0	0	0	0	4.33	0.27
Shoveler	6	8	0	5	16	4	0	0	0	0	0	0	3.25	
Teal ^{6 7}	19	1952	14	62	44	10	0	0	12	8	0	66	182.25	37.17
Tufted Duck	0	4	5	4	6	6	2	0	5	0	0	0	2.67	
Wigeon ⁷	17	270	260	16	0	0	2	1	1	0	0	0	47.25	2.27

Table F 9: Summary Count Data for Diurnal Low Tide Surveys in Count Sector DD052

Species	Nov-2023	Dec-2023	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Mean	Peak Count % of SPA population
Avocet	0	0	0	0	2	6	0	0	0	3	0	0	0.92	
Black-headed Gull	0	0	0	0	4	0	8	3	0	3	0	0	1.50	
Black-tailed Godwit ^{6 7 8}	0	0	0	0	0	0	0	0	0	0	2	0	0.17	0.11
Cormorant	6	0	37	2	1	0	0	0	3	3	0	1	4.42	
Canada Goose	0	0	0	0	14	0	12	0	0	0	0	0	2.17	
Common Sandpiper	0	1	0	0	1	0	0	0	0	0	12	0	1.17	
Dunlin ^{6 7}	0	0	0	0	0	0	0	0	1	84	0	0	7.08	0.30
Spotted Redshank	0	0	0	0	0	0	0	0	0	84	12	0	8.00	
Little Egret	1	0	1	1	2	1	1	0	0	2	1	1	0.92	
Great Black-backed Gull	0	1	1	0	0	0	0	0	0	0	0	0	0.17	
Greenshank	0	0	0	4	1	0	0	0	6	2	17	1	2.58	
Grey Heron	0	3	0	0	1	0	0	0	2	0	0	1	0.58	
Great White Egret	0	0	0	0	0	0	0	0	0	0	1	0	0.08	
Kingfisher	0	1	0	0	0	0	0	0	0	0	0	0	0.08	
Lapwing ⁷	0	0	0	0	0	0	0	43	2	2	0	0	3.92	0.41
Lesser Black-backed Gull	1	0	0	0	0	0	1	0	0	0	0	1	0.25	
Little Grebe	0	0	0	2	0	0	0	0	0	0	0	0	0.17	
Mallard	6	23	19	13	2	0	1	0	0	0	0	0	5.33	
Moorhen	0	1	0	0	0	0	0	0	0	0	0	0	0.08	
Mute Swan	3	2	22	0	15	5	9	0	0	0	0	0	04.67	
Oystercatcher ⁶	0	8	0	0	2	1	2	4	2	4	0	0	1.92	0.04
Peregrine	1	1	0	0	0	0	0	0	0	0	0	0	0.17	
Redshank ^{6 7}	4	4	2	4	9	76	0	1	185	84	72	145	48.83	3.50
Snipe	0	12	1	0	0	0	0	0	0	0	0	0	1.08	
Shelduck ^{6 7}	0	0	0	0	2	0	0	0	0	2	0	0	0.33	0.03
Teal ⁷	0	11	15	23	24	19	0	0	0	0	22	0	9.50	0.46
Wigeon ⁷	11	52	380	26	0	0	0	0	0	0	0	0	39.08	3.20
Whooper swan	0	0	0	0	6	1	0	0	0	0	0	0	0.58	

Nocturnal High Spring Tide Surveys

Table F 10: Summary Count Data for Nocturnal High Spring Tide Surveys in Count Sector 69426

Species	Dec-2023	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Mean	Peak Count % of SPA population
Black-headed Gull	0	0	0	0	0	0	3	0	0	0	0	0.25	
Canada Goose	0	0	0	0	0	18	0	0	0	0	0	1.50	
Curlew ⁶	4	0	0	0	0	0	0	0	0	0	0	0.33	0.10
Grey Heron	0	1	1	0	0	0	0	0	0	1	0	0.25	
Lapwing ⁷	120	20	39	0	0	0	0	0	0	0	1	15.75	1.14
Mallard	4	2	0	0	0	0	0	0	60	0	0	5.50	
Mute Swan	3	0	7	0	0	0	0	0	0	1	0	0.92	
Oystercatcher ⁶	0	0	2	1	0	2	0	0	0	0	0	0.42	0.01
Redshank ^{6 7}	1	8	0	0	0	0	0	0	20	0	0	2.42	0.38
Snipe	3	3	0	0	0	0	0	0	0	0	0	0.50	
Teal ^{6 7}	9	0	0	0	0	0	0	0	0	0	0	0.75	0.17
Wigeon ⁷	17	16	0	0	0	0	0	0	0	0	0	2.75	0.14

Table F 11: Summary Count Data for Nocturnal High Spring Tide Surveys in Count Sector 69459¹¹

Species	Dec-2023	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Mean	Peak Count % of SPA population
Black-headed Gull	0	0	0	0	0	0	20	0	0	0	0	1.67	
Canada Goose	30	0	110	0	0	0	0	0	0	0	0	11.67	
Curlew ⁶	0	0	15	0	0	0	0	0	0	0	0	1.25	0.38
Dunlin ^{6 7}	0	0	100	0	0	0	0	0	0	0	0	8.33	0.36
Lapwing ⁷	19	0	0	0	0	0	9	0	0	0	0	2.33	0.18
Mute Swan	0	0	7	0	0	0	0	0	0	0	0	0.58	
Oystercatcher ⁶	0	0	0	0	0	0	2	0	0	0	0	0.17	0.01
Redshank ^{6 7}	3	7	13	0	0	0	2	0	0	0	0	2.08	0.25
Snipe	0	0	1	0	0	0	0	0	0	0	0	0.08	
Shelduck ^{6 7}	0	0	7	0	0	0	40	0	0	0	0	3.92	0.52
Wigeon ⁷	100	0	0	0	0	0	0	0	0	0	0	8.33	0.84

¹¹ The western part of Sector 69459 (Oakenholt Marsh) is excluded from the November 2023 to October 2024 Survey Area.

Nocturnal High Neap Tide Surveys

Table F 12: Summary Count Data for Nocturnal High Neap Tide Surveys in Count Sector 69426

Species	Dec-2023	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Mean	Peak Count % of SPA population
Canada Goose	0	6	0	0	0	0	12	0	0	0	0	1.50	
Curlew ⁶	0	9	0	0	0	0	0	0	0	0	0	0.75	0.23
Dunlin ^{6 7}	0	6	0	0	0	0	0	0	0	0	0	0.50	0.02
Grey Heron	0	1	0	0	0	0	0	0	1	1	0	0.25	
Lapwing ⁷	0	35	0	0	0	0	0	0	2	0	0	3.08	0.33
Little Grebe	0	1	0	0	0	0	0	0	0	0	0	0.08	
Mallard	0	10	0	0	0	0	0	0	0	0	0	0.83	
Oystercatcher ⁶	0	0	0	0	4	0	0	0	0	0	0	0.33	0.02
Redshank ^{6 7}	0	1	0	0	0	0	0	0	12	43	0	4.67	0.81
Snipe	0	1	0	0	0	0	0	0	0	0	0	0.08	
Teal ^{6 7}	0	0	0	0	0	0	0	0	0	7	0	0.58	0.13

Table F 13: Summary Count Data for Nocturnal High Neap Tide Surveys in Count Sector 69459¹²

Species	Dec-2023	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Mean	Peak Count % of SPA population
Canada Goose	0	0	0	0	0	0	0	0	0	0	45	3.75	
Redshank ^{6 7}	0	1	0	0	0	0	0	0	0	0	47	4.00	0.89

¹² The western part of Sector 69459 (Oakenholt Marsh) is excluded from the November 2023 to October 2024 Survey Area.

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Black-tailed Godwit

Limosa limosa

Introduction

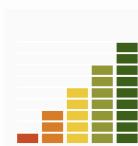
This long-legged wader is more often found near freshwater than its maritime cousin, the Bar-tailed Godwit, and has plainer plumage.

A very scarce breeder, the Black-tailed Godwit is encountered in greatest numbers in the spring and autumn months as birds move south from their breeding grounds in Iceland to wintering areas in Britain, Ireland, France and Portugal. Colour-ringing has shown that whilst individuals tend to winter in the same location each year, members of each pair often winter in different countries.

While only the smallest handful of pairs now breed in Britain, WeBS counts show the no-breeding population increasingly rapidly as a result of agricultural changes in Iceland, where most of our birds come from.



Key Stats

StatusWeightEggsSeasonality[Scroll down ↓](#)

Common

298.5g

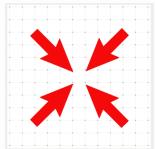
4

5%

[BTO Records](#)[Publications](#)

350k records

3

Population and distribution stats for:Breeding Winter [Population Change](#)[Population Size](#)[Distribution Change](#)

No data

53 pairs

-7%
contraction

Identification

Curated resources to aid in the identification of Black-tailed Godwit

[ID Videos](#)

Open >

[Songs and Calls](#)

Open >

Status and Trends

Population size, trends and patterns of distribution based on BTO and partnership surveys and atlases with data collected by BTO volunteers.

Conservation Status Open >

Population Size Open >

Population Change Open >

Distribution Open >

Distribution Change Open >

Seasonality Open >

Movement

Information about Black-tailed Godwit movements and migration based on online bird portals (e.g. BirdTrack), Ringing schemes and tracking studies.

Britain & Ireland movement Open >

European movements Open >

Biology

Lifecycle and body size information for Black-tailed Godwit, including statistics on nesting, eggs and lifespan based on BTO ringing and nest recording data.

Productivity and Nesting Open >

Survival and Longevity Open >

Biometrics Open >

Classification, names and codes

Taxonomy, names and species codes for Black-tailed Godwit

Classification and Codes Open >

Alternate species names Open >

Research

Interpretation and scientific publications about Black-tailed Godwit from BTO scientists.

Causes of Change and Solutions Open >

Publications (3)

More Evidence

More evidence from Conservation Evidence.com

- [The effects of flooding lowland wet grassland on soil macroinvertebrate prey of breeding wading birds](#)
- [Agri-environment schemes do not effectively protect biodiversity in Dutch agricultural landscapes](#)
- [Waterbird densities in south European rice fields as a function of rice management](#)
- [The effect of 'mosaic management' on the demography of black-tailed godwit *Limosa limosa* on farmland](#)
- [Artificial feeding to attract wild birds close to a viewing area at Belfast Lough RSPB Reserve, Antrim, Northern Ireland](#)

[There are a total of 8869 individual studies.](#)

Partners

Birdfacts is based on data collected by volunteers participating in surveys that are organised and funded by BTO, RSPB, Esmée Fairbairn Foundation, JNCC and other partners.



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The Nunnery, Thetford, Norfolk, IP24 2PU

+44 (0)1842 750050

info@bto.org

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