Appendix 12-4. Baseline Report — Bird Technical Appendix

AECOM

Dublin Airport (Passenger Capacity) Act 2026

Baseline Report — Bird Technical Appendix

August 2026

Delivering a better world

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Table of Contents

1. Introduction 5
1.1 Background 5
1.2 Quality Assurance and Statement of Authority 5
2. Legislation & Planning Policy Context 9
2.1 Relevant Legislation 9
2.2 Relevant Planning Policy and Guidance 9
3. Methods 10
3.1 Protected & Important Species 10
3.2 Desk Study 10
3.3 Field Survey 11
3.3.1 Non-Breeding Bird Surveys 12
3.3.2 Breeding Bird Surveys 12
3.4 Territory Analysis 13
3.5 Limitations 14
4. Results 15
4.1 Desk Study 15
4.1.1 Nature Conservation Sites 15
4.1.2 Records of Protected & Important Species 17
4.2 Non-Breeding Bird Survey Results 18
4.2.1 2018/19 Non-breeding Bird Surveys 18
4.2.2 2019/20 Non-breeding Bird Surveys 20
4.2.3 2021 Non-breeding Bird Surveys 21
4.2.4 2022/23 Non-Breeding Bird Surveys 22
4.2.5 2024/25 Non-breeding Bird Surveys 24
4.2.6 Non-breeding Bird Summary (2018 to 2025) 25
4.3 Breeding Bird Survey Results & Territory Analysis 29
4.3.1 2019 Breeding Bird Surveys 29
4.3.2 2022 Breeding Bird Surveys 29
4.3.3 2024 Breeding Bird Surveys 29
4.3.4 2025 Breeding Bird Surveys 30
5. Summary 31
5.1 Non-breeding Birds 31
5.2 Breeding Birds 31
6. Figures 32
Annex A Non-breeding Bird Survey Details 33
Annex B Protected & Important Species Returned by the NBDC and NPWS Database Search 35
Annex C Full List of Bird Species Recorded during the Breeding Bird Surveys 37

Figures

Figure 1 – Non-breeding Bird Survey Area (2022 to 2023)
Figure 2 – Non-breeding Bird Survey Area (2018 to 2021)
Figure 3 – Breeding Bird Survey Area (2024 to 2025)
Figure 4 – Breeding Bird Survey Area (2019 and 2022)
Figure 5 – Non-breeding Bird Survey Results (2018 to 2025)
Figure 6 – Breeding Bird Survey Results
Figure 7 – Breeding Bird Territories

Tables

Table 1-1: Quality Assurance 5
Table 3-1: Desk Study Sources 10
Table 3-2 Breeding and Non-breeding Bird Survey Areas 11
Table 3-3: Breeding Bird Survey Details 13
Table 3-4: Breeding Evidence, Adapted from BTO Bird Atlas Survey 14
Table 4-1: Sites Designated for Conservation of Birds 15
Table 4-2: Peak Counts of Important Waterbirds (2021) 21
Table 4-3: Peak Counts of Important Farmland Birds (2021) 22
Table 4-4: Peak Counts of Important Waterbirds (2022-2023) 23
Table 4-5: Peak Counts of Important Farmland Birds (2022-2023) 24
Table 4-6: Peak Counts of Important Waterbirds (2024-2025) 24
Table 4-7: Summarised Results of Important Bird Species Recorded during the Non-Breeding Bird Surveys from 2018 to 2025 26
Table 4-8: SCI Bird Species Recorded during the Non-Breeding Bird Surveys from 2018 to 2025 28
Table 4-9: Results of 2022 Territory Analysis (Important Species) 29
Table 4-10: Results of 2024 Territory Analysis (Important Species) 30

1. Introduction

1.1 Background

AECOM was commissioned by daa to prepare an Environmental Impact Assessment Report (EIAR) which presents the Principal Assessment of the likely significant effects of the Proposed Order on biodiversity. The assessment compares the 2029 Permitted Operation and 2029 Proposed Operation scenarios in accordance with the project-wide assessment framework described in Chapter 5: Methodology (EIAR Volume 2).

This Technical Appendix to Chapter 12: Biodiversity (EIAR Volume 2) documents the desk study and field survey carried out for non-breeding and breeding bird species within the Dublin Airport Site (subject of the Proposed Order) and surrounding lands. Bird surveys were carried out between 2018 and 2025. Also included in this document is territory analysis for breeding birds. Non-breeding waterbird disturbance monitoring surveys that were carried out in Malahide Estuary SPA and Baldoyle Bay SPA between January and March 2024 are described in the separate Non-breeding Bird Disturbance Monitoring Survey Report[1].

This Technical Appendix is structured as followed:

- **Section 1: Introduction**
- **Section 2: Legislative and Policy Context** provides an overview of relevant international and national nature conservation legislation and national and local planning policies related to biodiversity and nature conservation
- **Section 3: Methods** describes the desk study and field survey methods used to assess the presence or likely absence of important bird species
- **Section 4: Results** set out the results of the desk study and field survey
- **Section 5: Summary** details the key findings of the desk study and field survey
- **Section 6: Figures**

1.2 Quality Assurance and Statement of Authority

This Technical Appendix, and the desk study and field survey described within it, has been completed in accordance with the AECOM Integrated Management System (IMS). The AECOM IMS places emphasis on professionalism, technical excellence, quality, as well as covering health, safety, environment and sustainability management. All staff members are committed to establishing and maintaining our accreditation to the relevant international standards, including ISO 9001:2015, ISO 14001:2015, and ISO 45001:2018.

AECOM is one of eight founding members of the Institute of Environmental Management and Assessment (IEMA) EIA Quality Mark scheme, helping IEMA to pilot the scheme prior to its launch in 2011 and maintaining membership ever since. The EIA Quality Mark is a voluntary scheme through which AECOM's EIA activity is reviewed regularly by IEMA. The Quality Mark demonstrates that AECOM EIARs are of high quality, technically sound, independently audited and regularly monitored to maintain high standards. It also underlines AECOM's commitment to continuous improvement of EIA practice across Ireland and the UK.

Details of the qualifications and experience of the AECOM ecologists involved in preparing this Technical Appendix, including in completing the desk study and field survey, are given in Table 1-1. Field surveys in 2025 were conducted by suitably experienced APEM ecologists.

Table 1-1: Quality Assurance

Staff Member	Qualifications	Role in Preparing this Technical Appendix	Experience
Tony Marshall (Technical Director)	• BSc (Hons) in Biological Sciences (Ecology) • Chartered Ecologist CEcol • Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM)	Tony was responsible for ensuring that field survey followed good practice guidelines. He also provided technical review and verification of this Technical Appendix.	Tony has over fourteen years' experience as a professional ecologist on projects for private and public sector clients. He has extensive experience in Ecological Impact Assessment (EcIA) at all stages of the process, including screening / scoping, baseline data

[1] AECOM (2024). Non-breeding Bird Disturbance Monitoring Survey Report: Malahide Estuary SPA and Baldoyle Bay SPA.

Staff Member	Qualifications	Role in Preparing this Technical Appendix	Experience
			collection, assessment and reporting. He has conducted many surveys for breeding and non-breeding birds and used the results obtained to identify the impacts of infrastructure developments and to devise suitable mitigation / enhancement strategies.
Laura Cappelli (Senior Ecologist)	• BSc (Hons) in Conservation Biology • MSc (Hons) in Biodiversity and Conservation • MCIEEM	Laura carried out field surveys following good practice guidelines.	Laura has over eight years of experience as a professional ecologist on projects for private and public sector clients. She has experience in EcIA and has carried out several surveys for both non-breeding and breeding birds including transect and vantage point surveys.
Alison Donnelly (Senior Ecologist)	• BSc (Hons) in Marine Science • MRes (Hons) in Marine Biology	Alison carried out field surveys following good practice guidelines.	Alison has over eight years of experience as a professional ecologist on projects for private and public sector clients. She has experience in EcIA and has carried out several surveys for both non-breeding and breeding birds including transect and vantage point surveys.
Paul Donaghey (Ecologist)	• BSc (Hons) in Biological Sciences • MSc (Hons) in Ecological Management and Conservation Biodiversity	Paul was involved in data management for the surveys and also wrote this report.	Paul has seven years of experience as a professional ecologist on projects for private and public sector clients. He has experience in EcIA and has carried out several surveys for both non-breeding and breeding birds including transect and vantage point surveys.
Paul Lynas (Associate Director)	• BSc (Hons) in Environmental Biology • PhD Ecology • Full Member of CIEEM • Chartered Environmentalist	Paul carried out field surveys following good practice guidelines.	Paul has over 20 years' experience with professional conservation and consultancy. He has worked on projects for private and public sector clients. He has extensive experience in EcIA at all stages of the process, including screening / scoping, baseline data collection, assessment and reporting. Paul has extensive experience in surveying of birds having conducted breeding and non-breeding birds and used the results obtained to identify the impacts of infrastructure developments and to devise suitable mitigation / enhancement strategies.
Emmi Virkki (Ecologist)	• BSc (Hons) Environmental Biology • MSc (Hons) Environmental Science	Emmi carried out field surveys following good practice guidelines.	Emmi Virkki has over three years professional consultancy experience. Emmi is an experienced ornithologist who has surveyed extensively for birds including wintering bird and species-specific vantage point surveys, breeding bird transect surveys and Ecological Clerk of Works (ECoW) vegetation removal nest searches. Emmi has attended training for Irish Wetland Bird Survey (I-Webs), Countryside Bird Survey (CBS), and seabird survey with BirdWatch Ireland; Lowland Breeding Wader Survey and Nest Finding Survey workshops with British Ornithological Trust (BTO), and a Wader and Wildfowl course

Staff Member	Qualifications	Role in Preparing this Technical Appendix	Experience
			with the National Biodiversity Data Centre. She has also completed a Wildlife Rehabilitation course with Wildlife Rehabilitation Ireland, which included bird handling and rehabilitation techniques, and has regularly contributed to volunteer bird survey schemes such as I-Webs programme with BirdWatch Ireland.
Cameron Chester (Ecologist)	• BSc (Hons) Zoology • Graduate Member of CIEEM	Cameron carried out field surveys following good practice guidelines.	Cameron has over seven years' experience completing breeding bird surveys both professionally and voluntarily. He has led many breeding bird surveys using the Common Birds Census territory mapping method in a range of habitats and areas. He also has experience of species-specific surveys (e.g. barn owl *Tyto alba*, kingfisher *Alcedo atthis,* nightjar *Caprimulgus europaeus* black redstart *Phoenicurus ochruros* and peregrine falcon *Falco peregrinus*). Cameron also currently holds a barn owl licence from Natural England. He is competent in the identification of birds both visually and through songs/calls.
Matt Rohner AISEP (Principal Ornithologist)	• BSc (Hons) Biological Sciences • MSc Endangered Species Recovery and Conservation • Associate member of the Institute of Sustainability and Environmental Professionals	Matt added updated survey data to this Technical Appendix in July 2026.	Matt is a principal ornithologist with a background in terrestrial ecology, and later in managing offshore environmental digital aerial survey (DAS) programmes for proposed offshore wind farm sites. Matt is a skilled bird surveyor across a variety of habitats and has extensive experience managing project and survey teams. His project experience includes ornithological baseline characterisation, ornithology HRA and EIA, seabird colony census and productivity surveys, and migratory bird bioacoustics monitoring.
Jenny Hunter (Principal Ecologist)	• BSc (Hons) in Environmental Biology (1st class) • MSc in Ecological Management and Conservation Biology • MCIEEM MRSB	Jenny reviewed this updated Technical Appendix.	Jenny has over 12 years' professional experience of ecological consultancy. Jenny has experience in bird survey, particularly wintering coastal birds. Jenny is an excellent communicator, authoring and reviewing a range of ecological reports.
Chris Hill (Technical Director)	• BSc (Hons) in Zoology • MRes (Hons) in Ecology and Environmental Sustainability • MCIEEM	Chris verified this Technical Appendix.	Chris has over 17 years' experience as a professional ecologist on projects for private and public sector clients. He has extensive experience in Ecological Impact Assessment (EcIA) at all stages of the process, including screening / scoping, baseline data collection, assessment and reporting. He has conducted many surveys for badgers and used the results obtained to identify the impacts of infrastructure developments and to devise suitable mitigation / enhancement strategies.

2. Legislation & Planning Policy Context

2.1 Relevant Legislation

The following relevant legislation was considered when carrying out the desk study and field survey for birds:

- Directive 2009/147/EC on the conservation of wild birds (the 'Birds Directive')
- The European Communities (Birds and Natural Habitats) Regulations 2011 and 2015 (S.I. No. 477/2011) (as amended) (the 'Habitats Regulations')
- The Wildlife Act 1976 and the Wildlife (Amendment) Act 2000 (together known as the 'Wildlife Acts')

The Birds Directive instructs Member States of the European Union (EU) to take measures to maintain populations of all bird species naturally occurring in the wild state in the EU (Article 2). Such measures may include the maintenance and/or re-establishment of habitats to sustain these bird populations (Article 3). A subset of bird species has been identified in the Birds Directive and are listed in Annex I as requiring special conservation measures in relation to their habitats. These species have been listed on account of, inter alia: their risk of extinction; vulnerability to specific changes in their habitat; and/or due to their relatively small population size or restricted distribution. Special Protection Areas (SPAs) are identified and designated to protect these Annex I listed species as well as regularly occurring migratory species, paying particular attention to the protection of wetlands (Article 4). The requirements of the Birds Directive are translated into Irish national law by the Habitats Regulations.

All bird species are protected under the Wildlife Acts from offences including intentional killing or injury, and disturbance during the breeding season (to include eggs, young, and nests, which are also protected).

2.2 Relevant Planning Policy and Guidance

The following planning policy is also relevant to protected and breeding and non-breeding bird species:

- Project Ireland 2040: National Planning Framework (NPF)[2]
- Project Ireland 2040: National Marine Planning Framework (NMPF)[3]
- National Biodiversity Action Plan 2023-2030[4]
- Regional Spatial and Economic Strategy for the Eastern and Midland Region[5]
- Fingal Development Plan 2023-2029[6]
- Dublin Airport Local Area Plan[7]
- Fingal Biodiversity Action Plan 2022-2030[8]

The following guidelines were considered when designing and undertaking desk study and field survey for birds:

- *Guidelines on the information to be contained in Environmental Impact Assessment Reports* (herein referred to as 'the EPA Guidelines')[9]
- *Environmental Impact Assessment of Projects - Guidance on the preparation of the Environmental Impact Assessment Report* (Directive 2011/92/EU as amended by 2014/52/EU)[10]
- *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment*[11]

[2] https://npf.ie/wp-content/uploads/Project-Ireland-2040-NPF.pdf
[3] https://www.gov.ie/pdf/?file=https://assets.gov.ie/139100/f0984c45-5d63-4378-ab65-d7e8c3c34016.pdf#page=null
[4] https://www.npws.ie/legislation/national-biodiversity-plan
[5] https://emra.ie/rses/#:~:text=The%20RSES%20will%20identify%20the,up%20to%202030%20and%20beyond
[6] https://www.fingal.ie/development-plan
[7] https://www.fingal.ie/sites/default/files/2020-01/dublin-airport-lap-2020.pdf
[8] https://www.fingal.ie/sites/default/files/2023-12/Fingal%20Biodiversity%20Action%20Plan%202023-2030.pdf
[9] https://www.epa.ie/news-releases/news-releases-2022/epa-publishes-guidelines-on-the-information-to-be-contained-in-environmental-impact-assessment-reports.php
[10] https://ec.europa.eu/environment/eia/pdf/EIA_guidance_EIA_report_final.pdf
[11] https://www.gov.ie/en/publication/53aee9-guidelines-for-planning-authorities-and-an-bord-pleanala-on-carrying/

- *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*[12].

3. Methods

3.1 Important Species

For the purposes of this Technical Appendix, important bird species are defined as:

- Bird species listed on Annex I of the Birds Directive[13]
- All qualifying bird species (known in Ireland as 'Special Conservation Interests' (SCI)) of SPAs or Wetlands of International Importance ('Ramsar sites') within 20km of the Dublin Airport
- All qualifying bird species of nationally designated sites (Natural Heritage Areas (NHAs) and Proposed Natural Heritage Areas (pNHAs)) within 2km of the Dublin Airport or further afield where there is potential connectivity to the Dublin Airport Site Boundary
- Bird species on the Red List Birds of Conservation Concern in Ireland (BoCCI)[14]

Other species, that may be rare, scarce, or otherwise important, were included where deemed appropriate through available information and/or professional judgement.

3.2 Desk Study

A desk study was carried out to identify any relevant nature conservation designations for which birds are a qualifying feature and to search for records of bird species in proximity to the Dublin Airport.

A stratified approach was taken when defining the desk study area, which sought to identify:

- International nature conservation designations (i.e. SPAs and Ramsar sites) within 20km of the Dublin Airport
- National nature conservation designations (i.e. NHAs and pNHAs) within 2km of the Dublin Airport or further afield where there is potential connectivity to the Dublin Airport Site Boundary
- Records of important bird species within 2km of the Dublin Airport

The desk study was carried out using the data sources detailed in Table 3-1.

Table 3-1: Desk Study Sources

Data Source	Date Accessed	Data Obtained
Environmental Protection Agency (EPA) Maps online tool (https://gis.epa.ie/EPAMaps/)	June 2026	• The locations of designated nature conservation sites in relation to the Proposed Order.
National Parks and Wildlife Service (NPWS) website (www.npws.ie)	June 2026	• Details on relevant international and national statutory and non-statutory designations.
National Biodiversity Data Centre (NBDC) (maps.biodiversityireland.ie)	July 2024	• Records of important bird species within 2km of the Dublin Airport.
Birds of Conservation Concern in Ireland 2020-2026 (*Gilbert et al.* 2021)[14]	June 2026	• Details of the conservation status of Irish birds.
Google Maps (https://www.google.com/maps/) Tailte Éireann 1:25,000 maps and aerial photography (https://www.arcgis.com/apps/webappviewer/index.html?id=3ae19cc156bf4706a929304bf8fcc4f6)	June 2026	• Information on habitats and habitat connections (based on aerial images) relevant to planning policy and assessment of potential effects on bird species.

[12] CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.3. CIEEM, Winchester. Available: https://cieem.net/wp-content/uploads/2018/08/EcIA-Guidelines-v1.3-Sept-2024.pdf
[13] Directive 2009/147/EC on the conservation of wild birds
[14] Gilbert, G., Stanbury, A. and Lewis, L. (2021). Birds of Conservation Concern in Ireland 2020–2026. Irish Birds 43: pp 1-122.

Data Source	Date Accessed	Data Obtained
BirdWatch Ireland I-WeBs data[15]	July 2024	• Records of waterbirds in the surrounding I-WeBs locations.

3.3 Field Survey

All field surveys up until 2024 were carried out by experienced AECOM ecologists (see Section 1.2) and surveys in 2025 were conducted by experienced APEM ecologists.

Field surveys were conducted to establish the non-breeding and breeding bird assemblage within the Dublin Airport Site Boundary and wider area around Dublin Airport. The adopted survey areas varied throughout the years of fieldwork depending on which projects were being considered as part of the Dublin Airport Site Boundary at the time. To aid survey design, reporting and assessment across a large area, the Dublin Airport Site Boundary was demarcated into numbered Survey Locations (SL) where survey efforts were focussed, additionally three survey locations referred to as SP04, SP07, and SP09 were retained as survey areas from historic surveys for consistency these are presented on Figure 1.

A description of the field survey methods and survey areas employed between 2018 and 2025 is detailed in Table 3-2.

Table 3-2 Breeding and Non-breeding Bird Survey Areas

Survey Type	Year(s)	Survey Area	Relevant Figure
Non-breeding bird survey	2022 to 2023	• All accessible and visible land with potential to be used by non-breeding birds within 500m of the Dublin Airport Site Boundary were surveyed.	Figure 1
Non-breeding bird survey	2018 to 2021	• Surveys were primarily carried out within a minimum survey area of 100m around Dublin Airport. • This survey area was extended in some places to a maximum distance of 1.5km from the Dublin Airport. • Surveys carried out between September 2019 to March 2020 primarily focused on the eastern side of the Dublin Airport and wider areas near the motorways.	Figure 2
Breeding bird survey	2024	• All accessible and visible land with potential to be used by breeding birds within 50m of the Proposed Order were surveyed. Note that this survey buffer was increased around SL9 (shown on Figure 3) as this SL boundary was not finalised at the time of survey. • SLs surveyed comprised: ▪ SL2 ▪ SL4 ▪ SL6 ▪ SL9 ▪ SL10 ▪ SL11 ▪ SL12 • Some SLs are located in built-up locations not suitable for breeding birds Consequently, SLs not surveyed comprised: ▪ SL1 ▪ SL3 ▪ SL5 ▪ SL6 ▪ SL7 ▪ SL8	Figure 3
Breeding bird survey	2019 and 2022	• SLs surveyed comprised: ▪ SL4 ▪ SL9 ▪ SL10 • Other SLs were not surveyed because these locations were either not accessible, not identified as part of the Proposed Order at the	Figure 4

[15] https://birdwatchireland.ie/our-work/surveys-research/research-surveys/irish-wetland-bird-survey/

		time of survey and/or did not comprise suitable habitat for breeding birds. • Two SLs referred to as SP04 and SP07 that that are no longer considered as part of the Proposed Order were also surveyed.	
Non-breeding bird survey	2024 to 2025	• All accessible and visible land with potential to be used by non-breeding birds within 500m of the Dublin Airport Site Boundary.	Figure 6d
Breeding bird survey	2025	• All accessible and visible land with potential to be used by non-breeding birds within 50m of the Dublin Airport Site Boundary.	Figure 6e

3.3.1 Non-Breeding Bird Surveys

Non-breeding bird surveys were carried out within the survey areas set out in Table 3-2 during the following periods:

- Between November 2018 and March 2019
- Between September 2019 and March 2020
- In January and February 2021
- Between October 2022 and March 2023
- Between September 2024 and March 2025

Survey dates and details are provided in Annex A.

Non-breeding bird survey adopted the method used for the Irish Wetland Bird Survey (I-WeBS), as described in the *Counter Manual* for the scheme[16], which itself is based on the 'look-see' method described by Bibby *et al.* (2000)[17]. Non-breeding bird surveys were conducted around the high or low tide times where possible, reflecting best practice (e.g. as per British Trust for Ornithology research[18]).

Field surveys involved a combination of driven transect and Vantage Point (VP) watches. A driving route was established outside airside[19] lands along which VPs were selected to visually assess fields. All VPs covering airside lands and land within Survey Location boundaries were surveyed for a minimum of ten minutes. Surveyors alternated start locations between surveys to reduce bias in observer effort. The majority of airside fields could be viewed from the driven transect route and VP locations, so airside access wasn't necessary for non-breeding bird surveys.

3.3.2 Breeding Bird Surveys

A modified version of the Common Bird Census (CBC), as described in Gilbert *et al.* (1998)[20], was used to survey the breeding bird assemblage within the survey areas set out in Table 3-2. Breeding bird surveys were carried out during the following periods (as detailed in Table 3-3:

- between April and August 2019 (four survey visits)
- in May and June 2022 (two survey visits)
- in May and June 2024 (three survey visits)
- In July and August 2025 (two survey visits)

These breeding bird survey visits were considered to provide an adequate survey effort and is common practice, rather than the ten visits prescribed by CBC methodology. This survey effort provides a reliable indication of the numbers of breeding birds in the survey area to determine the breeding bird assemblage and to identify species which may potentially be affected by the Proposed Order. All surveys were carried out during favourable weather

[16] BirdWatch Ireland and NPWS (undated). Counter Manual – Guidelines for Irish Wetland Bird Survey counters. Available from: https://birdwatchireland.ie/publications/i-webs-counter-manual/
[17] Bibby, C.J., Burgess, N.D., Hill, D.A. and Mustoe, S. (2000). Bird Census Techniques (2nd Edition). Academic Press, London.
[18] Armitage, M.J.S., Holloway, S.J., Shaw, P. and Rehfisch, M.M. (2002). Through-the-tidal-cycle and Night-time Waterbird Counts as part of the London Gateway Assessment. BTO Research Report 283. British Trust for Ornithology, Thetford.
[19] Landside refers to areas in the vicinity of the Dublin Airport that do not require strict security clearance through the airport to enter. Airside refers to areas within the Dublin Airport that do require strict security clearance to through the airport to enter.
[20] Gilbert, G., Gibbons, D.W., and Evans, J. (1998). Bird Monitoring Methods: A Manual of Techniques for UK Key Species. The Royal Society for the protection of Birds, Sandy, Bedfordshire, England.

conditions of light winds, with no heavy precipitation and good visibility. Surveys were carried out where possible in the early morning, avoiding the period immediately after sunrise.

A pre-determined transect route was walked which allowed all parts of this survey area to be approached to within 50-100 m, depending upon the degree of openness of particular parts of the survey area. Binoculars were used to scan all parts of the survey area and surveyors included regular stops to listen for singing or calling birds.

All birds observed[21], either by sight or sound, their locations and activity/behaviour were recorded on field maps and/or mobile mapping software using standard British Trust for Ornithology (BTO) species codes and behaviour notation, as described in Gilbert *et al.* (1998)[20].

Table 3-3: Breeding Bird Survey Details

Survey Date	Survey Visit Number	Surveyor	Time of Sunrise	Start Time	End Time	Weather Conditions
16 April 2019	1	CC	06:24	08:10	10:20	Overcast day with moderate wind and no rain. Good visibility.
17 April 2019		CC	06:21	06:45	09:40	Overcast day with moderate wind and no rain. Good visibility.
04 June 2019	2	EV	05:01	09:50	15:45	Overcast day with light wind and showers. Moderate visibility.
05 June 2019		EV	05:00	9:00	11:00	Overcast day with light wind and showers. Moderate visibility.
09 July 2019	3	EV	05:08	10:00	13:00	Overcast day with light wind and no rain. Good visibility.
01 August 2019	4	EV	05:40	09:30	11:00	Overcast day with light wind and no rain. Good visibility.
27 May 2022	1	PL	05:08	05:00	11:30	Overcast day with a gentle breeze and drizzle. Good visibility.
28 June 2022	2	AD	04:59	06:15	09:50	Partly cloudy day with light winds and no rain. Excellent visibility.
16 May 2024	1	AD	05:23	07:10	11:30	Overcast day with light wind and no rain. Good visibility.
18 May 2024		AD	05:20	05:30	07:40	Clear day with still and no rain. Good visibility.
04 June 2024	2	AD	05:01	06:40	10:50	Overcast day with light wind and drizzle. Good visibility.
20 June 2024		AD	04:57	07:20	10:35	Overcast day with light wind and no rain. Good visibility.
26 June 2024	3	AD	04:59	07:06	10:30	Overcast day with light wind and no rain. Good visibility.
27 June 2024		AD	04:59	06:05	09:45	Overcast day with moderate breeze and no rain. Good visibility.
31 July 2025	1	SC	05:40	05:40	11:40	Low winds, moderate/good visibility, no persistent rain.
07 August 2025	2	KW	05:51	05:51	11:51	Low winds, moderate/good visibility, no persistent rain.

3.4 Territory Analysis

The results of the breeding bird surveys were used to determine breeding activity and to estimate territorial locations of important species (see Section 3.1 for important species). Species not considered to be important (e.g. those on the Amber or Green Lists of BoCCI and not meeting any of the other criteria given in Section 3.1) were not included in the territory analysis.

[21] The following birds were not always recorded as they are very common and widespread and are not notable in the context of this Technical Appendix: all corvids, woodpigeon *Columba palumbus*, and feral pigeon *Columba livia*.

Esri ArcGIS software was used to digitise and collate all observations made during the breeding bird survey visits. One or more records of territorial behaviour (e.g. singing, displaying or alarming, or the finding of nests or dependent young) were assumed to indicate a possible, probable or confirmed breeding territory, in accordance with BTO evidence, as shown in Table 3-4[22]. Obvious clusters of records were used to help identify breeding territories, taking into consideration the relevant ecologies of the species in question and using professional judgement.

Table 3-4: Breeding Evidence

Non-Breeding	Possible Breeding	Probable Breeding	Confirmed Breeding
• Flying over. • Species observed but suspected to be still on migration. • Species observed but suspected to be a summering non-breeder.	• Species observed in breeding season in suitable nesting habitat. • Singing male present (or breeding calls heard) in breeding season in suitable habitat.	• Pair observed in suitable nesting habitat in breeding season. • Permanent territory presumed through registration of territorial behaviour (e.g., song) on at least two different days, a week or more apart at the same place, or many individuals on one day. • Courtship and display (judged to be in or near potential habitat). • Visiting probable nest site. • Agitated behaviour or anxiety calls from adults, suggesting probable presence of nest or young nearby. • Brood patch on adult examined in hand, suggesting incubation. • Nest building or excavating nest hole.	• Distraction display or injury feigning. • Used nest or eggshells (occupied or laid within period of survey). • Recently fledged young or downy young. • Adults entering or leaving nest in circumstances indicating occupied nest, or adults seen incubating. • Adult carrying faecal sac or food for young. • Nest containing eggs. • Nest with young seen or heard.

3.5 Limitations

Desk study information is dependent on records having been submitted for the area of interest. As such, lack of records for particular species does not necessarily mean they are absent from the area of interest. Similarly, the presence of records for particular species does not automatically mean they still occur within the area of interest or are relevant.

The non-breeding bird survey results do not contain geospatial data for eight survey dates: 28 and 29 November 2018, 14 December 2018, 28 and 29 March 2019, 06 September 2019, 05 December 2019, and 18 March 2020. This is seen as only a minor limitation to this Technical Appendix because the results contain geospatial data for all other 31 survey dates from between 2018 to 2020. Moreover, further non-breeding bird surveys were carried out in 2021, 2022 and 2023, for which full geospatial data are available.

In December 2018, two non-breeding bird surveys were abandoned due to inclement weather. These surveys were repeated later in the month. Non-breeding bird surveys are carried out during months when days are short and light levels are generally low, potentially limiting the survey window. Survey dates were picked with weather conditions in mind so that surveys could be carried out in conditions with suitable visibility.

The 2025 breeding bird survey was conducted over two visits in late July and early August. While this is not in line with bird survey guidelines[23], given that the breeding bird surveys in 2019, 2022 and 2024 were all undertaken within the recommended timeframes of between late March and early July[23], it is considered that the dataset as a whole covering 2019 to 2025 presents a robust overview of breeding bird behaviour within the survey area. Therefore, the data are collectively considered to be fit for purpose.

[22] Adapted from the BTO Bird Atlas survey: https://www.bto.org/our-science/projects/birdatlas/methods/breeding-evidence
[23] Bird Survey & Assessment Steering Group. (2026). Bird Survey Guidelines for assessing ecological impacts [online]. Available at: https://birdsurveyguidelines.org/. Accessed: July 2026.

4. Results

4.1 Desk Study

4.1.1 Nature Conservation Sites

There are ten SPAs and five Ramsar sites within 20km of the Dublin Airport Site Boundary. There are four nationally designated sites (all pNHA) which could be connected to the Dublin Airport Site Boundary for which bird species are qualifying features.

A summary of the designated nature conservation sites is provided in Table 4-1. The sites are listed in order of increasing distance from the Proposed Order.

Table 4-1: Sites Designated for Conservation of Birds

Designation [site code]	Summary of Special Conservation Interest(s)*/Designation Features	Distance and Direction from the Dublin Airport
Malahide Estuary SPA [004025] and Broadmeadow Estuary Ramsar Site [833]	*Non-breeding waterbirds:* • Great crested grebe *Podiceps cristatus* [A005] • Light-bellied brent goose *Branta bernicla hrota* [A046] • Shelduck *Tadorna tadorna* [A048] • Pintail *Anas acuta* [A054] • Goldeneye *Bucephala clangula* [A067] • Red-breasted merganser *Mergus serrator* [A069] • Oystercatcher *Haematopus ostralegus* [A130] • Golden Plover *Pluvialis apricaria* [A140] • Grey Plover *Pluvialis squatarola* [A141] • Knot *Calidris canutus* [A143] • Dunlin *Calidris alpina* [A149] • Black-tailed godwit *Limosa limosa* [A156] • Bar-tailed godwit *Limosa lapponica* [A157] • Redshank *Tringa totanus* [A162] *Wetland habitats supporting waterbirds:* • Wetland and waterbirds [A999]	4 km north-east
Sluice River Marsh pNHA [001763]	This pNHA has been designated for marsh, wet grassland, wet woodland and waterfowl. It comprises a freshwater marsh along the Sluice River with some wet grassland, wet woodland and scrub surrounding the marsh. Several waterbirds have been recorded in this location such as mallard *Anas platyrhynchos*, snipe *Gallinago gallinago*, grey heron *Ardea cinerea*, moorhen *Gallinula chloropus*, and reed bunting *Emberiza schoeniclus*. Some waterfowl from Baldoyle Estuary may use this marsh.	4.8 km east
Baldoyle Bay SPA [004016], Baldoyle Bay Ramsar Site [413], and Baldoyle Bay pNHA [000199]	*Non-breeding waterbirds:* • Light-bellied brent goose [A046] • Shelduck [A048] • Ringed plover *Charadrius hiaticula* [A137] • Golden plover [a140] • Grey plover [a141] • Bar-tailed godwit [A157] *Wetland habitats supporting waterbirds:* • Wetland and waterbirds [A999]	5.3 km east
South Dublin Bay and River Tolka Estuary SPA [004024] and Sandymount Strand/Tolka Estuary Ramsar Site [832]	*Non-breeding waterbirds:* • Light-bellied brent goose [A046] • Oystercatcher [A130] • Ringed plover [A137] • Grey plover [A141] • Knot [A143] • Sanderling [A144] • Dunlin [A149] • Bar-tailed godwit [A157] • Redshank [A162]	5.8 km south

Designation [site code]	Summary of Special Conservation Interest(s)*/Designation Features	Distance and Direction from the Dublin Airport
	• Black-headed gull [A179] *Breeding waterbirds:* • Common tern *Sterna hirundo* [A193] *Passage (during post-breeding/pre-migration roosting) waterbirds:* • Roseate tern *Sterna dougallii* [A192] • Common tern [A193] • Arctic tern *Sterna paradisaea* [A194] *Wetland habitats supporting waterbirds:* • Wetland and waterbirds [A999]	
North Bull Island SPA [004006], North Bull Island Ramsar Site [406], and North Dublin Bay pNHA [000206]	*Non-breeding waterbirds:* • Light-bellied brent goose [A046] • Shelduck [A048] • Teal *Anas crecca* [A052] • Pintail [A054] • Shoveler *Anas clypeata* [A056] • Oystercatcher [A130] • Golden plover [A140] • Grey plover [A141] • Knot [A143] • Sanderling *Calidris alba* [A144] • Dunlin [A149] • Black-tailed godwit [A156] • Bar-tailed godwit [A157] • Curlew *Numenius arquata* [A160] • Redshank [A162] • Turnstone *Arenaria interpres* [A169] • Black-headed gull [A179] *Wetland habitats supporting waterbirds:* • Wetland and waterbirds [A999]	6.1 km south-east
North-west Irish Sea SPA [004236]	*Non-breeding waterbirds:* • Red-throated diver *Gavia stellata* [A001] • Great Northern diver *Gavia immer* [A003] • Fulmar *Fulmarus glacialis* [A009] • Common scoter *Melanitta nigra* [A065] • Black-headed gull *Chroicocephalus ridibundus* [A179] • Common gull *Larus canus* [A182] • Herring gull *Larus argentatus* [A184] • Great Black-backed gull *Larus marinus* [A187] • Kittiwake *Rissa tridactyla* [A188] • Guillemot *Uria aalge* [A199] • Razorbill *Alca torda* [A200] • Little gull *Larus minutus* [A177] *Breeding waterbirds:* • Fulmar [A009] • Manx shearwater *Puffinus puffinus* [A013] • Shag *Phalacrocorax aristotelis* [A018] • Cormorant *Phalacrocorax carbo* [A017] • Lesser black-backed gull *Larus fuscus* [A183] • Herring Gull [A184] • Kittiwake [A188] • Roseate tern [A192] • Common tern [A193] • Arctic tern [A194] • Little tern *Sterna albifrons* [A195] • Guillemot [A199] • Razorbill [A200] • Puffin *Fratercula arctica* [A204]	6.8 km east

Designation [site code]	Summary of Special Conservation Interest(s)*/Designation Features	Distance and Direction from the Dublin Airport
Rogerstown Estuary SPA [004015] and Rogerstown Estuary Ramsar Site [412]	*Non-breeding waterbirds:* • Greylag goose *Anser anser* [A043] • Light-bellied brent goose [A046] • Shelduck [A048] • Shoveler [A056] • Oystercatcher [A130] • Ringed plover [A137] • Grey Plover [A141] • Knot [A143] • Dunlin [A149] • Black-tailed godwit [A156] • Redshank [A162] *Wetland habitats supporting waterbirds:* • Wetland and waterbirds [A999]	8 km north
Ireland's Eye SPA [004117]	*Breeding waterbirds:* • Cormorant [A017] • Herring gull [A184] • Kittiwake [A188] • Guillemot [A199] • Razorbill [A200]	10.1 km east
Howth Head Coast SPA [004113]	*Breeding waterbirds:* • Kittiwake [A188]	11.5 km east
Lambay Island SPA [004069]	*Non-breeding waterbirds:* • Greylag goose [A043] • Herring gull [A184] *Breeding waterbirds:* • Fulmar [A009] • Cormorant [A017] • Shag [A018] • Lesser black-backed gull [A183] • Herring Gull [A184] • Kittiwake [A188] • Guillemot [A199] • Razorbill [A200] • Puffin [A204]	14.6 km north-east
Bog of the Ring pNHA [001204]	This pNHA has been designated for peatland, marsh, and birds. It is located in a flat low-lying area with impeded drainage, showing signs of peat development in its upper horizons. Previously drained peatland but contains pockets of wet and damp ground where marsh vegetation occurs. Site used in winter by golden plover and whooper swan *Cygnus cygnus*. Breeding species include snipe, skylark *Alauda arvensis*, meadow pipit *Anthus pratensis*, reed bunting, stonechat *Saxicola rubicola*, and sedge warbler *Acrocephalus schoenobaenus*.	15.5 km north
Dalkey Islands SPA [004172]	*Breeding and passage (post-breeding/pre-mitigation roosting) waterbirds:* • Roseate tern [A192] • Common tern [A193] • Arctic tern [A194]	17.5 km south-east

4.1.2 Records of Protected & Important Species

Records of 60 protected and important bird species were returned by the NBDC and NPWS database search within 2km of the Dublin Airport within the last 30 years. The full list of species for which records were returned is provided in Annex B.

Records of 35 SCI bird species designated for the SPAs listed in the above Table 4-1 were returned from the database search. These were (in taxonomic order[24]):

- Light-bellied brent goose
- Shelduck
- Common scoter
- Goldeneye
- Red-breasted merganser
- Shoveler
- Pintail
- Teal
- Great crested grebe
- Oystercatcher
- Grey plover
- Golden plover
- Ringed plover
- Curlew
- Bar-tailed godwit
- Black-tailed godwit
- Redshank
- Knot
- Sanderling
- Dunlin
- Puffin
- Razorbill
- Guillemot
- Arctic tern
- Little gull
- Kittiwake
- Black-headed gull
- Herring gull
- Great black-backed gull
- Lesser black-backed gull
- Red-throated diver
- Great northern diver
- Fulmar
- Shag
- Cormorant

4.2 Non-Breeding Bird Survey Results

The full results of the non-breeding bird surveys are displayed in Figure 5. A summary of the results for each survey period is presented in the below sections.

4.2.1 2018/19 Non-breeding Bird Surveys

During the November 2018 to March 2019 survey period, 25 non-breeding bird surveys were carried out. This survey period is when the majority of the non-breeding bird survey effort was completed. A total of 53 species were recorded, summarised as follows:

- Eleven wetland bird species including:
  - Five non-breeding SCI of nearby designated sites (black-headed gull, common gull, curlew, golden plover, herring gull)
  - Two breeding SCI of nearby designated sites (herring gull, lesser black-backed gull)
  - One species listed on Annex I of the Birds Directive (golden plover)
  - Four Red listed species (curlew, golden plover, lapwing *Vanellus vanellus*, and snipe)
- Three raptor bird species including:
  - One species listed on Annex I of the Birds Directive (peregrine *Falco peregrinus*)
  - One Red listed species (kestrel *Falco tinnunculus*)
- Thirty-nine farmland birds (including five Red listed species (grey wagtail *Motacilla cinerea*, meadow pipit, redwing *Turdus iliacus*, stock dove *Columba oenas*, and yellowhammer *Emberiza citrinella*))

The largest flocks, and species most regularly occurring in large flocks between November 2018 and March 2019 were:

- Black-headed gull (largest flocks of 210 and 120 feeding birds and birds in flight)
- Lapwing (single flock of approximately 100 birds in flight)
- Linnet *Carduelis cannabina* (single flock of approximately 130 feeding birds)
- Starling *Sturnus vulgaris* (largest flocks of approximately 200 individuals, and regular flocks of approximately 100 birds)

4.2.1.1 Waterbirds

There were 227 records of waterbirds between November 2018 and March 2019. More than half of these records (140 records) represented birds in flight over the survey area. The remaining records of waterbirds were primarily feeding, loafing and/or roosting in grassland fields surrounding the airport and within fields that were previously present where North Runway (10L/28R) is now located (and thus now no longer exist).

[24] AviList Core Team. (2026). The Checklist v2025b. AviList: The Global Avian Checklist [online]. Available at: http://www.avilist.org/checklist/. Accessed: July 2026.

Two records of waterbirds were recorded on the ground within the Dublin Airport Site Boundary during this survey season, which were 53 black-headed gulls on 18 December 2018 and one black-headed gull on 07 December 2018 in SL4. The majority of waterbirds on the ground were located more than 100m from the Proposed Order with the exception of 28 curlew on 06 December 2018 located airside approximately 40m to the east of the existing road component of SL4 and 85 Black-headed gull and two curlew on 27 November 2018 located 50m and 80m respectively to the north-west of SL1 which has been converted into North Runway (10L/28R) since the time of survey.

Black-headed gull (non-breeding SCI bird species) was the most widespread and frequently recorded species during this survey season (134 total records). This species represented approximately 63% of the total waterbird individuals recorded and had a peak count of 210 individuals feeding within grassland between the northern and southern runways approximately 240m to the south-west of SL4 on 07 March 2019.

Common gull (non-breeding SCI bird species) were recorded relatively infrequently within the survey area (nine total records). The closest record was four individuals located in a grassland field approximately 220m south of SL4 on 07 February 2019. This species had a peak count of fifteen individuals feeding within grasslands approximately 650m north of SL10 on 30 January 2019.

Curlew (non-breeding SCI and Red listed species) were recorded 26 times and were mainly recorded in fields that have been converted into North Runway (10L/28R) since the time of survey. The closest record was 28 curlew located airside, approximately 40 m to the east of the existing road component of SL4 on 06 December 2018. The peak count of 84 curlew was recorded approximately 350m to the north of SL1 within lands that are currently North Runway (10L/28R).

Golden plover (non-breeding SCI, Annex I, and Red listed species) were recorded relatively infrequently within the survey area (six total records). The closest record was four golden plover in flight approximately 230 m north of SL4 within lands that are currently North Runway (10L/28R) on 29 January 2019. A record of 65 golden plover was also identified roosting in grassland approximately 350 m to the north of South Compound on 09 January 2019. A peak count of 85 golden plover was recorded in flight approximately 1.2km to the north-west of SL4 on 07 March 2019.

Herring gull (non-breeding and breeding SCI bird species) were mainly recorded in low numbers with 28 out of 34 records comprising birds in flight. A peak count of 12 birds was recorded feeding approximately 580m north-east of SL10 on 08 February 2019.

Lesser black-backed gull (breeding SCI bird species) were recorded infrequently, with four out of a total of five records comprising birds in flight. A peak count of nine birds was recorded feeding approximately 900 m west of the western road component of SL4 on 07 March 2019.

Lapwing (Red listed species) were also recorded infrequently, with a total of seven records. However, a peak count of 100 Lapwing was recorded flying approximately 180m west of Underpass beneath SL5 on 30 November 2018. The next highest count was 22 lapwing roosting in grassland located 1.4km south-west of SL12 on 07 February 2019.

Snipe (Red listed species) was recorded once and comprised a single individual in a grassland field approximately 1.0km north-east of SL4 on 08 February 2019.

Grey heron (two records), mallard (two records) and moorhen (one record) were also recorded in low numbers surrounding the airport during this survey season.

4.2.1.2 Raptors

Peregrine (Annex I species) were recorded in low numbers with a total of five records. This species was mainly recorded feeding, loafing and flying in fields approximately 600m to the north of SL4.

Kestrel (Red listed species) was observed flying over and hunting within the survey area with a total of six records. This species was mainly recorded in lands that are currently North Runway (10L/28R) and fields to the north of North Runway (10L/28R).

Buzzard *Buteo buteo* was recorded frequently in flight around the airport with a total of 44 records.

4.2.1.3 Farmland Birds

Farmland birds were noted throughout the surveys feeding, loafing and flying. Distribution of farmland bird species was mainly confined to areas of agricultural grassland outside Dublin Airport but within the wider survey area.

Red listed species including grey wagtail (peak count of one individual in flight), meadow pipit (peak count of 56 individuals in flight, typically recorded in lower numbers of between one and thirteen individuals), redwing (peak count of 30 individuals), stock dove (peak count of 43 individuals), and yellowhammer (peak count of thirteen individuals, typically recorded in lower numbers of between one and five individuals) were present during the surveys, albeit generally in low flock numbers. Other farmland birds including jackdaw, linnet, rook, starling and woodpigeon were recorded in larger flocks mainly in agricultural fields outside the Dublin Airport.

4.2.2 2019/20 Non-breeding Bird Surveys

During the September 2019 to March 2020 survey period, thirteen non-breeding bird surveys were carried out, primarily in the eastern side of Dublin Airport and wider areas nearby the motorways. A total of 32 species were recorded, summarised as follows:

- Fourteen wetland bird species including:
  - Five non-breeding SCI of nearby designated sites (black-headed gull, light-bellied brent goose, common gull, herring gull, and teal)
  - Two breeding SCI of nearby designated sites (cormorant and herring gull)
- Two raptor species (including one Red listed species (kestrel))
- Sixteen farmland birds (including two Red listed species (meadow pipit and redwing))

4.2.2.1 Waterbirds

There were 228 records of waterbirds between September 2019 and March 2020. The majority of these were located at a pond in Santry Park, approximately 1.5km south of the airport, and in grassland fields approximately 700m south of the airport and 1.0km north-east of the airport.

No waterbirds were recorded within the Proposed Order during this survey period. The closest record of waterbirds to the airport was a single herring gull located in a grassland field approximately 350m south-east of SL11 on 12 September 2019.

Black-headed gull (non-breeding SCI bird species) were recorded 45 times during the survey period and had a peak count of 72 individuals roosing nearby the pond in Santry Park, approximately 1.5km to the south of SL2 on 07 January 2020.

Common gull (non-breeding SCI bird species) were recorded eight times and had a peak count of 31 individuals feeding approximately 1.2km north-east of SL10 on 10 March 2020. However, this species was typically recorded in low numbers of approximately one or two individuals in the wider survey area.

Cormorant (breeding SCI bird species) was recorded once, with one individual identified in the pond in Santry Park approximately 1.5km south of SL2 on 15 November 2019.

Herring gull (non-breeding and breeding SCI bird species) were recorded 64 times and had a peak count of 46 birds roosting in a grassland field approximately 600m south of SL11 on 15 November 2019.

Light-bellied brent goose (non-breeding SCI bird species) was recorded once, with 40 individuals identified approximately 1.4km north-east of SL10 on 08 October 2019.

Teal (non-breeding SCI bird species) was recorded once, with two individuals feeding at the pond in Santry Park, approximately 1.5km to the south of SL2 on 12 September 2019.

Additional wetland species including coot (28 records), gadwall (two records), grey heron (three records), little grebe (28 records), mallard (43 records), moorhen (27 records), mute swan (12 records), and tufted duck (15 records) were recorded mainly nearby the pond in Santry Park.

4.2.2.2 Raptors

Kestrel (Red listed species) was observed flying over and hunting within the survey area, with a total of three records located approximately 1.2km north-east of SL10.

Buzzard was recorded six times during the survey period also in the grassland fields approximately 1.2km north-east of SL10.

4.2.2.3 Farmland Birds

Farmland birds were noted throughout the surveys. Distribution of bird species was mainly confined to areas of agricultural grassland outside Dublin Airport but within the wider survey area. The closest record of farmland bird was hooded crow located approximately 200m to the south of SL11.

The Red listed species meadow pipit (one individual approximately 500m south of SL11) and redwing (three individuals approximately 1.3km north-east of SL10) were present during the surveys, albeit in low flock numbers. Other farmland birds including jackdaw (peak 90 individuals), rook (peak 180 individuals), starling (peak 300 individuals) and woodpigeon (peak 145 individuals) were recorded in larger flocks in agricultural fields outside the Dublin Airport.

4.2.3 2021 Non-breeding Bird Surveys

Two non-breeding bird surveys were carried out in January and February 2021 to collect supplemental data (28 January 2021 and 05 February 2021). A total of 24 species were recorded:

- Three wetland bird species including:
  - Three non-breeding SCI of nearby designated sites (black-headed gull, curlew, and herring gull)
  - One breeding SCI of nearby designated sites (herring gull)
  - One Red listed species (curlew)
- One raptor species (buzzard, which is not considered important in this Technical Appendix)
- Twenty farmland birds (including three Red listed species (grey wagtail, redwing, and yellowhammer))

The most frequently recorded birds in larger flocks were woodpigeon (peak count 210 individuals), black-headed gull (peak count 150 individuals), and starling (peak count 130 individuals). These larger flocks were all recorded in agricultural fields in the wider area outside of Dublin Airport.

4.2.3.1 Waterbirds

Waterbirds were noted feeding, roosting, and preening throughout the survey area, mainly in agricultural fields outside of Dublin Airport. There was a single record of a waterbird within the Dublin Airport Site Boundary, which was fifteen black-headed gulls flying over SL4 on 28 January 2021. There were no other records of waterbirds within the Proposed Order. The most common waterbird species noted within the Dublin Airport Site Boundary was black-headed gull, with a peak count of 150 in flight.

Black-headed gulls (non-breeding SCI bird species) were recorded ten times during the survey period mainly in flight or within fields located outside of Dublin Airport. As described above, a peak count of 150 individuals was recorded on 28 January 2021 in flight over fields and nearby the air traffic control tower approximately 250m east of SL4. Also, fifteen black-headed gulls were recorded flying over SL4 on 28 January 2021. The majority of records were gulls in flight. Black-headed gull on the ground was mainly located in fields approximately 500m south-east of SL9.

Curlew (non-breeding SCI bird species, Red listed) were only recorded once during this survey period. 80 individuals were recorded feeding on 05 February 2021 in a field with horses approximately 500m south-east of SL9 on the other side of the motorway from the Dublin Airport Site Boundary.

Herring gull (non-breeding and breeding SCI bird species) were recorded twice during the survey period with four individuals recorded 500m south-east of SL9 on 05 February 2021 and three individuals recorded 700m south-east of SL9 on 28 January 2021.

Peak counts of important waterbirds recorded in 2021 are shown in Table 4-2.

Table 4-2: Peak Counts of Important Waterbirds (2021)

Species	Conservation Status	Peak Count of Birds and Location	Activity
Curlew	SCI, Red listed	80, in field c. 500 m south-east of SL9	Feeding
Black-headed gull	SCI, Amber listed	150, c. 250 m east of SL4	Circling over fields and nearby air traffic control tower
Herring Gull	SCI, Amber listed	4, c. 500 m south-east of SL9	Feeding

4.2.3.2 Raptors

Buzzard was observed five times, mainly in trees and hunting in grassland fields in the wider survey area around the airport.

4.2.3.3 Farmland Birds

Farmland birds were noted throughout the survey area feeding, preening and flying. Distribution of farmland bird species was mainly confined to areas of agricultural grassland between the north and south runway and to the north and south-east of Dublin Airport within the wider survey area.

Red listed species included grey wagtail (with a peak of one individual), redwing (peak 15 individuals), and yellowhammer (peak two individuals). Other farmland birds including starling (peak 130 individuals) and woodpigeon (peak 210 individuals) were recorded in larger flocks, mainly in agricultural fields outside the Dublin Airport.

Peak counts of important farmland birds recorded in 2021 are shown in Table 4-3.

Table 4-3: Peak Counts of Important Farmland Birds (2021)

Species	Conservation Status	Peak Number of Birds and Location	Activity
Redwing	Red listed	15, within the northern field of SL4	Feeding
Grey wagtail	Red listed	1, 1km north of SL1	Feeding
Yellowhammer	Red listed	2, c. 650 m north of SL10	Feeding

4.2.4 2022/23 Non-Breeding Bird Surveys

During the October 2022 to March 2023 survey period, six non-breeding bird surveys were carried out.

A total of twelve species were recorded, summarised as follows:

- Seven wetland bird species including:
  - Five non-breeding SCI of nearby designated sites (black-headed gull, common gull, curlew, golden plover, and herring gull)
  - One breeding SCI of nearby designated sites (herring gull)
  - One species listed on Annex I of the Birds Directive (golden plover)
  - Four Red listed species (curlew, golden plover, lapwing, and snipe)
- Two raptor species (Green listed species buzzard and sparrowhawk *Accipiter nisus*)
- Three species were farmland birds (including one Red listed species (Redwing))

The largest flocks, and species most regularly occurring in large flocks included:

- Starling (largest flock of 58 individuals feeding within a grassland field approximately 500m south-east of SL9 on the eastern side of the motorway)
- Curlew (largest flock of 43 roosting birds within a grassland field approximately 400m south-east of SL9 on the eastern side of the motorway)
- Lapwing (largest flock of approximately 42 loafing birds within grassland fields between the north and south runway approximately 130m south-west of SL4
- Black-headed gull (largest flock of 40 gulls in flight approximately 800 m north of SL4)

4.2.4.1 Waterbirds

There were 66 records of waterbirds between October 2022 and March 2023, and 28 of these records comprised birds in flight. The most frequently recorded species during the surveys were black-headed gull and herring gull. Waterbirds were mainly recorded within areas of grassland during the field surveys, mainly between the north and south runway and in the wider survey area. There were two records of Black-headed gull, two records of common gull, one record of golden plover, two records of herring gull, and one record of lapwing within SL4. All other waterbirds were recorded more than 50m from the Dublin Airport Site Boundary.

Black-headed gull (non-breeding SCI bird species) were recorded 26 times during the survey period, mainly in flight or in grassland fields outside of the airport. On 26 January 2023, 27 individual black-headed gulls were recorded feeding in the northernmost field of SL4. Nine individuals were also recorded feeding in this field of SL4 on 13 December 2022. A peak count of 40 individuals was recorded in flight approximately 800m to the north of SL4.

Common gull (non-breeding SCI bird species) were recorded three times during the survey period in low numbers. An individual bird was recorded in grassland field of SL4 on 13 December 2022. Two individuals was the peak count for this species which was recorded in SL4 on 26 January 2023.

Curlew (non-breeding SCI bird species) were recorded seven times during the survey period with a peak count of 43 individuals approximately 400m south-east of SL9. All records of curlew were located in a grassland field over 300m to the south-east of SL9 on the eastern side of the motorway.

Golden plover (non-breeding SCI bird species) were recorded twice and had a peak count of 35 individuals approximately 100m south-west of SL4. Twelve individuals were recorded feeding in the grassland field of SL4 on 13 December 2022.

Herring gull (non-breeding and breeding SCI bird species) were recorded 24 times during the survey period mainly in flight or in grassland fields outside the airport. Ten individuals were recorded in SL4 on 26 January 2023 and five individuals were recorded in SL4 on 24 November 2022. A peak count of 32 individuals was recorded, with birds feeding in grassland approximately 120 m to the east of SL10 in the Halpenny Driving Range.

Lapwing (Red listed) were recorded three times with a peak count of 42 individuals approximately 140m south-west of SL4. 26 individuals were recorded feeding in SL4 on 13 December 2022.

One individual snipe (Red listed) was recorded flying approximately 150m south of SL9.

Peak counts of important waterbirds recorded between 2022 and 2023 are shown in Table 4-4.

Table 4-4: Peak Counts of Important Waterbirds (2022-2023)

Species	Conservation Status	Peak Number of Birds and Location	Activity
Black-headed gull	Amber listed	40, *c.* 800 m north of SL4	In flight
Common gull	Amber listed	Two, within SL4	Roosting
Curlew	Red listed	43. *c.* 400 m south-east of SL9	Roosing
Golden plover	Red listed	35, *c.* 100 south-west of SL4	Not determined
Herring gull	Amber listed	32, *c.* 120 m east of SL10	Feeding
Lapwing	Red listed	42, *c.* 140 m south-west of SL4	Loafing
Snipe	Red listed	1, c. 150 m south of SL9	In flight

4.2.4.2 Raptors

Both buzzard (two records) and sparrowhawk (one record) were noted flying over grassland fields within the Dublin Airport Site Boundary.

4.2.4.3 Farmland Birds

Farmland birds were mainly observed feeding in grassland fields between north and south runway and grassland fields in the wider area outside of the airport.

Redwing (Red listed bird) were recorded five times during the survey period with a peak count of 28 individuals observed in SL4 on 13 December 2022. Other birds included an individual mistle thrush in grassland fields between north and south runway, and four records of starling in grassland fields. There was a peak count of 58 starling approximately 500m to the south-east of SL9. There were also twelve starlings observed in SL4 on 13 December 2022.

Peak counts of important farmland birds recorded between 2022 and 2023 are shown in Table 4-5.

Table 4-5: Peak Counts of Important Farmland Birds (2022-2023)

Common Name	Conservation Status	Peak Number of Birds and Location	Activity
Redwing	Red listed	28, within SL4	Feeding

4.2.5 2024/25 Non-breeding Bird Surveys

During the survey period, seven non-breeding bird surveys were carried out. A total of 22 species were recorded, summarised below, as well as in Table 4-6. The results of the field surveys are shown on Figure 6d.

- Five waterbird bird species comprising:
  - Four non-breeding SCI of nearby designated sites (black-headed gull, common gull, curlew and herring gull)
  - One breeding SCI of nearby designated sites (herring gull)
  - One Red listed species (curlew)
- Two raptor species (Red listed kestrel and Green listed buzzard)
- Fifteen species were farmland birds (including one Red listed species, meadow pipit)

The largest flocks, and species most regularly occurring in large flocks included:

- Starling (largest flock of 300 individuals calling on grassland approximately 70m east of SL4)
- Curlew (largest flock of 42 feeding birds within a grassland field approximately 270m south-east of SL4)
- Herring gull (largest flock of 33 feeding birds within an agricultural field approximately 670m south of SL5)
- Black-headed gull (largest flock of 25 roosting birds within an agricultural field approximately 560m south-west of SL2)

4.2.5.1 Waterbirds

There were 65 records of waterbirds between September 2025 and March 2025, with 32 of these records comprising birds in flight. The most frequently recorded species during the surveys were herring gull (20 records) and black-headed gull (23 records). Waterbirds were mainly recorded within areas of grassland, primarily south of the south runway and east of SL10, within the Halpenny golf course and in the wider survey area. Records captured from within the Dublin Airport Site Boundary comprise:

- One record of curlew (comprising 14 individuals) feeding on grassland within SL5
- Herring gull records (comprising mainly single individuals or small numbers of less than five individuals) flying over SL10, SL11, SL2 and SL9
- One record of black-headed gull (one individual) flying over SL4

All other waterbirds were recorded outside of the Dublin Airport Site Boundary.

Table 4-6: Peak Counts of Important Waterbirds (2024-2025)

Common Name	Conservation Status	Peak Number of Birds and Location	Activity
Curlew	Red listed	42, 270m south-east of SL4	Feeding
Black-headed gull	Amber listed	25, 560m south-west of SL2	Roosting
Common gull	Amber listed	One, c. 200m east of SL10	Feeding
Herring gull	Amber listed	33, 670m south of SL5	Feeding

4.2.5.2 Raptors

Both buzzard (three records) and kestrel (one record) were noted roosting (perched) over grassland fields within the Dublin Airport Site Boundary. One of these buzzard records was from within SL4, while the remaining records were located more than 50m beyond the Dublin Airport Site Boundary. The kestrel was recorded approximately 35m north of SL4.

4.2.5.3 Farmland Birds

Farmland birds were mainly observed feeding in grassland fields between the north and south runway and grassland fields in the wider area outside of the airport. Of these, one species is classified as important (Red listed meadow pipit),

Meadow pipit was recorded six times during the survey period with a peak count of three individuals observed flying 250m north of SL4. All Meadow Pipits were recorded feeding or calling outside the Dublin Airport Site Boundary. The closest meadow pipit recorded was an individual feeding approximately 45 m west of SL4. Other birds recorded include 14 records of Amber listed starling, primarily within grassland habitats. The peak count of 300 starling was recorded approximately 70m to the south-east of SL4, with a notable count of 85 also recorded within SL4 on 08 January 2025. No other important farmland birds were recorded during the September 2024 and March 2025 survey period.

4.2.6 Non-breeding Bird Summary (2018 to 2025)

Eighteen important bird species were recorded between 2018 and 2025, which comprised seven non-breeding SCI bird species, three breeding SCI bird species (species which are SCI of SPAs as breeding birds; not birds which were found to be breeding within the survey area), two Annex I bird species and ten Red listed bird species.

Table 4-6 below details these important species recorded between 2018 and 2023 including the maximum number of individuals present during a single sighting at any one survey (the peak count) and the number of individuals present for the closest record to the Dublin Airport Site Boundary. Table 4-7 details the relative percentage of the national population and populations of each SCI bird of SPAs with potential connectivity that was recorded within the survey area.

The results of the non-breeding bird surveys are shown on Figure 5.

Table 4-7: Summarised Results of Important Bird Species Recorded during the Non-Breeding Bird Surveys from 2018 to 2025

Conservation Status					Peak Count			Peak Count of Closest Record to the Proposed Order		
Species	Non-Breeding SCI	Breeding SCI	BoCCI Red List	Annex I	Peak Count	Location(s)	Date(s)	Peak Count	Location(s)	Date(s)
Light-bellied Brent Goose	✓				40	1.4km north-east of SL10	08/10/2019	40	1.4km north-east of SL10	08/10/2019
Teal	✓				2	1.5km south of SL2	12/09/2019	2	1.5km south of SL2	12/09/2019
Stock Dove			✓		43	1.9km west of SL12	07/02/2019	6	250m north of SL10	08/03/2019
Golden Plover	✓		✓	✓	85	1.2km north-west of SL4 (in flight)	07/03/2019	12	Within SL4	13/12/2022
Lapwing			✓		100	180m west SL5 (in flight)	30/11/2018	26	Within SL4	13/12/2022
Curlew	✓		✓		84	350m north of SL1	30/01/2019	28	40 m east of SL4	06/12/2018
Snipe			✓		1	1.0km north-east of SL4; 150m south of SL9 (in flight)	08/02/2019, 13/12/2022	1	150m south of SL9 (in flight)	13/12/2022
Black-headed Gull	✓				210	240m south-west of SL4	07/03/2019	53	Within SL4	18/12/2018
Common Gull	✓				31	1.2km north-east of SL10	10/03/2020	2	Within SL4	26/01/2023
Herring gull	✓	✓			46	600m south SL11	15/11/2019	10	Within SL4	26/01/2023

Conservation Status					Peak Count			Peak Count of Closest Record to the Proposed Order		
Species	Non-Breeding SCI	Breeding SCI	BoCCI Red List	Annex I	Peak Count	Location(s)	Date(s)	Peak Count	Location(s)	Date(s)
Lesser Black-backed Gull		✓			9	900m west of SL4	07/03/2019	1	500 m east of SL11 (in flight)	08/03/2019
Cormorant		✓			1	1.5km south of SL2	15/11/2019	1	1.5km south of SL2	15/11/2019
Kestrel			✓		2	1.2km north-east of SL10	30/01/2019	1	Within SL4 (in flight)	15/02/2019
Peregrine				✓	1	600m north of SL4; 1.0km north-east of SL4; and 800m east of SL9	08/01/2019, 09/01/2019, 29/01/2019, 30/01/2019, 07/02/2019	1	600m north of SL4	09/01/2019
Redwing			✓		30	Within SL4	07/02/2019	30	Within SL4	07/02/2019
Grey wagtail			✓		1	560m north-east of SL11; 1.6 km south-west of SL12 (in flight)	08/03/2019	1	560 m north-east of SL11	08/03/2019
Meadow pipit			✓		56	800m east of SL9 (in flight)	08/03/2019	5	Within SL4	07/02/2019
Yellowhammer			✓		13	700m north of SL10	14/02/2019	1	Within SL4	14/02/2019

Table 4-8: SCI Bird Species Recorded during the Non-Breeding Bird Surveys from 2018 to 2025

Species Name	Peak Count of all Survey Data	1% National population threshold[25]	% of National Population Represented by Peak Count	% Of Malahide Estuary SPA Population Represented by Peak Count[26]	% Of Baldoyle Bay SPA Population Represented by Peak Count[15]	% Of South Dublin Bay and River Tolka Estuary SPA Population Represented by Peak Count[15]	% Of North Bull Island SPA Population Represented by Peak Count[15]	% Of North-west Irish SPA Population Represented by Peak Count[15]	% Of Rogerstown Estuary SPA Population Represented by Peak Count[15]	% Of Irelands Eye SPA Population Represented by Peak Count[15]	% Of Lambay Island SPA Population Represented by Peak Count[15]
Light-bellied brent goose	40	350	0.11	2.96	3.13	1.15	1.15	N/A	3.44	N/A	N/A
Teal	2	360	<0.01	N/A	N/A	N/A	0.14	N/A	N/A	N/A	N/A
Golden plover	85	920	0.09	4.47	2.43	N/A	87.6	N/A	N/A	N/A	N/A
Curlew	84	350	0.24	N/A	N/A	N/A	9.16	N/A	N/A	N/A	N/A
Black-headed gull	210	N/A	N/A	N/A	N/A	7.16	7.16	41.34	N/A	N/A	N/A
Common gull	31	N/A	N/A	N/A	N/A	N/A	N/A	1.08	N/A	N/A	N/A
Herring gull	46	N/A	N/A	N/A	N/A	N/A	N/A	0.66	N/A	N/A	1.27
Lesser black-backed gull	9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[25] 1% National population threshold numbers are based on the most recent IWeBS data available from the IWeBS Website. Any species data not available was entered in as N/A. https://birdwatchireland.ie/app/uploads/2021/05/Fitzgerald-et-al-2021-I-WeBS-Report-2016-17-2017-18-S23-24.pdf

[26] The % of each relevant SPA population is based on the most recent population estimate data for each SCI non-breeding bird on the NPWS Conservation Objectives documents. Only birds that are designated for their non-breeding bird populations for these relevant SPAs are considered as 'SCI' within this Table 4.F (i.e., any birds not designated or only designated for their breeding bird populations are considered as 'N/A'). Note that in the Conservation Objectives Supporting Documents for South Dublin Bay River and Tolka Estuary SPA and North Bull Island SPA the most recent mean peak number for SCI birds are combined for these two SPAs.

4.3 Breeding Bird Survey Results & Territory Analysis

The full results of the breeding bird surveys are given in Annex D. A summary of the results for each survey period is presented in the following sections. The locations of bird species recorded during the breeding bird surveys is shown in Figure 6. The results of the territory analysis for 2022 and 2024 are shown in Figure 7.

4.3.1 2019 Breeding Bird Surveys

A total of 29 species were recorded during the breeding bird surveys carried out in April, June, July, and August 2019. Of those, one (meadow pipit) is considered to be important (as per Section 3.1). Meadow pipit was recorded singing three times across the survey area, nearby SL4 and SL5, and within SL2. Therefore, meadow pipit was considered to have held possible breeding territories in these three areas. However, these are all located airside and under management for birds.

Furthermore, only Red and Amber listed birds singing during the survey were digitised into geospatial data, which included goldcrest, greenfinch, meadow pipit, robin, and skylark. twenty-three other bird species were also noted throughout the survey area, which included songbirds such as blackbird, bullfinch, and chaffinch, and common waterbirds such as grey heron and mallard. No evidence of breeding waterbirds or other important birds were recorded during the surveys.

4.3.2 2022 Breeding Bird Surveys

A total of 38 species were recorded during the breeding bird surveys carried out in May and June 2022. Of those, three (meadow pipit, swift *Apus apus*, and yellowhammer) are considered to be important (as per Section 3.1). Meadow pipit was mainly recorded singing and calling in SL9. One yellowhammer was also recorded singing approximately 800 m south-west of SL12. No evidence of breeding waterbirds or other important birds were recorded during the surveys. Swift was mainly recorded flying in SL4 and no evidence of nests was found.

Two important species, meadow pipit and yellowhammer, are considered to have held breeding territories within the survey area during the 2022 breeding season. The number of territories held by these species is set out in Table 4-8.

Table 4-9: Results of 2022 Territory Analysis (Important Species)

Species	Conservation Status	Number of Territories			Comment
		Confirmed	Probable	Possible	
Meadow pipit	Red listed	0	1	0	Two meadow pipits were noted singing and four were displaying territorial behaviour in grassland fields during the same survey in May 2022 in the area of SL9.
Yellowhammer	Red	0	0	1	One individual yellowhammer was recorded singing on one occasion in May 2022 within SP07.

4.3.3 2024 Breeding Bird Surveys

A total of 36 species were recorded during the breeding bird surveys carried out in May and June 2024. Of those, four Red listed species (kestrel, meadow pipit, red kite *Milvus milvus,* and swift) are considered to be important. Eight Amber listed species, 23 Green listed species, and one domestic duck were also recorded during surveys. Red kite was observed flying and attempting to hunt to the west of and partially within SL2 on 16 May 2024. However, it was unsuccessful in hunting for food. Kestrel was observed flying over SL4 on 27 June 2024. One swift was also recorded in flight to the west of SL9.

One important species, meadow pipit, is considered to have held breeding territories within the survey area during the 2024 breeding season. Meadow pipit was mainly recorded in SL4 and SL12. There was also one record of meadow pipit to the west of SL9 and one to the south-east of the western road component of SL4. The number of territories held by this species is set out in Table 4-9. No evidence of breeding waterbirds or other important birds were recorded during surveys.

Table 4-10: Results of 2024 Territory Analysis (Important Species)

Species	Conservation Status	Number of Territories			Comment
		Confirmed	Probable	Possible	
Meadow pipit	Red listed	0	9	3	A total of 54 meadow pipit individuals were noted in suitable grassland habitats and 20 of these were observed singing. The majority of records were noted within SL12. Several records were also noted within SL4. A single record was also noted near SL9 and SL4.

4.3.4 2025 Breeding Bird Surveys

Breeding bird surveys were undertaken in the survey area in July and August 2025[27]. In total, three Red listed and 12 Amber listed BoCCI species were recorded across the survey area. The majority (n=24) of birds recorded within the survey area in 2025 were Green listed species and are not considered to be of conservation concern in Ireland. The Red listed species recorded comprised curlew, swift and meadow pipit. There were two records of curlew in 2025, with a flock of 31 individuals in flight over SL4 and three individuals (one adult and two juvenile birds) observed foraging to the east of SL4 within the Dublin Airport Site Boundary. Meadow pipit were recorded calling in flight over SL2 and SL4, while swift was recorded once (four individuals) in flight foraging over the western section of SL4. None of the recorded Red listed bird species were considered breeding within the survey area at the time of survey[27].

However, it should be noted that the surveys were undertaken late in the breeding season in 2025, beyond the core breeding period for meadow pipit and at the end of the core breeding period for curlew[28]. While two juvenile curlew were recorded foraging with an adult in the survey area to the east of SL4 within the Dublin Airport Site Boundary, given the short sward height of the grassland to the east of SL4, combined with the high levels of anthropogenic disturbance in this area stemming from the airport activities, it is considered highly unlikely that the curlew recorded bred within the Dublin Airport Site Boundary. When considering that meadow pipit was concluded to be a probable breeder within the survey area in 2022 and 2024, the potential for the species to have bred within the survey area in 2025 prior to the breeding bird survey visits cannot be confidently ruled out.

Amber listed species recorded during the 2025 breeding season survey visits are as follows, with species presented in bold font considered likely to have bred within the survey area in 2025[27]:

- Herring gull
- Lesser black-backed gull
- **Skylark**
- **Swallow**
- **House martin**
- **Willow warbler**
- **Goldcrest**
- **Starling**
- **Spotted flycatcher**
- House sparrow
- **Greenfinch**
- Linnet

[27] Woodrow APEM Group (2025). Dublin Airport Infrastructure – Ecology Survey Results Technical Note. Woodrow APEM Report P00018251. AECOM, 20251127, V02.
[28] Ferguson-Lees, J., Castell, R. and Leech, D. (2011). A Field Guide to Monitoring Nests. Thetford: British Trust for Ornithology.

5. Summary

5.1 Non-breeding Birds

Between 2018 and 2023 a total of 19 waterbird species, four raptor species, and 39 farmland bird species were recorded within the survey area. Eighteen important bird species (as per Section 3.1) were recorded which included the following:

- Seven non-breeding SCI bird species (black-headed gull, common gull, curlew, golden plover, herring gull, light bellied brent goose, and teal)
- Three breeding SCI bird species (cormorant, herring gull, and lesser black-backed gull (no evidence of these species breeding within the survey area was found))
- Two Annex I bird species (golden plover and peregrine)
- Ten Red listed bird species (curlew, golden plover, grey wagtail, kestrel, lapwing, meadow pipit, redwing, snipe, stock dove, and yellowhammer)

The results of the non-breeding bird surveys indicate that non-breeding birds were distributed throughout the survey area, mainly within grassland fields between North Runway (10L/28R) and South Runway (10R/28L) and outside of Dublin Airport. Similar grassland fields are present in abundance in the wider area surrounding the airport.

5.2 Breeding Birds

During the 2019, 2022, 2024 and 2025 surveys a total of 50 bird species were recorded within the survey area (Annex D), of which six are Red listed, comprising:

- Curlew
- Swift
- Red kite
- Kestrel
- Meadow pipit
- Yellowhammer

There was no confirmed breeding evidence of any birds during the surveys. Meadow pipit was considered to hold approximately three possible breeding territories nearby SL4, SL5, and within SL2 in 2019. However, these are all located airside and under management for birds. Meadow pipit was also considered to hold approximately one probable breeding territory in SL9 area in 2022, seven probable territories in SL4 and SL12 in 2024, two probable territories and one possible territory in SL4 in 2024, one possible territory to the west of SL9 in 2024, and another possible territory to the south-east of the western road component of SL4 in 2024. Furthermore, whole meadow pipit was not recorded breeding within the survey area in 2025, this result cannot be confidently confirmed due to the timing of the surveys which were late in the breeding season. Yellowhammer was considered to hold one possible territory in SP07, to the west of the existing Blue Car Park in 2022, which is approximately 800m south-west of SL12.

There was no breeding evidence of waterbirds or any other important bird species such as swift, kestrel and red kite, which were all observed in flight. There is generally suitable habitat for common breeding songbirds in the grassland fields, hedgerows, and treelines outside of Dublin Airport mainly between the North Runway (10L/28R) and South Runway (10R/28L) and in the wider area surrounding the airport.

6. Figures

Annex A Non-breeding Bird Survey Details

Table A1: Non-breeding Bird Survey Details

Date	Surveyor(s)	Average Temperature (C)	Wind (Beaufort Scale[29])	Precipitation
27/11/2018	EV	10	3-5	None
28/11/2018	EV	14	2-4	Drizzle
29/11/2018	EV	8	1-3	None
30/11/2018	EV	7	2-4	Drizzle
06/12/2018	EV	12	2-4	None
07/12/2018	EV	7	2-4	None
13/12/2018	EV/CC	7	6-7	Drizzle
14/12/2018	EV/CC	6	5-6	None
17/12/2018	CC	9	2	None
18/12/2018	CC	10	0-1	Drizzle
19/12/2018	EV/LC	7	2-3	None
07/01/2019	CC/GT	10	3	Light rain
08/01/2019	CC/GT	7	3-4	None
09/01/2019	CC/GT	9	1-2	None
28/01/2019	CC/GT	6	3-4	None
29/01/2019	CC/GT	4	4	Light showers
30/01/2019	CC/GT	3	3-4	Drizzle
07/02/2019	CC/GT	6	4	None
08/02/2019	CC/GT	7	5	Light showers
14/02/2019	CC/GT	11	0	None
15/02/2019	CC/GT	13	1-3	None
07/03/2019	CC/GT	9	3-4	Mixed Showers
08/03/2019	CC/GT	8	1-4	Rain
28/03/2019	CC/GT	13	1	None
29/03/2019	CC/GT	11	2-3	None
06/09/2019	AD	13	5	Showers
12/09/2019	AD	12	3	None
08/10/2019	PL	12	3	None
30/10/2019	AF/AD	9	4	None
15/11/2019	AD	6	4	None
21/11/2019	AD	6	3	Showers
05/12/2019	EV	8	4	None
12/12/2019	EV	6	2	None
07/01/2020	EV	10	4	Showers
23/01/2020	EV	7	2	Showers
11/02/2020	EV	3	4	Drizzle

[29] 0 – calm; 1- light air; 2 – light breeze; 3 – gentle breeze; 4 – moderate breeze; 5 – fresh breeze; 6 – strong breeze; 6 – near gale

Date	Surveyor(s)	Average Temperature (C)	Wind (Beaufort Scale29)	Precipitation
14/02/2020	EV	10	4	Drizzle
10/03/2020	EV	10	4	Showers
18/03/2020	EV	7	2	Dry
28/01/2021	AD	10	2	Dry
05/02/2021	AD	4	2	Drizzle
19/10/2022	AD	12	2	Rain
24/11/2022	AD	9	2	Rain
13/12/2022	AD	4	1	Dry
26/01/2023	AD	4	1	Dry
28/02/2023	AD	8	2	Dry
30/03/2023	AD	10	1	Dry
16/09/2024	PL	18.5	1	Dry
21/10/2024	AD	7	1	Dry
21/11/2024	AD	3	1	Dry
06/12/2024	AD	6.5	2	Dry
08/01/2025	AD	1.5	2	Dry
05/02/2025	AD	4	0	Dry
04/03/2025	AD	7	1	Dry

Annex B Important Species Records

Table B1: Protected and Important Bird Species Returned by NBDC and NPWS Database Search

Species Name	Scientific Name	Record Count	Date of Last Record	SCI Species	BOCCI Red List	Annex I
Arctic tern	*Sterna paradisaea*	3	31/12/2011	✓		✓
Barn owl	*Tyto alba*	7	31/12/2011		✓	
Bar-tailed godwit	*Limosa lapponica*	3	31/12/2011	✓	✓	✓
Black-headed gull	*Larus ridibundus*	12	31/12/2011	✓		
Black-necked grebe	*Podiceps nigricollis*	1	31/12/2011		✓	
Black-tailed godwit	*Limosa limosa*	3	31/12/2011	✓	✓	
Black-throated diver	*Gavia arctica*	1	31/12/2011			✓
Common scoter	*Melanitta nigra*	2	31/12/2011	✓	✓	
Cormorant	*Phalacrocorax carbo*	6	31/12/2011	✓		
Curlew	*Numenius arquata*	7	31/12/2011	✓	✓	
Dunlin	*Calidris alpina*	4	31/12/2011	✓	✓	
Fulmar	*Fulmarus glacialis*	4	31/12/2011	✓		
Golden plover	*Pluvialis apricaria*	4	31/12/2011	✓	✓	✓
Goldeneye	*Bucephala clangula*	3	31/12/2011	✓	✓	
Great black-backed gull	*Larus marinus*	7	31/12/2011	✓		
Great crested grebe	*Podiceps cristatus*	3	31/12/2011	✓		
Great northern diver	*Gavia immer*	2	31/12/2011	✓		✓
Greater scaup	*Aythya marila*	3	31/12/2011		✓	
Grey partridge	*Perdix perdix*	3	31/12/2011		✓	
Grey plover	*Pluvialis squatarola*	3	31/12/2011	✓	✓	
Grey wagtail	*Motacilla cinerea*	13	07/03/2022		✓	
Guillemot	*Uria aalge*	5	31/12/2011	✓		
Hen harrier	*Circus cyaneus*	1	08/10/2016			✓
Herring gull	*Larus argentatus*	11	31/12/2011	✓		
Kestrel	*Falco tinnunculus*	18	15/03/2023		✓	
Kingfisher	*Alcedo atthis*	9	31/12/2011			✓
Kittiwake	*Rissa tridactyla*	4	31/12/2011	✓	✓	
Knot	*Calidris canutus*	2	31/12/2011	✓	✓	
Lesser black-backed gull	*Larus fuscus*	6	31/12/2011	✓		
Light-bellied brent goose	*Branta bernicla*	4	31/12/2011	✓		
Little egret	*Egretta garzetta*	5	31/12/2011			✓
Little gull	*Larus minutus*	3	31/12/2011	✓		✓
Long-tailed duck	*Clangula hyemalis*	2	31/12/2011		✓	
Meadow pipit	*Anthus pratensis*	13	15/03/2023		✓	
Mediterranean gull	*Larus melanocephalus*	2	31/12/2011			✓
Merlin	*Falco columbarius*	2	31/12/2011			✓
Lapwing	*Vanellus vanellus*	13	31/12/2011		✓	
Oystercatcher	*Haematopus ostralegus*	8	31/12/2011	✓	✓	
Peregrine	*Falco peregrinus*	6	01/06/2021			✓
Pintail	*Anas acuta*	2	31/12/2011	✓		
Puffin	*Fratercula arctica*	3	31/12/2011	✓	✓	
Purple sandpiper	*Calidris maritima*	1	31/12/2011		✓	

Species Name	Scientific Name	Record Count	Date of Last Record	SCI Species	BOCCI Red List	Annex I
Razorbill	*Alca torda*	4	31/12/2011	✓	✓	
Red-breasted merganser	*Mergus serrator*	3	31/12/2011	✓		
Redshank	*Tringa totanus*	8	31/07/2014	✓	✓	
Red-throated diver	*Gavia stellata*	2	31/12/2011	✓		✓
Redwing	*Turdus iliacus*	8	31/12/2011		✓	
Ringed plover	*Charadrius hiaticula*	5	31/12/2011	✓		
Ruff	*Philomachus pugnax*	2	31/12/2011			✓
Sanderling	*Calidris alba*	2	31/12/2011	✓		
Shag	*Phalacrocorax aristotelis*	5	31/12/2011	✓		
Shelduck	*Tadorna tadorna*	9	31/12/2011	✓		
Short-eared owl	*Asio flammeus*	4	31/12/2011			✓
Shoveler	*Anas clypeata*	2	31/12/2011	✓	✓	
Snipe	*Gallinago gallinago*	9	24/03/2022		✓	
Swift	*Apus apus*	14	31/12/2011		✓	
Teal	*Anas crecca*	4	31/12/2011	✓		
Whooper swan	*Cygnus cygnus*	2	31/12/2011			✓
Woodcock	*Scolopax rusticola*	3	31/12/2011		✓	
Yellowhammer	*Emberiza citrinella*	17	02/05/2021		✓	

Annex C Full List of Bird Species Recorded during the Breeding Bird Surveys

Table C1: Breeding Bird Species Recorded during Breeding Bird surveys and their Conservation Designation

BTO Code	Species	Scientific Name	Survey Year(s)	Conservation Designation(s)	Considered to be Important in this Appendix?
B.	Blackbird	*Turdus merula*	2019, 2022, 2024, 2025	Green	No
BC	Blackcap	*Sylvia atricapilla*	2019, 2022, 2024, 2025	Green	No
BF	Bullfinch	*Pyrrhula pyrrhula*	2019, 2022, 2024, 2025	Green	No
BT	Blue tit	*Cyanistes caeruleus*	2019, 2022, 2024, 2025	Green	No
BZ	Buzzard	*Buteo buteo*	2019, 2022, 2024, 2025	Green	No
CC	Chiffchaff	*Phylloscopus collybita*	2019, 2022, 2024	Green	No
CD	Collared dove	*Streptopelia decaocto*	2024	Green	No
CH	Chaffinch	*Fringilla coelebs*	2019, 2022, 2024, 2025	Green	No
CT	Coal tit	*Periparus ater*	2022, 2025	Green	No
CU	Curlew	*Numenius arquata*	2025	Red	Yes
D.	Dunnock	*Prunella modularis*	2019, 2022, 2024, 2025	Green	No
GC	Goldcrest	*Regulus regulus*	2019, 2022, 2024	Amber	No
GO	Goldfinch	*Carduelis carduelis*	2019, 2022, 2024, 2025	Green	No
GR	Greenfinch	*Chloris chloris*	2019, 2022, 2024, 2025	Amber	No
GT	Great tit	*Parus major*	2019, 2024, 2025	Green	No
H	Grey heron	*Ardea cinerea*	2019, 2024	Green	No
HC	Hooded crow	*Corvus cornix*	2019, 2022, 2025	Green	No
HG	Herring gull	*Larus argentatus*	2022, 2025	Amber	No
HM	House Martin	*Delichon urbicum*	2022, 2024, 2025	Amber	No
HS	House Sparrow	*Passer domesticus*	2019, 2022, 2024, 2025	Amber	No
K	Kestrel	*Falco tinnunculus*	2024	Red	Yes
KT	Red kite	*Milvus milvus*	2024	Red	Yes
JD	Jackdaw	*Coloeus monedula*	2019, 2022, 2025	Green	No
LB	Lesser Black-backed Gull	*Larus fuscus*	2022, 2025	Amber	No
LT	Long-tailed tit	*Aegithalos caudatus*	2024	Green	No
LI	Linnet	*Linaria cannabina*	2022, 2025	Amber	No
M.	Mistle thrush	*Turdus viscivorus*	2022, 2024	Green	No
MA	Mallard	*Anas platyrhynchos*	2019, 2022	Amber	No

BTO Code	Species	Scientific Name	Survey Year(s)	Conservation Designation(s)	Considered to be Important in this Appendix?
MG	Magpie	*Pica pica*	2019, 2022, 2024, 2025	Green	No
MP	Meadow Pipit	*Anthus pratensis*	2019, 2022, 2024, 2025	Red	Yes
PH	Pheasant	*Phasianus colchicus*	2019, 2022	Green	No
PW	Pied Wagtail	*Motacilla alba*	2019, 2022, 2024, 2025	Green	No
RN	Raven	*Corvus corax*	2024, 2025	Green	No
R.	Robin	*Erithacus rubecula*	2019, 2022, 2024, 2025	Green	No
RD	Redpoll	*Acanthis flammea*	2022, 2025	Green	No
RB	Reed Bunting	*Emberiza schoeniclus*	2022, 2024, 2025	Green	No
RO	Rook	*Corvus frugilegus*	2019, 2022, 2025	Green	No
S.	Skylark	*Alauda arvensis*	2019, 2022, 2024, 2025	Amber	No
SF	Spotted Flycatcher	*Muscicapa striata*	2025	Amber	No
SC	Stonechat	*Saxicola rubicola*	2022, 2024, 2025	Green	No
SG	Starling	*Sturnus vulgaris*	2019, 2022, 2024, 2025	Amber	No
SI	Swift	*Apus apus*	2022, 2024	Red	Yes
SL	Swallow	*Hirundo rustica*	2022, 2024, 2025	Amber	No
ST	Song Thrush	*Turdus philomelos*	2019, 2022, 2024, 2025	Green	No
WH	Whitethroat	*Curruca communis*	2025	Green	No
WP	Woodpigeon	*Columba palumbus*	2019, 2022, 2024, 2025	Green	No
WR	Wren	*Troglodytes troglodytes*	2019, 2022, 2024, 2025	Green	No
WW	Willow Warbler	*Phylloscopus trochilus*	2024, 2025	Amber	No
Y.	Yellowhammer	*Emberiza citrinella*	2022	Red	Yes
N/A	Orpington Duck (domestic duck)	*Anas platyrhynchos domesticus*	2024	N/A	No

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