

Garrane Green Energy Limited

Appendix 8.1 - Ornithology Baseline Report

Garrane Green Energy Project, Charleville, Co. Limerick

2486055

NOVEMBER 2024

RSK GENERAL NOTES

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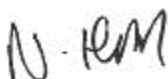


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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK Biocensus.

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1.0 INTRODUCTION

1.1 Purpose of this report

This report presents the methodology and findings of an ornithological baseline study for the Garrane Green Energy Project (hereafter referred to as 'the Project'). This report forms a technical appendix (**Appendix 8.1**) to **Chapter 8** of the Environmental Impact Assessment Report (EIAR) for the Project, and provides the basis for **Appendix 8.2 – Ornithology Collision Risk Modelling Report** which also supports the EIAR. This study was undertaken by RSK Biocensus on behalf of Garrane Green Energy Limited.

The ornithological baseline study presented in this report includes desk studies and field surveys completed between 2020 and 2024 to inform the Project, specifically:

- A desk-based review of relevant designated sites of ornithological interest and records of specially protected and notable bird species;
- Vantage Point (VP) surveys undertaken during the non-breeding seasons between 2020 and 2024, and during the breeding seasons between 2021 and 2024, including detailed recording of bird flight activity for collision risk modelling;
- Walked transect surveys undertaken between 2023 and 2024;
- Detailed surveys focusing on raptors, barn owl (*Tyto alba*), whooper swan (*Cygnus cygnus*) and waders, undertaken between 2023 and 2024;
- Detailed surveys focusing on waterbirds at Charleville Lagoons between 2023 and 2024;
- Supporting hinterland bird surveys within 5km of the Site undertaken between 2023 and 2024.

Together, this information is used to characterise the 'ornithological baseline' for the Project (i.e., the breeding and non-breeding bird populations present within the Site and the potential Zone of Influence (Zol) of the Project prior to development).

This report should be read in conjunction with the following figures:

- **Figure 1** – Site location plan;
- **Figure 2** – Relevant designated sites;
- **Figure 3** – VP locations and viewsheds;
- **Figure 4** – Transect routes;
- **Figure 5** – Additional survey areas
- **Figure 6** – Flight observations from VP surveys for target species during the breeding season;

- **Figure 7** – Flight observations from VP surveys for target species during the non-breeding season; and
- **Figure 8** – Additional survey results.

1.2 Site overview

The site of the Project (hereafter referred to as ‘the Site’) is located at Garrane, Ballynagoul, Creggane, Charleville & Kilmallock, Co. Limerick. The Site is rural in nature, with land cover predominantly comprising agricultural grassland interspersed with rivers and hedgerows. The N20 road extends along the western border of the Site. The Site is in a lowland location, with elevation ranging from approximately 57-62 metres (m) Above Ordnance Datum (AOD) across the site.

Designated sites for nature conservation are present within a 20 kilometre (km) radius of the Site; specifically, Blackwater River (Cork/Waterford) Special Area of Conservation (SAC) (approximately 9.2km south of the Site), and Ballyhoura Mountains SAC/Important Bird Area (IBA) (located approximately 11.9km south-east of the Site). One additional site was identified as being of potential relevance: Kilcolman Bog Special Protection Area (SPA) and IBA (located approximately 15.0km north of the site). These designated sites are discussed in Section 3.1.

1.3 Key guidance

This ornithological baseline study has been prepared in reference to current key industry standard guidance including:

- *Recommended bird survey methods to inform impact assessment of onshore wind farms*¹;
- *Best Practice Guidelines for the Irish Wind Energy Industry*²;
- *Bird monitoring methods: A manual of techniques for key UK species*³;
- The *Birds of Conservation Concern in Ireland* (BoCCI) Red and Amber Lists⁴; and
- *Wind energy development and Natura 2000*⁵.

Information on relevant legislation to this report is provided in **Appendix A**.

¹ Scottish Natural Heritage. (2017) Recommended bird survey methods to inform impact assessment of onshore wind farms. SNH, Perth.

² Irish Wind Energy Association. (2012) *Best Practice Guidelines for the Irish Wind Energy Industry*.

³ Gilbert, G., Gibbons, D.W. & Evans J. (1998) *Bird monitoring methods. A manual of techniques for key UK species*. RSPB, Sandy, Bedfordshire.

⁴ Gilbert, G., Stanbury, A. & Lewis, L. (2021) *Birds of Conservation Concern in Ireland 2020 – 2026*. Irish Birds, 43, 1-22.

⁵ European Commission. (2011) Wind energy development and Nature 2000.

2.0 METHODOLOGIES

2.1 Desk study

In accordance with best practice guidance, a desk study was undertaken to identify designated sites and specially protected and notable bird species relevant to the Project. This enabled a broad overview of potential ornithological constraints to be established and helped guide the identification of focal bird species for field surveys.

A search was made via National Parks & Wildlife Service (NPWS) for any statutory designated sites for nature conservation value (e.g., SPAs and Ramsar sites) with features of ornithological interest, and any other relevant protected and priority habitats. A search was also made for non-statutory designated sites with features of ornithological interest. Based on best practice guidance, sites with a statutory designation were initially identified within a 20 km radius of the Site, whilst those with a non-statutory designation were initially identified within a 2 km radius of the Site¹⁶.

To provide information on the presence of specially protected and notable species in the wider area, records were obtained from the Irish Bird Atlas⁷ for Hectads R52 (together covering the Site). Records were obtained for:

- Species afforded protection under wildlife legislation (e.g. the Wildlife Act and Article 4(2) of the EU Birds Directive); and
- Species considered to be of conservation concern (e.g., Red or Amber listed Bird species of Conservation Concern in Ireland).

In addition, supporting data on specially protected and notable bird species were requested from NPWS in November 2021, October, 2022 and May 2023 by MWP. Another request was sent to NPWS in 2024 by RSK Biocensus for a 10 km radius around the centre of the Site. No response to the 2024 request was received from NPWS in 2024. Further discussion is given in Section 2.7.

A Bird Sensitivity Mapping Tool for wind energy development was developed by BirdWatch Ireland and provides a measured spatial indication of where protected birds are likely to be sensitive to wind energy developments. The tool was accessed in 2019 via the National Biodiversity Data Centre Website⁸ and is accompanied by a guidance document (McGuinness et al., 2015)⁹. The criteria for estimating a zone of sensitivity (i.e., 'low', 'medium', 'high' and 'highest') is based on a review of the

¹⁶ Scottish Natural Heritage. (2016) *Assessing Connectivity with Special Protection Areas (SPAs)*. Guidance Version 3 – June 2016. Scottish Natural Heritage, Inverness.

⁷ Balmer. D., Gillings. S., Caffrey. B., Swann. B., Downie. I. & Fuller. R. (2013) *Bird Atlas 2007-11: The breeding and Wintering birds of Britain & Ireland*. BTO Books, Thetford.

⁸Biodiversity Ireland (2025) www.biodiversityireland.ie

⁹ Mc Guinness, S., Muldoon, C., Tierney, N., Cummins, S., Murray, A., Egan, S. & Crowe, O. (2015) Bird Sensitivity mapping for Wind Energy Developments and Associated Infrastructure in the Republic of Ireland. BirdWatch Ireland, Kilcoole, Wicklow.

behavioural, ecological, and distributional data available for each species. A review of this mapping tool determined that the site lies within zones of low and medium bird sensitivity to wind energy development.

Relevant Irish Wetland Bird Surveys (I-WeBS) data¹⁰ between 2011 and 2024 were also reviewed where possible for sites of ornithological interest within 20km.

2.2 Field survey overview

Detailed ornithological field surveys of the Site were undertaken between 2020 and 2024 inclusive to identify the bird populations using the Site, and to gather supporting ornithological data for the wider area. The areas covered during different survey types are indicated in **Figures 3 – 5**, together forming the ornithology ‘Survey Area’. The areas covered during different surveys were based on the known typical movement patterns of relevant species (e.g., based on Scottish Natural Heritage (SNH) guidance⁶), and on the potential scope for impacts from the Project. During the VP surveys of the Site, detailed flight data were gathered to inform impact assessment through subsequent collision risk modelling.

The survey approach adopted was based on best practice guidance and professional judgement, in reference to known bird-habitat associations and best practice survey methods for target species (as identified later in this section). The geographical scope of the field surveys was determined in reference to SNH¹, NatureScot¹¹ and Chartered Institute of Ecology and Environmental Management (CIEEM) guidance¹².

Field surveys undertaken to inform the Project were as follows:

- VP surveys undertaken during the breeding season (i.e., April to September inclusive) from 2021 to 2024, and during the non-breeding season (i.e., October to March inclusive) from 2020 to 2024.
- Walked transect surveys undertaken during the 2023 and 2024 breeding seasons, and during the 2022/23 and 2023/24 non-breeding season.
- Hinterland bird surveys undertaken during the 2022/23 and 2023/24 seasons.
- Breeding raptor surveys undertaken during the 2023 and 2024 breeding seasons.
- Barn owl surveys undertaken during the 2023 breeding season.
- Wader surveys undertaken during the 2023 breeding season.

¹⁰ Bird Watch Ireland (2024) *Irish Wetland Bird Survey* [Available at: <https://c0amf055.caspio.com/dp/f4db30005dbe20614b404564be88> - accessed 14th November 2024]

¹¹ NatureScot. (2025) *Recommended bird survey methods to inform impact assessment of onshore wind farms*. NatureScot, Perth.

¹² CIEEM. (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Version 1.3 – Updated September 2024. [Available at: *Guidelines for Ecological Impact Assessment (EcIA)* | CIEEM – accessed 16/12/2024].

- Waterbird surveys at Charleville lagoons undertaken during the 2022/23 and 2023 seasons.
- Whooper swan surveys undertaken during the 2023/24 non-breeding season.

Field surveys were conducted by ornithologists from Malachy Walsh and Partners (MWP) and the Irish Ornithological Survey Group (IOSG). Surveyors were all experienced ornithologists competent in bird identification and survey methods for onshore wind farm developments. Surveys were undertaken in suitable weather conditions to record breeding, wintering and passage bird activity. Surveys were completed over multiple years to provide detailed information on the Site's ornithological baseline and to account for variation between years (e.g., due to weather conditions and temporal variation in bird distributions).

Target species

Whilst counts of all bird species encountered during field surveys were recorded, based on the desk study, best practice guidance and professional judgement, certain bird species were identified as 'target species' for particular consideration within field surveys and impact assessment. Identification of target species was informed by:

- their known or likely presence within or in close proximity to the Site;
- their potential sensitivity to the Project (particularly their potential collision risk and/or susceptibility to disturbance from new wind turbines);
- their level of legislative protection and/or conservation concern; and
- their relevance to any nearby designated sites (e.g., SPAs, IBAs).

Based on these characteristics, species identified as target species for this study included all waterfowl, raptor, owl, grouse, wader and gull species. Target species requiring particular consideration due to their conservation status, potential sensitivity and/or relevance to nearby designated sites are summarised in **Table 1**.

Table 1. Target species for particular consideration

Target species	Conservation status
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	BoCCI Amber listed / Wildlife Acts / SPA Special Conservation Interest
Buzzard (<i>Buteo buteo</i>)	BoCCI Green listed / Wildlife Acts
Cormorant (<i>Phalacrocorax carbo</i>)	BoCCI Amber listed / Wildlife Acts / SPA Selection Species
Curlew (<i>Numenius arquata</i>)	BoCCI Red listed / Wildlife Acts / SPA Selection Species
Golden plover (<i>Pluvialis apricaria</i>)	Annex 1 EC Birds Directive / BoCCI Red listed / Wildlife Acts / SPA Selection Species
Hen harrier (<i>Circus cyaneus</i>)	Annex 1 EC Birds Directive / BoCCI Amber listed / Wildlife Acts / IBA Selection Species
Kestrel (<i>Falco tinnunculus</i>)	BoCCI Red listed / Wildlife Acts
Lapwing (<i>Vanellus vanellus</i>)	BoCCI Red listed / Wildlife Acts / SPA Selection Species
Lesser black-backed gull (<i>Larus fuscus</i>)	BoCCI Amber listed / Wildlife Acts
Little egret (<i>Egretta garzetta</i>)	Annex 1 EC Birds Directive / BoCCI Green listed / Wildlife Acts
Merlin (<i>Falco columbarius</i>)	Annex 1 EC Birds Directive / BoCCI Amber listed / Wildlife Acts
Mute swan (<i>Cygnus olor</i>)	BoCCI Amber listed / Wildlife Acts
Peregrine (<i>Falco peregrinus</i>)	Annex 1 EC Birds Directive / BoCCI Green listed / Wildlife Acts
Snipe (<i>Gallinago gallinago</i>)	BoCCI Red listed / Wildlife Acts
Sparrowhawk (<i>Accipiter nisus</i>)	BoCCI Green listed / Wildlife Acts
Teal (<i>Anas crecca</i>)	BoCCI Amber listed / Wildlife Acts / SPA Selection Species
Whooper swan (<i>Cygnus cygnus</i>)	Annex 1 EC Birds Directive / BoCCI Amber listed / Wildlife Acts / SPA Selection Species
Wigeon (<i>Mareca penelope</i>)	BoCCI Amber listed / Wildlife Acts / SPA Selection Species

2.3 Vantage Point surveys

VP surveys were undertaken in reference to current best practice guidance (SNH, 2017) at the time of survey and remain in accordance with updated guidance from NatureScot (2025)¹¹. Surveys aimed to record bird activity throughout the Site during the breeding and non-breeding seasons, including flight activity by target species. In accordance with the aforementioned best practice guidance, VP surveys were undertaken over multiple years in order to establish a more detailed ornithological baseline for the Site and to account for potential temporal variations in bird activity.

Vantage Point selection

To enable detailed coverage of the Site, a total of eight VPs (**Table 2**) were selected for the VP surveys. Four VPs (VPs 1-4) were used from October 2020 to March 2023 inclusive. To provide increased coverage of the Site, an additional four VPs

(VPs 5-8) were surveyed from October 2022 to September 2024. Additional site coverage provided by the new VPs removed the necessity for VP3 and VP4, which were not surveyed between October 2022 to September 2024. VP locations and viewsheds (i.e., the area in which birds could be observed by the ornithologist from a given VP) are shown in **Figure 3**.

Table 2. Vantage Point locations

VP	Location	Seasons surveyed
1	Lat. 52.408414 Long. -8.680619	Breeding seasons 2021, 2022, 2023 and 2024 Non-breeding seasons 2020/21, 2021/22, 2022/23 and 2023/24
2	Lat. 52.393942 Long. -8.683490	Breeding seasons 2021, 2022, 2023 and 2024 Non-breeding seasons 2020/21, 2021/22, 2022/23 and 2023/24
3	Lat. 52.400063 Long. -8.697384	Breeding seasons 2021 and 2022 Non-breeding seasons 2020/21 and 2021/22
4	Lat. 52.407499 Long. -8.696526	Breeding seasons 2021 and 2022 Non-breeding seasons 2020/21 and 2021/22
5	Lat. 52.417484 Long. -8.674871	Breeding seasons 2023 and 2024 Non-breeding seasons 2022/23 and 2023/24
6	Lat. 52.401541 Long. -8.662211	Breeding seasons 2023 and 2024 Non-breeding seasons 2022/23 and 2023/24
7	Lat. 52.397194 Long. -8.663799	Breeding seasons 2023 and 2024 Non-breeding seasons 2022/23 and 2023/24
8	Lat. 52.385645 Long. -8.675108	Breeding seasons 2023 and 2024 Non-breeding seasons 2022/23 and 2023/24

VP locations were selected to maximise coverage of the airspace over the Site; particularly the airspace over the proposed turbine locations and to aid observation of any likely flight lines and habitat assessed as being most likely to be used by target species. VP locations were reviewed to ensure they:

- covered the entire Site, such that no airspace surveyed within the Site was further than 2km from a VP;
- minimised blind spots;
- were positioned outside of (i.e., looking into) the Site;
- did not exceed a maximum arc of 180 degrees of visibility; and
- were an appropriate distance from areas in which birds were likely to be susceptible to disturbance (e.g., key feeding areas, roosts and nesting areas).

Vantage Point survey effort

Two surveys from each VP were undertaken monthly during the breeding and non-breeding seasons. Monthly coverage year-round ensured the recording of species using the Site at all times of year, including breeding species, wintering species, and spring and autumn passage species. Each VP survey lasted for three hours, generating a survey effort of six hours per VP per month. As such, in accordance with SNH guidance¹, VP surveys achieved a survey effort of 36 hours per breeding season and 36 hours per non-breeding season for each VP. VP survey details including survey times and weather conditions are provided in **Appendix B**.

Vantage Point survey methods

The VP surveys followed the standard approach specified within SNH guidance¹, with surveyors scanning the pre-determined viewsheds from the VP locations. VP surveys covered a range of times of day, aiding the recording of species that are active at different times of day. All flight activity and aggregations of target species were recorded onto standardised recording forms and maps, with flight parameters recorded as described below. Counts were also recorded for non-target species. Bird identification and counting was aided by using high-powered optical equipment (e.g., binoculars, telescopes) where necessary.

VP surveys were generally undertaken in suitable weather conditions, avoiding extreme temperatures, heavy rain, snow or fog during which bird activity may be atypical and/or surveying may be impractical.

Flight parameters

During each VP survey, the following flight parameters were recorded for any flights by target species observed:

- the start time of the flight observation;
- the duration of the flight observation;
- the lateral flight path taken through the Site and/or nearby land;
- the species and number of individuals;
- the sexes of all individuals (where possible);
- the likely purpose of the flight (e.g., foraging, displaying, commuting); and
- the approximate flight height in metres, including the time spent in each of the following flight height categories: 0-20m, 20-50m, 50-100m, 100-180m, >180m, and non-flight.

2.4 Transect surveys

Surveys followed a methodology adapted from the Countryside Bird Survey (CBS)¹³ and aimed to locate any target species within the study area), VP surveys were accompanied by transect survey undertaken in 2022 – 2024 to record supplementary information on bird populations within the Site and a 500m buffer. Transect surveys were undertaken over multiple years during the breeding and non-breeding seasons.

Transect route selection and survey effort

Four transect routes were selected within and adjacent to the Site (**Figure 4**). All transects walked through suitable habitat for breeding, wintering and passage birds including areas of pasture grassland, wet grassland, hedgerows and watercourses. These transect routes were designed to maximise coverage of the Site where access permitted, whilst enabling detailed observation of habitats assessed as being of potential value to bird populations, particularly for target species.

Transect surveys were timed to aid recording of breeding, wintering and passage birds that might be difficult to record from VPs, such as songbirds and smaller waders.

Transect survey methods

During each transect survey the ornithologist walked the predetermined transect route, recording target species within 100m of the route using recommended British Trust for Ornithology (BTO) species codes and behaviour notation¹⁴. Counts for non-target species were also recorded. Transect routes were interspersed with stops, during which the ornithologist scanned for birds using optical equipment. Transect surveys were undertaken at different times of day, ensuring different areas of the Site were surveyed at a range of times of day and therefore aiding the recording of species that are active at different times of day.

Transect surveys were undertaken in suitable weather conditions, avoiding extreme temperatures, heavy rain, snow or fog during which bird activity may be atypical and/or surveying may be impractical. Full survey details are provided in **Appendix B**.

2.5 Additional surveys

Hinterland

To provide supplementary information on target species in the wider area, hinterland transect surveys were conducted five times between the 2022/23, 2023/24 and 2024 seasons, to a maximum distance of 5km from the Site. A

¹³ Birdwatch Ireland & National Parks and Wildlife Service (2012) *CBS Manual: Guidelines for Countryside Bird Survey participants*. CBS Counter Manual - Birdwatch Ireland.

¹⁴ Marchant, J.H. (1983) BTO Common Birds Census instructions. BTO, Tring.

consistent road transect was surveyed (**Figure 5a**), with all target species encountered recorded from suitable viewing points along the route. Full details of all hinterland bird surveys are provided in **Appendix B**.

Raptors

Whilst the VP surveys of the Site were suitable for recording breeding raptor activity within the Site, to provide supplementary information on breeding raptor activity (e.g. for buzzard (*Buteo buteo*), kestrel (*Falco tinnunculus*) and peregrine (*Falco peregrinus*)) in the surrounding landscape, raptor surveys following best practice guidance¹⁵ were undertaken in suitable habitat within 2km of the Site (**Figure 5b**) during the 2023 and 2024 breeding seasons. Three visits were undertaken between May to July 2023 and May 2024 inclusive, during which any observations of raptors were recorded, with emphasis on recording evidence of breeding. Full survey details of breeding raptor surveys are provided in **Appendix B**.

Barn owl

Based on the suitability of the habitats present within and adjacent to the Site for barn owl, a detailed search of all potentially suitable buildings was undertaken within the Site and a 1km buffer in accordance with best practice survey methods¹⁶.

An initial review identified 12 buildings (**Figure 5c**) suitable for use by barn owl within the Site and the 1km survey buffer which were surveyed in April 2023. These included eight derelict cottages, two castles, one derelict farmhouse and one derelict stone shed. All structures were subject to a detailed visual inspection of features from the ground and with the use of a drone by a suitably experienced ecologist for evidence of barn owl use. Barn owl evidence searched for included moulted feathers, pellets, feeding remains and whitewash (faeces). Any barn owl sightings or evidence of any other notable species was recorded. Suitable structures for nesting barn owl were also subject to a second visit to confirm activity in May 2023. A supplementary visit was also undertaken at Site 4 as a precaution in September 2023, due to a barn owl sighting nearby to this site. A summary of the survey effort and locations is provided in **Table 3**.

¹⁵ Hardey, J., Crick, H.Q.P., Wernham, C.V., Riley, H., Etheridge, B. & Thompson (2013) Raptors. A field Guide for Surveys and Monitoring. The Stationary Office, Edinburgh.

¹⁶ BirdWatch Ireland. (2021) Survey and Mitigation Standards for Barn Owls to inform the Planning, Construction and Operation of National Road Projects. Transport Infrastructure Ireland, Dublin.

Table 3. Summary of site location and survey effort

Site	Location	Visit 1	Visit 2
1	Latitude: 52.38544949213129 Longitude: -8.653975998607052	✓	✓
2	Latitude: 52.38780681927766 Longitude: -8.65895417877461	✓	
3	Latitude: 52.38579808727699 Longitude: -8.667882814975838	✓	✓
4	Latitude: 52.39715724612873 Longitude: -8.661669401823634	✓	✓*
5	Latitude: 52.41180543119259 Longitude: -8.664040108427514	✓	
6	Latitude: 52.422882907211516 Longitude: -8.6627783067922	✓	✓
7	Latitude: 52.41759935477464 Longitude: -8.674714313791332	✓	✓
8	Latitude: 52.41893112980328 Longitude: -8.683198572201695	✓	
9	Latitude: 52.40849528073623 Longitude: -8.679279149825852	✓	
10	Latitude: 52.40968000967365 Longitude: -8.684794674673139	✓	
11	Latitude: 52.38266024319206 Longitude: -8.687935279275061	✓	

Site	Location	Visit 1	Visit 2
12	Latitude: 52.37714924531834 Longitude: -8.672607514842452	✓	
*Supplementary visit provided on 20 th September 2023 from observation of barn owl nearby to site 4			

Based on the findings of the initial review and field inspections, dusk activity surveys at suitable sites were undertaken to record any barn owl activity (e.g., sightings, calls) and identify any occupied breeding sites and active roost sites. Potential or known barn owl breeding and roosting sites were observed from discrete viewing points (approximately 20-50m from the site being surveyed) between 21:50 and 01:25 on the night of the 25th/26th May 2023 with surveyors taking care to avoid causing any disturbance to barn owls. Dusk activity surveys were conducted in calm, dry conditions with good visibility, commencing 0-30 minutes before sunset and concluding when the status of the site regarding barn owl use had been established. Full survey details of barn owl surveys are provided in **Appendix B**.

Breeding waders

To provide supplementary information on wader species in the wider area, wading bird surveys were conducted on three occasions during the 2023 breeding season in suitable habitat to a maximum distance of 500m from the Site boundary following best practice³. Survey areas and transects (**Figure 5d**) were produced that focused on suitable wader breeding habitat including wet grassland within 500m of the Site. A survey area within suitable wet grassland habitat was walked in April and June 2023. Additionally, as part of the assessment two transects within wet grassland within and adjacent to the Site were also surveyed in May 2023.

During each wading bird survey, the ornithologist walked the predetermined transect route, recording waders and other target species within 100m of the route onto standardised maps using recommended BTO species codes and behaviour notation¹⁴. The transect was interspersed with stops, during which the ornithologist scanned for waders using optical equipment. Emphasis was placed on recording any evidence of breeding (e.g., displaying, pairs in suitable breeding habitat). Full survey details are provided in **Appendix B**.

Waterbirds

To provide supplementary information on target species in the wider area, waterbird surveys were conducted on ten occasions at Charleville Lagoons, located 0.1km south of the Site (**Figure 5e**), during the 2023 and 2024 breeding seasons and the 2023/24 non-breeding season. The survey method adopted was based on

Birdwatch Ireland's Irish Wetland Bird Survey (I-WeBS) methodology¹⁷. All target species encountered were recorded, with habitats surveyed including all suitable foraging and roosting areas for wildfowl within the survey area. Full details of all waterbird surveys are provided in **Appendix B**.

Whooper swan

In addition to the surveys of the Site undertaken annually during the non-breeding season between 2020/21 and 2023/24, detailed surveys for whooper swan were conducted during the 2023/24 non-breeding season. The aims of these surveys were to locate any whooper swan feeding and roosting sites within the study area (if present, recording the number of whooper swans using these sites), and to determine whether any whooper swan flight lines extended through the study area.

The study area for these surveys included the Site and a 5km buffer (**Figure 5f**), within which whooper swan surveys were undertaken on six occasions between October 2023 and March 2024. Surveys comprised dawn watches starting 30-40 minutes before sunrise during which all whooper swan observations were recorded (i.e., the number of birds and their behaviour, including any flight activity), along with any observations of target species.

In addition, two known whooper swan wintering sites (**Figure 5f**) were surveyed to provide context on whooper swan use of the wider landscape and to identify any potential connectivity. These locations were surveyed on 11 occasions between October 2023 and March 2024 inclusive. These locations were Churchtown (located c.13.5km south-west of the Site) and Kilcolman Wildfowl Reserve (located c.15.0km south of the Site). Survey dates are detailed alongside the survey results in **Section 0**.

2.6 Assessment of importance of ornithological features

The importance of the ornithological features relevant to this assessment was evaluated based on the methodology that is set out in Chapter 3 of the 'Guidelines for Assessment of Ecological Impacts of National Roads Schemes'¹⁸. These guidelines and the CIEEM guidelines¹² set out the context for the determination of value on a geographic basis. They provide a basis for determination of whether a particular site is of importance at the following scales:

- International importance.
- National importance (i.e., important in an Irish context).
- County/district importance (i.e., important in the context of County Limerick).
- Local importance (Higher or Lower) (i.e., locally important populations/assemblages of bird species and/or protected and/or priority species/habitats).

¹⁷ Bibby, C., Burgess, N., Hill, D., & Mustoe, S. (2000). (2nd Eds). Bird Census Techniques. Academic Press.

¹⁸ National Roads Authority, 2009. *Guidelines for Assessment of Ecological Impacts of National Road Schemes*.

The evaluation criteria for these scales of importance are provided in **Table 4**:

Table 4. Evaluation criteria for assessing the importance of ornithological features

Level of importance	Evaluation criteria
International importance	<p>Special Protection Area (SPA) or proposed Special Protection Area (pSPA). Land that is functionally linked to a Natura 2000 site of ornithological importance to the extent that it is essential to maintaining the coherence of the Natura 2000 Network.</p> <p>Ramsar site supporting populations of birds that form qualifying features of reason for the designation of the site.</p> <p>Resident or regularly occurring populations (assessed to be important at the international level) of bird species listed in Annex I and/or referred to in Article 4(2) of the Birds Directive.</p>
National importance	<p>Natural Heritage Area (NHA) or Statutory Nature Reserve designated for its ornithological interests.</p> <p>Resident or regularly occurring populations of birds assessed to be important at the national level, including species listed in Annex I and/or referred to in Article 4(2) of the Birds Directive, species protected under the Wildlife Acts and/or species included on the BoCCI Red List⁴.</p>
County/district importance	Resident or regularly occurring populations of birds assessed to be important at the county level, including species of bird listed in Annex I and/or referred to in Article 4(2) of the Birds Directive, species protected under the Wildlife Acts and/or species included on the Red or Amber Lists.
Local importance (Higher value)	Resident or regularly occurring populations of birds assessed to be important at the local level, including species listed in Annex I and/or referred to in Article 4(2) of the Birds Directive, species protected under the Wildlife Acts and/or species included on the BoCCI Red or Amber Lists, or populations of species that are assessed as uncommon in the local area.
Local importance (Lower value)	Populations of species that are common in the local area including those included on the BoCCI Green List.

Features assessed as being of less than Local importance were considered to be of 'Negligible' importance and were scoped out of the detailed assessment of effects, since these would not be a material consideration for planning and any effects on these features would not be significant in the context of the local (or higher level) population statuses of these species or species assemblages.

The importance of an ornithological feature (using the geographical scale of importance defined above) can be assessed based on the following factors:

Conservation status

The assessment of the importance of the bird populations took into consideration the conservation statuses of the species recorded. Species afforded special statutory protection or included on lists of species of conservation interest were evaluated. These included:

- EC Birds Directive (2009/147/EC) Annex I species; and

- BoCCI Red and Amber listed species.

Species abundance

The assessment of the importance of bird populations took into consideration their sizes relative to international, national, and regional population estimates for the species in question. International population estimates used for this analysis were as presented by the International Union for the Conservation of Nature (IUCN) and Wetlands International¹⁹. Importance at a national level was assessed against available national population estimates such as those published by Crowe et al. (2014)²⁰. Assessment of county or local importance was based on professional judgement and using county population estimates where available (e.g. relevant I-WeBS data).

Species diversity

The assessment of the importance of the populations took into consideration the diversities of ornithological species assemblages (i.e., the number of species) recorded during the breeding and non-breeding seasons.

Relevant designated sites with features of ornithological interest

The importance of the bird populations was assessed in the context of relevant designated sites for features of ornithological interest. Specifically, where species recorded during field surveys were deemed to potentially belong to populations of nearby SPAs⁶, if the populations of those species recorded within/beyond the Site exceeded 1% of the cited population estimates for those species for the relevant SPA(s), the populations recorded were assessed as being potentially significant in the context of the SPA(s). As such, any adverse effects on those populations recorded within/in close proximity to the project site could potentially result in effects on ornithological features of international importance, and therefore cause adverse effects on the integrity of Natura 2000 sites.

2.7 Limitations and assumptions

Surveys (e.g. VP, hinterland and breeding wader) were sometimes carried out in suboptimal weather conditions (i.e., heavy rain, strong winds, poor visibility), during which activity and/or detectability for certain species may have been reduced. Across the survey period the total survey effort significantly exceeded the survey effort recommended by NatureScot (with VP data collected during three breeding seasons and three non-breeding seasons) with extensive additional surveys, during which the majority of visits were completed in suitable weather conditions. The survey effort within suitable survey conditions is therefore considered sufficient

¹⁹ As detailed by Wetlands International. Available at [Waterbird Population Estimates \(wetlands.org\)](https://wetlands.org/Waterbird-Population-Estimates) (accessed 16/12/2024).

²⁰ Crowe, O., Musgrove, A. J., & O'Halloran, J. (2014) *Generating population estimates for common and widespread breeding birds in Ireland*. Bird Study, 61(1), 82-90.

to inform this report and subsequent impact assessment. As such, adverse weather conditions did not pose a significant constraint to the findings of the VP, hinterland and breeding wader surveys.

VP viewshed coverage of the Site significantly overlapped during VP surveys. Therefore, the potential to duplicate observations was present during the surveys where surveyors shared similar viewsheds. Data was reviewed for inclusion within the data set by IOSG to ensure duplication of flight lines did not occur. Additionally, where possible surveys were scheduled for vantage point locations where overlapping viewsheds was minimised. As such, with these measures overlapping viewsheds should not significantly affect the validity of the survey findings and any further assessment.

Surveys during the breeding season sometimes commenced significantly after dawn. As many species are typically more active around dawn, this could have led to the under-recording of breeding bird activity, particularly for passerines. The target species for this ornithological baseline study were non-passerines, many of which typically exhibit a less marked drop-off in detectability and/or breeding activity after dawn. For those target and non-target species which are particularly active around dawn or at other times of day which were subject to lower survey effort, and may therefore have been under-recorded during field surveys (e.g., barn owl, short-eared owl (*Asio flammeus*)), this has been taken into consideration when evaluating the potential importance of the Site to these species, with a precautionary approach implemented as necessary.

In accordance with best practice guidance for wind farm developments), the Site was surveyed year-round. To facilitate analysis of site usage by bird species at different times of year, surveys undertaken in October to March inclusive have been broadly categorised as 'non-breeding' surveys, whilst surveys undertaken in April to September inclusive have been broadly categorised as 'breeding' surveys. It is recognised that species differ in their seasonal behaviour patterns, with some species likely to exhibit breeding behaviour outside of April to September inclusive, whilst species present in April to September were not necessarily breeding in the area surveyed. This has been taken into consideration within this report.

Whilst desk study data are useful in providing supplementary ecological information for a site, it should be acknowledged that these data are dependent on the submission of records to the relevant organisation. As such, a lack of records for a particular species does not necessarily mean that the species is absent from the Site and/or wider search area. Similarly, records of a particular species do not necessarily mean that the species is still present within the site and/or wider search area.

2.8 Validity of Data

Unless the site changes significantly, the surveys carried out for this report should remain valid for at least 18 months, and potentially up to 3 years²¹.

²¹ CIEEM. (2019) Advice Note on the lifespan of ecological surveys and reports. [Available at: Advice-Note.pdf (cieem.net) – accessed 14th November 2024].

3.0 DESK STUDY RESULTS

3.1 Designated sites

The desk study identified three internationally designated sites within 20km of the Site boundary that may be of relevance to the Project, as detailed below. The locations of these internationally designated sites are indicated in **Figure 2**.

Blackwater River (Cork/Waterford) SAC

Blackwater River (Cork/Waterford) SAC²², is located approximately 7.1km south of the Site at its nearest point. This extensive site includes the Blackwater Callows and Blackwater Estuary SPAs which are designated for internationally important waterbird populations. However, these SPAs are far outside of the 20km search area adopted in this assessment. The wider areas of river and marginal habitats within the SAC (including those within 20km of the Site) are recognised on the SAC citation as being of value to several species including cormorant (*Phalacrocorax carbo*), dipper (*Cinclus cinclus*), grey heron (*Ardea cinerea*) and long-eared owl (*Asio otus*), although these species are not identified as being present in internationally important numbers and are not qualifying features of this site. Blackwater River SAC also includes one pNHA site: Awbeg Valley. No details of ornithological interests are available for this site.

Ballyhoura Mountains SAC and IBA

Ballyhoura Mountains SAC²³ is located approximately 9.7km south-east of the Site bordering Limerick and Cork. The site is primarily afforested with conifer plantations and designated as an SAC due to an extensive mosaic of dry and wet heathland [4010 and 4030] and blanket bog [7130]. At the time of the most recent assessment in 2013, the habitats present also supported notable populations of two Annex 1 bird species: hen harrier (*Circus cyaneus*) (seven pairs), and peregrine (one pair). The site was designated as an IBA²⁴ on account of Ballyhoura Mountains SAC supporting a nationally significant population of hen harrier (c.17-19 pairs) equivalent to 12% of the national population in 2006. Ballyhoura Mountains SAC/IBA also includes six pNHA sites: Ballyhoura mountains; Mountrussel Wood; Carrigeenamronety Hill; Castleoliver Woods; Ballynacourty Wood; and Ballyroe Hill and Mortlestown Hill. No details of ornithological interests are available for these sites.

²² NPWS. (2016) *Site Synopsis: Blackwater River (Cork/Waterford) SAC (Site Code 002170)*. National Parks and Wildlife Service. [Available at: [Blackwater River \(Cork/Waterford\) SAC | National Parks & Wildlife Service \(npws.ie\)](https://www.npws.ie/en/protected-areas/blackwater-river-cork-waterford-sac) – accessed 14th November 2024].

²³ NPWS. (2013) *Site Synopsis: Ballyhoura Mountains SAC (Site Code 002036)*. National Parks and Wildlife Service. [Available at: [Ballyhoura Mountains SAC | National Parks & Wildlife Service \(npws.ie\)](https://www.npws.ie/en/protected-areas/ballyhoura-mountains-sac) – accessed 14th November 2024].

²⁴ BirdLife International. (2024a) *Important Bird Area factsheet: Ballyhoura Mountains (Ireland)*. [Available at: <https://datazone.birdlife.org/site/factsheet/ballyhoura-mountains-iba-ireland> – accessed 14th November 2024].

Kilcolman Bog SPA

Kilcolman Bog SPA²⁵ is situated 15km south of the Site in the southern foothills of the Ballyhoura Mountains in Co. Cork, occupying a glacially eroded hollow in Carboniferous limestone. The site comprises a quaking fen fed by calcareous groundwater, with areas of reed swamp, freshwater marsh and wet grassland. The site is designated for its internationally important populations of the following wintering bird species (SPA citation populations are in brackets): Shoveler (*Spatula clypeata*) (150); teal (*Anas crecca*) (690); and whooper swan (95). Conservation objectives for the SPA aim to maintain or restore the favourable conservation condition of those bird species listed above as Special Conservation Interests and for regularly occurring migratory wetland and waterbirds within the SPA. Other wintering species listed on the SPA's citation but not comprising qualifying features for SPA designation include golden plover (*Pluvialis apricaria*), lapwing (*Vanellus vanellus*) and wigeon (*Mareca penelope*).

Breeding species listed on the SPA's citation but not comprising qualifying features for SPA designation include little grebe (*Tachybaptus ruficollis*) and mute swan (*Cygnus olor*).

Kilcolman Bog SPA also includes one pNHA site: Kilcolman Bog. No further details of ornithological interest is provided for this site.

3.2 Protected and notable bird species

Table 5 details specially protected and notable bird species records from the Irish Bird Atlas for hectads R52, including the Site and surrounding land⁷. Records were obtained for species of conservation concern due to their decline over recent years, species afforded additional protection under national and/or international legislation, and species relevant to the designated sites described in Section 3.1.

Table 5. Protected and notable bird species recorded within R52 in the Irish Bird Atlas.

Species	Wintering	Breeding	Conservation status
Barn owl	Tyto alba	-	Present
Curlew	Numenius Arquata	-	Present
Kingfisher	Alcedo atthis	-	Present
Lapwing	Vanellus vanellus	Present	Present
Little egret	Egretta garzetta	Present	Present

²⁵ NPWS. (2014) *Site Synopsis: Kilcolman Bog SPA (Site Code 004095)*. National Parks and Wildlife Service. [Available at: [Kilcolman Bog SPA | National Parks & Wildlife Service \(npws.ie\)](https://www.npws.ie/en/Protected%20Areas/Protected%20Areas%20List/Kilcolman%20Bog%20SPA) – accessed 14th November 2024].

Species	Wintering	Breeding	Conservation status
Peregrine	Falco peregrinus	-	Possible
Redshank	Tringa totanus	Present	Present

Records were requested by MWP in November 2021, October 2022 and May 2023 for species of conservation concern due to their decline over recent years, species afforded additional protection under national and/or international legislation, and species relevant to the designated sites described in Section 3.1. In 2021 and 2022, the records from NPWS returned 12 sightings and between one to three breeding sites within 10km of the Project for hen harrier between 2005-2020. No protected or threatened bird species were recorded for R52 in the NPWS rare and protected species dataset in 2023. An update to the desk study data was requested but not able to be obtained from NPWS from a request for rare and protected species records when submitted in December 2024.

A review of I-WeBS data identified four wetland sites of potential ornithological value within 20km of the Site, these included: Charleville Lagoons (<100m south of the Site), Ballyhea Gravel Pit (8.3km south of the Site), Kilcolman Marsh (15km south of the Site) and Lough Gur (19.8km north-east).

Charleville Lagoons is located at land adjacent to the Site and was most recently assessed in 2018/19 with further data between 2011 – 2014. A total of 25 species were recorded across this survey effort including average peak counts for mute swan (20), whooper swan (1), wigeon (167), gadwall (*Mareca strepera*) (7), teal (159), mallard (75), shoveler (40), cormorant (3), grey heron (1), moorhen (3), lapwing (51), snipe (2), black-tailed godwit (10), curlew (5), redshank (1), green sandpiper (*Tringa ochropus*) (2), black-headed gull (*Choroicocephalus ridibundus*) (34) and lesser black-backed gull (30).

Ballyhea Gravel Pits is a flooded quarry located 500m west of the town of Ballyhea, Co. Cork and was assessed between 2011 – 2014 with a total of ten species recorded, including average peak counts for mute swan (16), wigeon (76), teal (21), mallard (6), cormorant (2), lapwing (85), snipe (4) and curlew (45).

Kilcolman Marsh is included within the Kilcolman Bog SPA/IBA and was assessed between 2011 – 2019 with a total of 24 species recorded across this survey effort. This included average peak counts of mute swan (2), whooper swan (42), greylag goose (14), wigeon (159), teal (410), mallard (53), shoveler (70), grey heron (2), moorhen (4), lapwing (3), snipe (2), curlew (1), green sandpiper (1), black-headed gull (20), and lesser black-backed gull (9).

Lough Gur is a large lake located 500m north-east of Holycross, Co. Limerick and was assessed between 2011 – 2013, 2014 – 2015 and 2017 – 2021 with a total of 30 species recorded across this survey effort. This included average peak counts of mute swan (23), whooper swan (2), greylag goose (29), wigeon (210), gadwall (18), teal (137), mallard (51), shoveler (31), cormorant (15), little egret (1), grey

heron (3), moorhen (5), golden plover (1), lapwing (73), snipe (2), curlew (25), black-headed gull (20), common gull (4) and lesser black-backed gull (1).

4.0 VANTAGE POINT SURVEY RESULTS

The results of the VP surveys undertaken during the breeding and non-breeding seasons between 2020 and 2024 inclusive are described below. Detailed survey data are provided in **Appendix C**²⁶.

4.1 Breeding season

A total of 71 species were recorded during the breeding VP surveys undertaken in 2021, 2022, 2023 and 2024, including 25 target species. Survey results are described below, including detailed accounts for target species recorded in flight.

2021

A total of 54 species were recorded during the VP surveys undertaken between April and September 2021 inclusive. These were largely common and widespread non-target species, but did include target species and species of conservation concern in Ireland.

The 54 species recorded included flight activity by 11 target species. Peak counts²⁷ and flight activity for these species are summarised in **Table 6**. Flight lines recorded for target species are indicated in **Figure 6a**.

Table 6. VP flight activity summary for target species during the 2021 breeding season

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
Black-headed gull	5	1	70	One observation of five individuals north of the Site boundary flying at 80m over grassland for 70 seconds.
Buzzard	3	12	5,104	12 observations of between 1-3 individuals flying, circling and soaring north-west and infrequently within the Site.
Cormorant	3	6	261	Six observations of between 1-3 individuals flying over north and within the Site.
Grey heron	2	5	263	Five observations of birds flying at height between 50-100m to

²⁶ Species included on Annex 1 of the EC Birds Directive are indicated in bold. Species included on the BoCCI Red, Amber and Green lists are indicated in red, amber and green respectively.

²⁷ To avoid generating falsely high estimates of species' population sizes through likely double-counting of birds, 'peak counts' used denote the maximum number of individuals of a given species recorded during one survey of a single VP location.

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
				the north-west and within the Site.
Kestrel	1	16	3,416	16 observations of individual birds flying and hunting north-west and infrequently within the Site.
Lesser black-backed gull	30	9	1,243	Nine observations of flocks typically between 8-30 individuals commuting at 100-180m within the Site.
Little egret	1	1	45	One observation of an individual bird flying between 0-20m north of the Site.
Mallard	4	6	145	Six observations of between 1-4 individuals flying over grassland north and within the Site.
Peregrine	2	1	35	One observation of two individuals flying over grassland at 80m north of the Site in July 2021.
Snipe	10	1	420	One observation of 10 individuals circling over grassland at 100m within the Site in September 2021.
Sparrowhawk	1	2	360	Two observations of individuals soaring at 100m north-west and within the Site.

Peak counts for notable species recorded are provided in **Table 7**.

Table 7. VP survey peak counts for notable species during the 2021 breeding season

Common name	Scientific name	Peak count
Black-headed gull	<i>Chroicocephalus ridibundus</i>	5
Cormorant	<i>Phalacrocorax carbo</i>	3
Goldcrest	<i>Regulus regulus</i>	10
Grasshopper warbler	<i>Locustella naevia</i>	1
Grey wagtail	<i>Motacilla cinerea</i>	2
House martin	<i>Delichon urbicum</i>	20
House sparrow	<i>Passer domesticus</i>	32
Kestrel	<i>Falco tinnunculus</i>	1
Lesser black-backed gull	<i>Larus fuscus</i>	30
Linnet	<i>Linaria cannabina</i>	35
Little egret	<i>Egretta garzetta</i>	1

Common name	Scientific name	Peak count
Mallard	<i>Anas platyrhynchos</i>	4
Meadow pipit	<i>Anthus pratensis</i>	22
Sand martin	<i>Riparia riparia</i>	5
Skylark	<i>Alauda arvensis</i>	8
Snipe	<i>Gallinago gallinago</i>	10
Starling	<i>Sturnus vulgaris</i>	120
Swallow	<i>Hirundo rustica</i>	100
Swift	<i>Apus apus</i>	12
Wheatear	<i>Oenanthe oenanthe</i>	2
Willow warbler	<i>Phylloscopus trochilus</i>	7

2022

A total of 51 species were recorded during the VP surveys undertaken between April and September 2022 inclusive. These were largely common and widespread non-target species, but did include target species and species of conservation concern in Ireland.

The 51 species recorded included flight activity by 12 target species. Peak counts and flight activity for these species are summarised in **Table 8**. Flight lines recorded for target species are indicated in **Figure 6b**.

Table 8. VP flight activity summary for target species during the 2022 breeding season

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
Black-headed gull	15	6	245	Six observations of individual birds and flocks ranging between 3 – 15 birds flying over grassland north of the Site.
Buzzard	5	28	1,507	28 observations of birds flying, hunting and circling over grassland north, north-west, east and within the Site.
Common gull	5	3	11	Three observations of birds flying over grassland north-west of the Site.
Cormorant	2	10	369	Ten observations of between 1-2 individuals flying over grassland west and within the Site.
Golden plover	2	1	14	One observation of two birds flying between 50-100m over grassland north-west of the Site in September 2022.

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
Grey heron	1	8	86	Eight observations of individual birds flying between 0-20m over grassland and river habitat within the Site.
Kestrel	2	17	2,565	17 observations of between 1-2 birds perching, hunting and circling over grassland north and north-west of the Site.
Lesser black-backed gull	48	10	722	Ten observations of individual birds, flocks of between 4-7 birds and one record of 48 birds flying and circling over grassland west and north-west of the Site.
Little egret	2	5	26	Five observations of 1-2 birds perched or flying between 0-20m over grassland south-west of the Site.
Mallard	3	13	515	13 observations of 1-3 birds flying low over grassland east, west and within the Site.
Snipe	29	3	262	Three observations of small and large flocks circling over grassland within the Site.
Sparrowhawk	1	4	62	Four observations of individual male and female birds flying, hunting and perching north-west of the Site.

Peak counts for notable species recorded are provided in **Table 9**.

Table 9. VP survey peak counts for notable species during the 2022 breeding season

Common name	Scientific name	Peak count
Black-headed gull	<i>Chroicocephalus ridibundus</i>	15
Common gull	<i>Larus canus</i>	7
Cormorant	<i>Phalacrocorax carbo</i>	4
Goldcrest	<i>Regulus regulus</i>	12
Golden plover	<i>Pluvialis apricaria</i>	2
Grey wagtail	<i>Motacilla cinerea</i>	1
House martin	<i>Delichon urbicum</i>	22
House sparrow	<i>Passer domesticus</i>	18
Kestrel	<i>Falco tinnunculus</i>	2
Lesser black-backed gull	<i>Larus fuscus</i>	48
Linnet	<i>Linaria cannabina</i>	8

Common name	Scientific name	Peak count
Little egret	<i>Egretta garzetta</i>	5
Mallard	<i>Anas platyrhynchos</i>	18
Meadow pipit	<i>Anthus pratensis</i>	28
Sand martin	<i>Riparia riparia</i>	3
Skylark	<i>Alauda arvensis</i>	12
Snipe	<i>Gallinago gallinago</i>	38
Starling	<i>Sturnus vulgaris</i>	300
Swallow	<i>Hirundo rustica</i>	70
Swift	<i>Apus apus</i>	2
Wheatear	<i>Oenanthe oenanthe</i>	1
Willow warbler	<i>Phylloscopus trochilus</i>	4

2023

A total of 65 species were recorded during the VP surveys undertaken between April and September 2023 inclusive. These were largely common and widespread non-target species, but did include a diverse range of target species and species of conservation concern in Ireland.

The 65 species recorded included flight activity by 20 target species. Peak counts and flight activity for these species are summarised in **Table 10**. Flight lines recorded for target species are indicated in **Figure 6c**.

Table 10. VP flight activity summary for target species during the 2023 breeding season

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
Black-headed gull	3	2	128	Two observations of birds flying between 0-50m over grassland within the Site.
Black-tailed godwit	37	2	110	Two observations of a flock of 37 birds flying between 0-50m over grassland south-west of the Site in August 2023.
Buzzard	2	41	6,097	41 observations of between 1-2 birds perched, flying, soaring, circling and hunting over grassland outside and directly within the Site.
Cormorant	5	66	3,128	66 observations of between 1-5 birds flying between 0-50m over grassland and river habitat within the Site.

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
Curlew	1	2	177	Two observations of individual birds flying over grassland south-west and within the Site in July 2023.
Gadwall	2	1	12	One observation of two birds flying between 0-20m over grassland south-west of the Site.
Golden plover	6	3	52	Three observations of between 1-6 individuals flying over grassland between 0-50m within the Site in September 2023.
Great black-backed gull	1	1	40	One observation of an individual bird flying over grassland between 50-100m north of the Site.
Grey heron	2	26	881	26 observations of between 1-2 individuals flying over grassland, river, lagoon and scrub habitat primarily outside and occasionally directly within the Site.
Greylag goose	7	4	432	Four observations of between 1-7 individuals flying north at between 20-100m over grassland north and within the Site.
Kestrel	3	75	9,392	75 observations of between 1-3 individuals flying, hunting and mobbing birds over grassland, river and lagoon habitat to the north, south and within the Site. Breeding recorded during survey c.250m south-west of Site in August 2023.
Lapwing	4	1	120	One observation of four birds flying at 0-20m over Charleville lagoons south of the Site in August 2023.
Lesser black-backed gull	34	29	3,609	29 observations of individual birds, small flocks (2-11 birds) and one record of 34 birds all flying or circling over grassland and river habitat outside and within the Site.
Little egret	2	15	639	15 observations of between 1-2 individuals perched or flying at 0-50m over grassland north and within the Site.
Mallard	7	56	2,003	56 observations of between 1-7 individuals flying over grassland, river, pond and lagoon habitat outside and within the Site.

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
Mute swan	2	5	138	Five observations of between 1-2 individuals flying over grassland and lagoon habitat south and within the Site.
Peregrine	1	3	281	Three observations of individual birds flying between 20-50m over grassland west and within the Site in May 2023.
Snipe	29	7	750	Seven observations of an individual bird and flocks of 11-29 birds flying and circling over grassland north and within the Site in September 2023.
Sparrowhawk	1	10	486	Ten observations of individual birds flying and hunting over grassland north, west and within the Site.
Yellow-legged gull	1	1	30	One observation of an individual bird perched on an agricultural field before flying at 60m

Peak counts for notable species recorded are provided in **Table 11**.

Table 11. VP survey peak counts for notable species during the 2023 breeding season

Common name	Scientific name	Peak count
Black-headed gull	<i>Chroicocephalus ridibundus</i>	3
Black-tailed godwit	<i>Limosa limosa</i>	37
Cormorant	<i>Phalacrocorax carbo</i>	5
Curlew	<i>Numenius arquata</i>	1
Gadwall	<i>Mareca strepera</i>	2
Goldcrest	<i>Regulus regulus</i>	2
Golden plover	<i>Pluvialis apricaria</i>	6
Grasshopper warbler	<i>Locustella naevia</i>	1
Grey wagtail	<i>Motacilla cinerea</i>	1
Greylag goose	<i>Anser anser</i>	7
House martin	<i>Delichon urbicum</i>	6
House sparrow	<i>Passer domesticus</i>	4
Kestrel	<i>Falco tinnunculus</i>	3
Lapwing	<i>Vanellus vanellus</i>	4
Lesser black-backed gull	<i>Larus fuscus</i>	34
Linnet	<i>Linaria cannabina</i>	30

Common name	Scientific name	Peak count
Little egret	<i>Egretta garzetta</i>	2
Mallard	<i>Anas platyrhynchos</i>	7
Meadow pipit	<i>Anthus pratensis</i>	25
Moorhen	<i>Gallinula chloropus</i>	1
Mute swan	<i>Cygnus olor</i>	2
Peregrine	<i>Falco peregrinus</i>	1
Sand martin	<i>Riparia riparia</i>	30
Skylark	<i>Alauda arvensis</i>	4
Snipe	<i>Gallinago gallinago</i>	29
Starling	<i>Sturnus vulgaris</i>	75
Stock dove	<i>Columba oenas</i>	2
Swallow	<i>Hirundo rustica</i>	60
Swift	<i>Apus apus</i>	12
Willow warbler	<i>Phylloscopus trochilus</i>	4

2024

A total of 26 species were recorded during the VP surveys undertaken between April and September 2024 inclusive. These were occasionally common and widespread non-target species, but did include target species and species of conservation concern in Ireland.

The 26 species recorded included flight activity by 15 target species. Peak counts and flight activity for these species are summarised in **Table 12**. Flight lines recorded for target species are indicated in **Figure 6d**.

Table 12. VP flight activity summary for target species during the 2024 breeding season

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
Barn owl	1	1	6	One observation of an individual bird flying at 0-20m from scrub over grassland west of the Site.
Black-headed gull	4	7	245	Seven observations of between 1-4 birds flying at 0-20m over grassland, river and lagoon habitat outside and within the Site.
Buzzard	3	42	6,625	42 observations of between 1-3 birds flying, soaring, hunting and being mobbed over grassland, river and lagoon habitat outside and within the Site.

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
Cormorant	14	72	2,595	72 observations of between 1-4 birds and a large flock of 14 individual flying over grassland and river habitat outside and within the Site.
Grey heron	2	34	1,112	34 observations of between 1-2 birds flying over grassland, scrub and river habitat outside and within the Site.
Kestrel	2	47	5,862	47 observations of between 1-2 individuals flying, hunting and mobbing other birds over grassland and river habitat outside and within the Site.
Lesser black-backed gull	8	20	1,026	20 observations of between 1-8 individuals flying over grassland and river habitat outside and within the Site.
Little egret	2	14	255	14 observations of between 1-2 individuals flying over grassland, river and lagoon habitat outside and within the Site.
Mallard	6	43	1,160	43 observations of between 1-6 individuals flying over grassland, river and lagoon habitat outside and within the Site.
Moorhen	1	1	9	One observation of an individual bird flying between 0-20m over grassland west of the Site.
Mute swan	1	2	66	Two observations of individual birds flying between 0-20m over grassland north and south of the Site.
Peregrine	1	1	219	One observation of an individual bird circling between 50-100m over grassland north of the Site in May 2024.
Snipe	1	2	92	Two observations of individual birds flying between 50-100m over grassland within the Site in September 2024.
Sparrowhawk	3	9	351	Nine observations of between 1-3 birds flying, circling and hunting over grassland, scrub and lagoon habitat outside and within the Site.
Whimbrel	13	2	120	Two observations of three and a flock of 13 individuals flying between 0-50m over grassland south and within the Site.

Peak counts for notable species recorded are provided in **Table 13**.

Table 13. VP survey peak counts for notable species during the 2024 breeding season

Common name	Scientific name	Peak count
Barn owl	<i>Tyto alba</i>	1
Cormorant	<i>Phalacrocorax carbo</i>	19
Goldcrest	<i>Regulus regulus</i>	8
Grey wagtail	<i>Motacilla cinerea</i>	1
House martin	<i>Delichon urbicum</i>	12
House sparrow	<i>Passer domesticus</i>	14
Kestrel	<i>Falco tinnunculus</i>	3
Lesser black-backed gull	<i>Larus fuscus</i>	11
Linnet	<i>Linaria cannabina</i>	40
Little egret	<i>Egretta garzetta</i>	6
Mallard	<i>Anas platyrhynchos</i>	7
Meadow pipit	<i>Anthus pratensis</i>	17
Mute swan	<i>Cygnus olor</i>	1
Sand martin	<i>Riparia riparia</i>	10
Skylark	<i>Alauda arvensis</i>	3
Snipe	<i>Gallinago gallinago</i>	1
Starling	<i>Sturnus vulgaris</i>	150
Swallow	<i>Hirundo rustica</i>	90
Swift	<i>Apus apus</i>	12

4.2 Non-breeding season

A total of 73 species were recorded during the non-breeding VP surveys undertaken in 2020/21, 2021/22, 2022/23 and 2023/24, including 25 target species. Survey results are described below, including detailed accounts for target species recorded in flight.

2020/21

A total of 57 species were recorded during the VP surveys undertaken between October 2020 and March 2021 inclusive. These were largely common and widespread non-target species but did include target species and species of conservation concern in Ireland.

The 57 species recorded included flight activity by 15 target species. Peak counts and flight activity for these species are summarised in **Table 14**. Flight lines recorded for target species are indicated in **Figure 7a**.

Table 14. VP flight activity summary for target species during the 2020/21 non-breeding season

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
Black-headed gull	140	9	1,655	Nine observations of individual birds, small flocks (2 – 23 birds) and large flocks (120 – 140 birds) flying over grassland north to south frequently outside and occasionally within the Site.
Buzzard	2	15	1,688	15 observations of between 1-2 individuals flying, soaring, hunting and perching in grassland, treelines and scrub to the north and occasionally within the Site.
Cormorant	3	4	633	Four observations of between 1-3 individuals flying over grassland and river habitat to the north and within the Site.
Curlew	5	1	48	One observation of five individuals flying over grassland within the Site in October 2020.
Golden plover	42	1	180	One observation of 42 individuals flying between 150-200m over grassland within the Site in February 2021.
Grey heron	2	1	60	One observation of two individuals flying north-west over grassland outside and within the Site.
Kestrel	1	13	5,111	13 observations of individuals flying, hunting and circling over grassland frequently outside and occasionally within the Site.
Lapwing	1	1	30	One observation of an individual flying over grassland north-west of the Site.
Lesser black-backed gull	30	3	1,020	Three observations of individual birds and a flock of 30 individuals flying over grassland frequently north-west and occasionally within the Site.
Little egret	1	1	180	One observation of an individual bird flying over grassland north and within the Site.
Mallard	7	7	350	Seven observations of flocks between 2 – 7 individuals flying over grassland north and west of the Site.
Merlin	1	2	230	Two observations of an individual male bird flying and mobbing over

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
				grassland north-west of the Site in January 2021.
Peregrine	2	5	425	Five observations of between 1-2 male and female birds flying, circling and mobbing birds over grassland north-west of the Site.
Snipe	4	1	180	One observation of four individuals flying between 0-20m over grassland north-west of the Site in November 2020.
Sparrowhawk	1	3	125	Three observations of individual birds flying, hunting, circling and perched over grassland north-west of the Site.

Peak counts for notable species recorded are provided in **Table 15**.

Table 15. VP survey peak counts for notable species during the 2020/21 non-breeding season

Common name	Scientific name	Peak count
Black-headed gull	<i>Chroicocephalus ridibundus</i>	180
Cormorant	<i>Phalacrocorax carbo</i>	4
Goldcrest	<i>Regulus regulus</i>	10
Golden plover	<i>Pluvialis apricaria</i>	42
Grey wagtail	<i>Motacilla cinerea</i>	2
Greylag goose	<i>Anser anser</i>	1
House martin	<i>Delichon urbicum</i>	21
House sparrow	<i>Passer domesticus</i>	25
Kestrel	<i>Falco tinnunculus</i>	1
Lapwing	<i>Vanellus vanellus</i>	1
Lesser black-backed gull	<i>Larus fuscus</i>	31
Linnet	<i>Linaria cannabina</i>	12
Little egret	<i>Egretta garzetta</i>	3
Mallard	<i>Anas platyrhynchos</i>	17
Meadow pipit	<i>Anthus pratensis</i>	26
Merlin	<i>Falco columbarius</i>	1
Mute swan	<i>Cygnus olor</i>	2
Peregrine	<i>Falco peregrinus</i>	1
Redshank	<i>Tringa totanus</i>	1
Redwing	<i>Turdus iliacus</i>	450

Common name	Scientific name	Peak count
Skylark	<i>Alauda arvensis</i>	16
Snipe	<i>Gallinago gallinago</i>	7
Starling	<i>Sturnus vulgaris</i>	410
Stock dove	<i>Columba oenas</i>	5

2021/22

A total of 45 species were recorded during the VP surveys undertaken between October 2021 and March 2022 inclusive. These were largely common and widespread non-target species but did include target species and species of conservation concern in Ireland.

The 45 species recorded included flight activity by 12 target species. Peak counts and flight activity for these species are summarised in **Table 16**. Flight lines recorded for target species are indicated in **Figure 7b**.

Table 16. VP flight activity summary for target species during the 2021/22 non-breeding season

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
Black-headed gull	42	5	195	Five observations of small (8-17 birds) and a large flock (42) flying over grassland north-west of the Site.
Buzzard	1	27	1,398	27 observations of individual birds flying, soaring, circling, mobbing and perching in grassland, river and treeline habitat north-west and within the Site.
Common gull	3	1	10	One observation of three birds flying over grassland west of the Site.
Cormorant	6	16	205	16 observations of between 1-6 individuals perched and flying grassland and river habitat north, west and within the Site.
Great black-backed gull	2	2	90	Two observations of 1-2 individuals flying, soaring and circling over grassland between 50 – 180m north and within the Site.
Grey heron	1	1	10	One observation of an individual flying over grassland west and within the Site.
Herring gull	30	5	1,062	Five observations of flocks between 7-30 individuals flying

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
				over grassland north-west of the Site.
Kestrel	1	30	2,959	30 observations of individual birds perched, flying and hunting in grassland, river and hedgerow habitat
Lesser black-backed gull	60	33	3,119	33 observations of individual birds, small flocks (2 – 14 birds) and large flocks (19 – 60 birds) loafing, flying or circling grassland frequently outside and occasionally within the Site.
Little egret	1	2	25	Two observations of individual birds flying between 0-20m over grassland west of the Site.
Mallard	6	13	230	13 observations of between 1-6 individual birds perched and flying over grassland and river habitat north-west of the Site.
Snipe	1	2	18	Two observations of individual birds perched and flying over grassland north-west of the Site.

Peak counts for notable species recorded are provided in **Table 17**.

Table 17. VP survey peak counts for notable species during the 2021/22 non-breeding season

Common name	Scientific name	Peak count
Black-headed gull	<i>Chroicocephalus ridibundus</i>	75
Common gull	<i>Larus canus</i>	3
Cormorant	<i>Phalacrocorax carbo</i>	6
Goldcrest	<i>Regulus regulus</i>	1
Grey wagtail	<i>Motacilla cinerea</i>	1
Herring gull	<i>Larus argentatus</i>	57
House sparrow	<i>Passer domesticus</i>	8
Kestrel	<i>Falco tinnunculus</i>	3
Lesser black-backed gull	<i>Larus fuscus</i>	80
Little egret	<i>Egretta garzetta</i>	1
Mallard	<i>Anas platyrhynchos</i>	13
Meadow pipit	<i>Anthus pratensis</i>	16
Redwing	<i>Turdus iliacus</i>	100
Skylark	<i>Alauda arvensis</i>	2
Snipe	<i>Gallinago gallinago</i>	1

Common name	Scientific name	Peak count
Starling	<i>Sturnus vulgaris</i>	300
Stock dove	<i>Columba oenas</i>	4
Swallow	<i>Hirundo rustica</i>	1

2022/23

A total of 62 species were recorded during the VP surveys undertaken between October 2022 and March 2023 inclusive. These were largely common and widespread non-target species but did include a diverse range of target species and species of conservation concern in Ireland.

The 62 species recorded included flight activity by 23 target species. Peak counts and flight activity for these species are summarised in **Table 18**. Flight lines recorded for target species are indicated in **Figure 7c**.

Table 18. VP flight activity summary for target species during the 2022/23 non-breeding season

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
Black-headed gull	107	27	1,728	27 observations of individual birds, small flocks (2 – 16 birds) and large flocks (20 – 107 birds) flying and circling over grassland and plantation woodland habitat outside and within the Site.
Buzzard	1	27	1,505	27 observations of individual birds perching, flying and soaring over grassland, woodland and river habitat north and within the Site.
Common gull	7	2	110	Two observations of small flocks flying over grassland west of the Site.
Cormorant	12	61	2,692	61 observations of between 1 – 12 individuals perched or flying over grassland and river habitat outside and within the Site.
Golden plover	47	8	994	Eight observations of small (4-16 birds) and large flocks (26 – 47 birds) flying over grassland frequently outside and occasionally within the Site.
Grey heron	2	5	92	Five observations of between 1-2 individuals flying over grassland north and within the Site.

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
Greylag goose	11	4	300	Four observations of between 2-11 individuals flying over grassland north and within the Site.
Hen harrier	1	4	80	Four observations of an individual bird flying between 0-20m over grassland, agricultural tracks and plantation woodland within the Site in February 2023.
Herring gull	1	2	97	Two observations of individual birds flying over grassland north and within the Site.
Kestrel	1	41	4,564	41 observations of individual birds perched, hunting, circling and flying over grassland, river, scrub and plantation woodland habitat north and within the Site.
Lapwing	24	4	316	Four observations of between 1-2 individuals and a flock of 24 individuals perched, feeding and flying over grassland east and within the Site.
Lesser black-backed gull	14	25	2,385	25 observations of between 1 – 14 individuals flying and circling over grassland outside and within the Site.
Little egret	4	11	590	11 observations of between 1-4 individuals perched and flying over grassland outside and within the Site.
Mallard	9	10	331	Ten observations of between 1-9 individuals perched and flying over grassland outside and within the Site.
Mediterranean gull	1	1	60	One observation of an individual bird flying between 50-100m over grassland west of the Site in January 2023.
Merlin	1	1	25	One observation of an individual bird perched and flying between 0-20m over grassland and river habitat within the Site in December 2022.
Mute swan	2	2	47	Two observations of two individuals perched and flying over grassland within the Site.
Peregrine	1	6	477	Six observations of individual birds circling, hunting and flying over grassland, scrub and treelines outside and within the Site.

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
Shoveler	6	2	69	Two observations of two and six birds perching, flying and foraging over grassland and lagoon habitat south of the Site.
Snipe	11	16	265	16 observations of individual birds, small flocks (2 – 4 birds) and a flock of 11 birds perched and flying over grassland, river and lagoon habitat north-east, south and within the Site.
Sparrowhawk	1	13	514	13 observations of individual male and female birds hunting and flying at 0-20m while occasionally soaring between 50-180m and being mobbed by crows over grassland frequently outside and occasionally within the Site.
Teal	4	1	15	One observation of four individual birds flying between 0-20m from the river north-east of the Site over grassland within the Site.
Wigeon	18	1	34	One observation of 18 individual birds circling and perched in the lagoon south of the Site.

Peak counts for notable species recorded are provided in **Table 19**.

Table 19. VP survey peak counts for notable species during the 2022/23 non-breeding season

Common name	Scientific name	Peak count
Black-headed gull	<i>Chroicocephalus ridibundus</i>	107
Common gull	<i>Larus canus</i>	7
Cormorant	<i>Phalacrocorax carbo</i>	12
Goldcrest	<i>Regulus regulus</i>	3
Golden plover	<i>Pluvialis apricaria</i>	47
Grey wagtail	<i>Motacilla cinerea</i>	2
Green sandpiper	<i>Tringa ochropus</i>	1
Greylag goose	<i>Anser anser</i>	11
Hen harrier	<i>Circus cyaneus</i>	1
Herring gull	<i>Larus argentatus</i>	1
House sparrow	<i>Passer domesticus</i>	8
Kestrel	<i>Falco tinnunculus</i>	1

Common name	Scientific name	Peak count
Lapwing	<i>Vanellus vanellus</i>	24
Lesser black-backed gull	<i>Larus fuscus</i>	14
Linnet	<i>Linaria cannabina</i>	15
Little egret	<i>Egretta garzetta</i>	4
Mallard	<i>Anas platyrhynchos</i>	9
Meadow pipit	<i>Anthus pratensis</i>	35
Mediterranean gull	<i>Ichthyaeetus melanocephalus</i>	1
Merlin	<i>Falco columbarius</i>	1
Mute swan	<i>Cygnus olor</i>	2
Peregrine	<i>Falco peregrinus</i>	1
Redwing	<i>Turdus iliacus</i>	120
Shoveler	<i>Spatula clypeata</i>	6
Skylark	<i>Alauda arvensis</i>	30
Snipe	<i>Gallinago gallinago</i>	11
Starling	<i>Sturnus vulgaris</i>	292
Stock dove	<i>Columba oenas</i>	2
Swallow	<i>Hirundo rustica</i>	1
Teal	<i>Anas crecca</i>	4
Wigeon	<i>Mareca penelope</i>	18

2023/24

A total of 29 species were recorded during the VP surveys undertaken between October 2023 and March 2024 inclusive. These were largely common and widespread non-target species but did include target species and species of conservation concern in Ireland.

The 29 species recorded included flight activity by 24 target species. Peak counts and flight activity for these species are summarised in **Table 20**. Flight lines recorded for target species are indicated in **Figure 7d**.

Table 20. VP flight activity summary for target species during the 2023/24 non-breeding season

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
Barn owl	1	1	8	One observation of an individual bird flying between 20-50m over improved grassland east of the Site.
Black-headed gull	120	26	2,611	26 observations of individuals, small flocks (2 – 12 birds) and

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
				large flocks (24 – 120 birds) over grassland, river and lagoon habitat frequently outside and occasionally within the Site.
Buzzard	4	32	3,419	32 observations of 1-4 individuals soaring, circling, hunting and flying over grassland, treelines and river habitat outside and within the Site.
Cattle egret	1	2	120	Two observations of individual birds flying over grassland within the Site in November 2023.
Common gull	30	5	921	Five observations of individual birds, small flocks (3-8 birds) and large flocks (28 – 30 birds) flying over grassland south and within the Site.
Cormorant	7	82	3,015	82 observations of between 1-7 individual birds flying over grassland and river habitat along the River Loobagh, within the Site and towards Charleville Lagoons.
Curlew	1	1	22	One observation of an individual bird flying over grassland north of the Site in February 2024.
Golden plover	14	8	1,677	Eight observations of between 1-14 individual birds flying over grassland frequently outside and occasionally within the Site.
Grey heron	2	17	428	17 observations of between 1-2 individuals flying over grassland and river habitat outside and within the Site.
Greylag goose	1	1	50	One observation of an individual bird flying over grassland between 20-50m south and within the Site.
Hen harrier	1	4	134	Four observations of individual male and female birds flying and hunting between 0-20m over grassland north, west and within the Site in November 2023 and January 2024.
Kestrel	1	62	7,389	62 observations of individual birds flying over grassland, river and lagoon habitat outside and within the Site.
Lapwing	24	4	136	Four observations of between 1-2 individuals and a flock of 24

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
				individuals flying over grassland north and within the Site.
Lesser black-backed gull	44	25	2,204	25 observations of individual birds, small flocks (3 – 9 birds) and large flocks (17 – 44 birds) flying over grassland outside and within the Site.
Little egret	4	22	1,039	22 observations of between 1-4 birds flying over grassland, river and lagoon habitat outside and within the Site.
Mallard	20	39	1,071	39 observations of individual birds, small flocks (2 – 9 birds) and a flock of 20 birds flying over grassland, river and lagoon habitat outside and within the Site.
Mute swan	12	10	342	Ten observations of between 1 - 4 individuals and a flock of 12 individuals flying over grassland, river and lagoon habitat outside and within the Site.
Peregrine	2	9	217	Nine observations of between 1-2 individuals hunting and flying over grassland frequently outside and occasionally within the Site.
Short-eared owl	1	1	40	One observation of an individual bird hunting between 0 – 20m over grassland west of the Site in January 2024.
Shoveler	5	3	815	Three observations of between 4-5 individuals over lagoon habitat south and within the Site.
Snipe	19	22	544	22 observations of individual birds, small flocks (2 – 5 birds) and larger flocks (14 – 19 birds) flying over grassland, river and lagoon habitat outside and within the Site.
Sparrowhawk	1	9	198	Nine observations of individual birds hunting and flying over grassland frequently outside and occasionally within the Site.
White-tailed eagle	1	1	469	One observation of an individual bird flying between 100 – 180m over grassland east of the Site in March 2024.
Wigeon	300	6	1,035	Six observations of small flocks (4 – 5 birds), large flocks (18 – 24) and large flocks of 65 and 300 individuals flying and

Species	Peak count	Total no. of observations	Total flight time (seconds)	Description of activity
				circling over lagoon south and within the Site.

Peak counts for specially protected and notable non-target species recorded are provided in **Table 21**.

Table 21. VP survey peak counts for notable species during the 2023/24 non-breeding season

Common name	Scientific name	Peak count
Barn owl	<i>Tyto alba</i>	1
Black-headed gull	<i>Chroicocephalus ridibundus</i>	146
Common gull	<i>Larus canus</i>	30
Cormorant	<i>Phalacrocorax carbo</i>	15
Curlew	<i>Numenius arquata</i>	1
Golden plover	<i>Pluvialis apricaria</i>	14
Goldcrest	<i>Regulus regulus</i>	4
Grey wagtail	<i>Motacilla cinerea</i>	2
Greylag goose	<i>Anser anser</i>	11
Hen harrier	<i>Circus cyaneus</i>	1
Herring gull	<i>Larus argentatus</i>	1
House sparrow	<i>Passer domesticus</i>	3
Kestrel	<i>Falco tinnunculus</i>	4
Lapwing	<i>Vanellus vanellus</i>	25
Lesser black-backed gull	<i>Larus fuscus</i>	57
Little egret	<i>Egretta garzetta</i>	7
Mallard	<i>Anas platyrhynchos</i>	43
Meadow pipit	<i>Anthus pratensis</i>	40
Mute swan	<i>Cygnus olor</i>	5
Peregrine	<i>Falco peregrinus</i>	2
Short-eared owl	<i>Asio flammeus</i>	1
Redwing	<i>Turdus iliacus</i>	68
Shoveler	<i>Spatula clypeata</i>	4
Skylark	<i>Alauda arvensis</i>	14
Snipe	<i>Gallinago gallinago</i>	28
Starling	<i>Sturnus vulgaris</i>	190
Stock dove	<i>Columba oenas</i>	1
White-tailed eagle	<i>Haliaeetus albicilla</i>	1

Common name	Scientific name	Peak count
Wigeon	<i>Mareca penelope</i>	327

5.0 TRANSECT SURVEY RESULTS

The results of the transect surveys undertaken during the breeding and non-breeding seasons between 2023 and 2024 inclusive are described below. Detailed survey data are provided in **Appendix C**.

5.1 Breeding season

2023

A total of 37 species were recorded during the transect surveys undertaken between April and September 2023 inclusive, as indicated in **Table 22**. These were largely common and widespread non-target species but did include target species and species of conservation concern in Ireland. Target species recorded included buzzard, cormorant, grey heron, kestrel, mallard and moorhen.

Table 22. Transect survey peak counts for notable and target species during the 2023 breeding season

Common name	Scientific name	Peak counts			
		Transect A	Transect B	Transect C	Transect D
Cormorant	<i>Phalacrocorax carbo</i>	3	0	6	2
Goldcrest	<i>Regulus regulus</i>	0	1	1	0
Grasshopper warbler	<i>Locustella naevia</i>	0	1	0	0
Greenfinch	<i>Chloris chloris</i>	0	0	0	2
House martin	<i>Delichon urbicum</i>	0	0	0	5
House sparrow	<i>Passer domesticus</i>	3	0	0	0
Kestrel	<i>Falco tinnunculus</i>	1	0	0	0
Kingfisher	<i>Alcedo atthis</i>	0	0	1	0
Linnet	<i>Linaria cannabina</i>	23	1	0	15
Mallard	<i>Anas platyrhynchos</i>	10	0	0	0
Meadow pipit	<i>Anthus pratensis</i>	24	4	0	11
Mute swan	<i>Cygnus olor</i>	0	0	2	0
Skylark	<i>Alauda arvensis</i>	5	0	1	7
Spotted flycatcher	<i>Muscicapa striata</i>	0	1	0	0
Starling	<i>Sturnus vulgaris</i>	3	0	10	0
Swallow	<i>Hirundo rustica</i>	6	8	5	12
Swift	<i>Apus apus</i>	1	0	0	0

Common name	Scientific name	Peak counts			
		Transect A	Transect B	Transect C	Transect D
Willow warbler	<i>Phylloscopus trochilus</i>	1	3	4	1

2024

A total of 40 species were recorded during the transect surveys undertaken between April and September 2024 inclusive, as indicated in **Table 23**. These were largely common and widespread non-target species but did include target species and species of conservation concern in Ireland. Target species recorded included black-headed gull, buzzard, cormorant, grey heron, kestrel, lesser black-backed gull, little egret, mallard and whimbrel.

Table 23. Transect survey peak counts for notable species during the 2024 breeding season

Common name	Scientific name	Peak counts			
		Transect A	Transect B	Transect C	Transect D
Black-headed gull	<i>Chroicocephalus ridibundus</i>	5	0	0	0
Cormorant	<i>Phalacrocorax carbo</i>	2	0	6	3
Goldcrest	<i>Regulus regulus</i>	1	1	1	0
Greenfinch	<i>Chloris chloris</i>	0	1	1	0
Grey wagtail	<i>Motacilla cinerea</i>	1	0	0	0
House martin	<i>Delichon urbicum</i>	3	0	0	0
House sparrow	<i>Passer domesticus</i>	18	2	0	7
Kestrel	<i>Falco tinnunculus</i>	0	0	0	2
Lesser black-backed gull	<i>Larus fuscus</i>	12	0	1	0
Linnet	<i>Linaria cannabina</i>	8	0	7	4
Little egret	<i>Egretta garzetta</i>	1	0	0	4
Mallard	<i>Anas platyrhynchos</i>	2	3	2	0
Meadow pipit	<i>Anthus pratensis</i>	7	1	5	13
Sand martin	<i>Riparia riparia</i>	13	2	6	8
Skylark	<i>Alauda arvensis</i>	5	0	3	2
Starling	<i>Sturnus vulgaris</i>	75	0	0	3
Swallow	<i>Hirundo rustica</i>	27	8	12	15
Swift	<i>Apus apus</i>	5	3	4	0
Willow warbler	<i>Phylloscopus trochilus</i>	3	1	6	0

5.2 Non-breeding season

2022/23

A total of 33 species were recorded during the transect surveys undertaken between October 2023 and March 2024 inclusive, as indicated in **Table 24**. These were largely common and widespread non-target species but did include target species and species of conservation concern in Ireland. Target species recorded included black-headed gull, buzzard, cormorant, grey heron, kestrel, lesser black-backed gull, mallard, mute swan, peregrine, snipe, sparrowhawk and whooper swan.

Table 24. Transect survey peak counts for notable species during the 2022/23 non-breeding season

Common name	Scientific name	Peak counts			
		Transect A	Transect B	Transect C	Transect D
Black-headed gull	<i>Chroicocephalus ridibundus</i>	2	14	0	40
Cormorant	<i>Phalacrocorax carbo</i>	1	0	0	1
Goldcrest	<i>Regulus regulus</i>	0	2	3	0
Grey wagtail	<i>Motacilla cinerea</i>	1	0	0	0
House sparrow	<i>Passer domesticus</i>	4	0	0	0
Kestrel	<i>Falco tinnunculus</i>	1	1	0	1
Lesser black-backed gull	<i>Larus fuscus</i>	3	0	0	0
Linnet	<i>Linaria cannabina</i>	3	0	0	0
Mallard	<i>Anas platyrhynchos</i>	9	0	0	0
Meadow pipit	<i>Anthus pratensis</i>	16	2	4	4
Mute swan	<i>Cygnus olor</i>	4	0	0	0
Peregrine	<i>Falco peregrinus</i>	0	1	0	0
Redwing	<i>Turdus iliacus</i>	28	62	52	36
Sand martin	<i>Riparia riparia</i>	16	24	1	13
Skylark	<i>Alauda arvensis</i>	11	2	0	4
Snipe	<i>Gallinago gallinago</i>	2	0	0	1
Starling	<i>Sturnus vulgaris</i>	66	53	110	20
Whooper swan	<i>Cygnus cygnus</i>	2	0	0	0

2023/24

A total of 32 species were recorded during the transect surveys undertaken between October 2023 and March 2024 inclusive, as indicated in **Table 25**. These

were largely common and widespread non-target species but did include target species and species of conservation concern in Ireland. Target species recorded included black-headed gull, buzzard, cormorant, grey heron, kestrel, lesser black-backed gull, little egret, mallard, snipe, sparrowhawk and teal.

Table 25. Transect survey peak counts for notable species during the 2023/24 non-breeding season

Common name	Scientific name	Peak counts			
		Transect A	Transect B	Transect C	Transect D
Cormorant	<i>Phalacrocorax carbo</i>	0	0	10	0
Goldcrest	<i>Regulus regulus</i>	0	1	0	0
Kestrel	<i>Falco tinnunculus</i>	0	0	1	0
Lesser black-backed gull	<i>Larus fuscus</i>	0	7	0	0
Linnet	<i>Linaria cannabina</i>	0	2	0	1
Little egret	<i>Egretta garzetta</i>	1	4	0	0
Mallard	<i>Anas platyrhynchos</i>	0	0	2	0
Meadow pipit	<i>Anthus pratensis</i>	7	0	0	4
Redwing	<i>Turdus iliacus</i>	49	21	14	42
Sand martin	<i>Riparia riparia</i>	13	2	6	8
Skylark	<i>Alauda arvensis</i>	14	0	0	2
Snipe	<i>Gallinago gallinago</i>	2	0	0	3
Starling	<i>Sturnus vulgaris</i>	23	18	134	3
Teal	<i>Anas crecca</i>	0	0	4	0

6.0 ADDITIONAL SURVEY RESULTS

The results of the additional surveys undertaken during the breeding and non-breeding seasons between 2023 and 2024 inclusive are described below. Detailed survey data are provided in **Appendix C**.

6.1 Hinterland

Peak counts (i.e., the largest aggregations) recorded for specially protected and notable species during the hinterland surveys are summarised in **Table 26** below. A total of 16 species were observed during the three hinterland bird surveys conducted up to 5 km from the Site between October 2022 and April 2024.

Table 26. Summary of specially protected and notable species counts for hinterland bird surveys within 5km of the Site.

Common name	Scientific name	Peak count	Conservation status
Black-headed gull	<i>Chroicocephalus ridibundus</i>	14	BoCCI Amber listed / Wildlife Acts / SCI
Buzzard	<i>Buteo buteo</i>	6	BoCCI Green listed / Wildlife Acts
Cormorant	<i>Phalacrocorax carbo</i>	1	BoCCI Amber listed / Wildlife Acts / SS
Dipper	<i>Cinclus cinclus</i>	1	BoCCI Green listed / Wildlife Acts
Grey heron	<i>Ardea cinerea</i>	2	BoCCI Green listed / Wildlife Acts
Grey wagtail	<i>Motacilla cinerea</i>	1	BoCCI Red listed / Wildlife Acts
Kestrel	<i>Falco tinnunculus</i>	2	BoCCI Red listed / Wildlife Acts
Lesser black-backed gull	<i>Larus fuscus</i>	19	BoCCI Amber listed / Wildlife Acts
Little egret	<i>Egretta garzetta</i>	2	BoCCI Green listed / Annex I EU Birds Directive / Wildlife Acts
Mallard	<i>Anas platyrhynchos</i>	2	BoCCI Amber listed / Wildlife Acts / SCI
Mute swan	<i>Cygnus olor</i>	3	BoCCI Amber listed / Wildlife Acts
Sparrowhawk	<i>Accipiter nisus</i>	1	BoCCI Green listed / Wildlife Acts

6.2 Raptors

Observations recorded for specially protected and notable species during the raptor surveys are summarised in **Table 27** below. A total of three species were observed at suitable habitat locations during the three breeding raptor bird surveys conducted up to 2 km from the Site between May 2023 to July 2023 and May 2024.

Table 27. Summary of specially protected and notable species counts for breeding raptor bird surveys within 2km of the Site.

Common name	Scientific name	Observations	Conservation status	Activity
Buzzard	<i>Buteo buteo</i>	17	BoCCI Green listed / Wildlife Acts	Birds observed flying, hunting, soaring over the Site. No breeding activity recorded.
Kestrel	<i>Falco tinnunculus</i>	16	BoCCI Red listed / Wildlife Acts	Birds observed flying over the Site. No breeding activity recorded.
Sparrowhawk	<i>Accipiter nisus</i>	1	BoCCI Green listed / Wildlife Acts	Individual bird observed flying over the survey area in June 2023. No breeding activity records.

6.3 Barn owl

Site descriptions for buildings recorded with potential to support nesting barn owls within 1km of the Site during the barn owl surveys are summarised in **Table 28**. Of the seven sites identified with potential, three were considered suitable for nesting barn owl across two survey visits between April (Visit 1), May (Visit 2) and September (Visit 3) 2023.

Table 28. Summary of barn owl site suitability and activity within 5km of the Site.

Site	Site Description	Visit 1	Visit 2	Visit 3
1	Derelict cottage with cavities under the metal roof.	Considered suitable for nesting barn owl. Cavities under the metal roof provided a suitable nesting site.	No barn owl activity or vocalisations were detected throughout the survey visit and dusk survey.	Remained suitable for nesting barn owl. Cavities under the metal roof provided a suitable nesting site. No evidence of barn owl
3	Derelict cottage with cavities within the original thatch roof covered by sheet-metal roofing.	Considered suitable for nesting barn owl. Cavities under the original thatch and metal roof provided potential nesting sites.	No barn owl activity or vocalisations were detected throughout the survey visit and dusk survey.	Remained suitable for nesting barn owl. Cavities under the original thatch, metal roof and chimney provided potential nesting sites. No evidence of barn owl observed
4	Derelict cottage with accessible chimney covered by ivy and access	Considered suitable for nesting barn owl. Cavities present which could provide potential	No barn owl activity or vocalisations were detected throughout the	Considered suitable for nesting barn owl. Cavities present which could provide potential nesting sites. White

Site	Site Description	Visit 1	Visit 2	Visit 3
	points through gable walls.	nesting sites. lin use by roosting jackdaw.	survey visit and dusk survey.	wash observed but likely from use by jackdaws. Dusk visit confirmed no barn owl or jackdaw.

6.4 Waders

A total of two species were observed during the breeding wader bird surveys conducted within the Site between April and May 2023. No breeding activity was recorded within the Site. Peak counts (i.e., the largest aggregations) recorded during the breeding wader surveys for specially protected and notable species are summarised in **Table 29**.

Table 29. Summary of specially protected and notable species counts for breeding wader surveys within the Site.

Common name	Scientific name	Peak count	Conservation status
Snipe	<i>Gallinago gallinago</i>	8	BoCCI Red listed / Wildlife Acts / SCI
Golden plover	<i>Pluvialis apricaria</i>	24	BoCCI Green listed / Wildlife Acts

6.5 Waterbirds

Breeding season

2023

A total of 22 species were observed during the waterbird bird surveys conducted within the Charleville Lagoons (approximately 100m south-west of the Site) between April 2023 and September 2023. Peak counts (i.e., the largest aggregations) recorded during the waterbird surveys for specially protected and notable species are summarised in **Table 30**. No breeding activity was recorded within the Site.

Table 30. Summary of specially protected and notable species counts for waterbird surveys within Charleville Lagoons during the 2023 breeding season.

Common name	Scientific name	Peak count	Conservation status
Black-headed gull	<i>Choroicocephalus ridibundus</i>	54	BoCCI Amber Listed / Wildlife Acts / SCI
Common sandpiper	<i>Actitis hypoleucos</i>	1	BoCCI Amber Listed / Wildlife Acts

Common name	Scientific name	Peak count	Conservation status
Coot	<i>Fulica atra</i>	16	BoCCI Amber Listed / Wildlife Acts
Cormorant	<i>Phalacrocorax carbo</i>	11	BoCCI Amber Listed / Wildlife Acts / SS
Gadwall	<i>Mareca strepera</i>	2	BoCCI Amber Listed / Wildlife Acts / SCI
Green sandpiper	<i>Tringa ochropus</i>	3	BoCCI Green Listed / Wildlife Acts
Grey heron	<i>Ardea cinerea</i>	2	BoCCI Green Listed / Wildlife Acts
Kestrel	<i>Falco tinnunculus</i>	1	BoCCI Red Listed / Wildlife Acts
Kingfisher	<i>Alcedo atthis</i>	1	BoCCI Amber Listed / Annex I EU Birds Directive / Wildlife Acts
Little egret	<i>Egretta garzetta</i>	2	BoCCI Green Listed / Annex I EU Birds Directive / Wildlife Acts
Little grebe	<i>Tachybaptus ruficollis</i>	100	BoCCI Green Listed / Wildlife Acts
Mallard	<i>Anas platyrhynchos</i>	194	BoCCI Amber Listed / Wildlife Acts
Moorhen	<i>Gallinula chloropus</i>	21	BoCCI Green Listed / Wildlife Acts
Mute swan	<i>Cygnus olor</i>	5	BoCCI Amber Listed / Wildlife Acts
Peregrine	<i>Falco peregrinus</i>	1	BoCCI Green Listed / Annex I EU Birds Directive / Wildlife Acts
Pochard	<i>Aythya farina</i>	1	BoCCI Red Listed / Wildlife Acts
Ringed plover	<i>Charadrius hiaticula</i>	2	BoCCI Amber Listed / Wildlife Acts
Ruff	<i>Calidris pugnax</i>	2	BoCCI Amber Listed / Annex I EU Birds Directive / Wildlife Acts
Shoveler	<i>Spatula clypeata</i>	45	BoCCI Amber Listed / Wildlife Acts
Spotted redshank	<i>Tringa erythropus</i>	1	BoCCI Amber Listed / Wildlife Acts
Teal	<i>Anas crecca</i>	127	BoCCI Amber Listed / Wildlife Acts / SS
Tufted duck	<i>Aythya fuligula</i>	32	BoCCI Amber Listed / Wildlife Acts

Non-breeding season

2022/23

A total of 15 species were observed during the waterbird bird surveys conducted within the Charleville Lagoons (approximately 100m south-west of the Site) in March 2023. Peak counts (i.e., the largest aggregations) recorded during the waterbird surveys for specially protected and notable species are summarised in **Table 31**. No breeding activity was recorded within the Site.

Table 31. Summary of specially protected and notable species counts for waterbird surveys within Charleville Lagoons in 2022/23 non-breeding season.

Common name	Scientific name	Peak count	Conservation status
Black-headed gull	<i>Choroicocephalus ridibundus</i>	18	BoCCI Amber Listed / Wildlife Acts / SCI
Coot	<i>Fulica atra</i>	51	BoCCI Amber Listed / Wildlife Acts
Cormorant	<i>Phalacrocorax carbo</i>	10	BoCCI Amber Listed / Wildlife Acts / SS
Lesser black-backed gull	<i>Larus fuscus</i>	6	BoCCI Amber Listed / Wildlife Acts
Little egret	<i>Egretta garzetta</i>	1	BoCCI Green Listed / Annex I EU Birds Directive / Wildlife Acts
Little grebe	<i>Tachybaptus ruficollis</i>	6	BoCCI Green Listed / Wildlife Acts
Mallard	<i>Anas platyrhynchos</i>	67	BoCCI Amber Listed / Wildlife Acts
Moorhen	<i>Gallinula chloropus</i>	6	BoCCI Green Listed / Wildlife Acts
Mute swan	<i>Cygnus olor</i>	7	BoCCI Amber Listed / Wildlife Acts
Shoveler	<i>Spatula clypeata</i>	38	BoCCI Amber Listed / Wildlife Acts
Snipe	<i>Gallinago gallinago</i>	5	BoCCI Red listed / Wildlife Acts
Teal	<i>Anas crecca</i>	307	BoCCI Amber Listed / Wildlife Acts / SS
Tufted duck	<i>Aythya fuligula</i>	24	BoCCI Amber Listed / Wildlife Acts
Water rail	<i>Rallus aquaticus</i>	1	BoCCI Amber Listed / Wildlife Acts
Wigeon	<i>Mareca penelope</i>	402	BoCCI Amber Listed / Wildlife Acts / SS

2023/24

A total of 21 species were observed during the waterbird bird surveys conducted within the Charleville Lagoons between December 2023 and March 2024. Peak counts (i.e., the largest aggregations) recorded during the waterbird surveys for specially protected and notable species are summarised in **Table 32**. No breeding activity was recorded within the Site.

Table 32. Summary of specially protected and notable species counts for waterbird surveys within Charleville Lagoons in 2023/24 non-breeding season.

Common name	Scientific name	Peak count	Conservation status
Black-headed gull	<i>Choroicocephalus ridibundus</i>	59	BoCCI Amber Listed / Wildlife Acts / SCI
Common sandpiper	<i>Actitis hypoleucos</i>	1	BoCCI Amber Listed / Wildlife Acts
Coot	<i>Fulica atra</i>	4	BoCCI Amber Listed / Wildlife Acts
Cormorant	<i>Phalacrocorax carbo</i>	5	BoCCI Amber Listed / Wildlife Acts / SS
Dunlin	<i>Calidris alpina</i>	4	BoCCI Red Listed / Wildlife Acts / SCI
Gadwall	<i>Mareca strepera</i>	17	BoCCI Amber Listed / Wildlife Acts / SCI
Great crested grebe	<i>Podiceps cristatus</i>	1	BoCCI Amber Listed / Wildlife Acts
Green sandpiper	<i>Tringa ochropus</i>	1	BoCCI Green Listed / Wildlife Acts
Grey heron	<i>Ardea cinerea</i>	2	BoCCI Green Listed / Wildlife Acts
Lesser black-backed gull	<i>Larus fuscus</i>	4	BoCCI Amber Listed / Wildlife Acts
Little egret	<i>Egretta garzetta</i>	6	BoCCI Green Listed / Annex I EU Birds Directive / Wildlife Acts
Little grebe	<i>Tachybaptus ruficollis</i>	8	BoCCI Green Listed / Wildlife Acts
Mallard	<i>Anas platyrhynchos</i>	129	BoCCI Amber Listed / Wildlife Acts
Moorhen	<i>Gallinula chloropus</i>	17	BoCCI Green Listed / Wildlife Acts
Mute swan	<i>Cygnus olor</i>	5	BoCCI Amber Listed / Wildlife Acts
Shoveler	<i>Spatula clypeata</i>	63	BoCCI Amber Listed / Wildlife Acts
Snipe	<i>Gallinago gallinago</i>	18	BoCCI Red listed / Wildlife Acts
Teal	<i>Anas crecca</i>	543	BoCCI Amber Listed / Wildlife Acts / SS
Tufted duck	<i>Aythya fuligula</i>	19	BoCCI Amber Listed / Wildlife Acts
Water rail	<i>Rallus aquaticus</i>	3	BoCCI Amber Listed / Wildlife Acts
Wigeon	<i>Mareca penelope</i>	456	BoCCI Amber Listed / Wildlife Acts / SS

6.6 Whooper swan

Whooper swan observations recorded during the detailed surveys undertaken between October 2023 and March 2024 inclusive are as detailed in **Table 33**. In summary, two whooper swan observations were recorded within 5km of the Site,

the nearest of which was approximately 1.1km north-east of the Site (**Figure 8b**). No evidence of connectivity with the Site was observed regarding whooper swan movement patterns.

Table 33. 2023/24 whooper swan survey results for the study area

Visit (date)	Location	Number of whooper swans recorded	Description of whooper swan activity
1 (27/10/23)	Near Bruree (c.1.1km north-east of the Site)	10	One group of ten flying in a north-eastern direction at 09:02.
	All other locations	0	None recorded.
2 (29-30/11/23)	Charleville Lagoon (c.0.1km south of the Site)	1	One recorded with a group of mute swans, before flying eastwards towards Bruff at 11:00.
	All other locations	0	None recorded.
3 (19/12/23)	All locations	0	None recorded.
4 (15/01/24)	All locations	0	None recorded.
5 (13/02/24)	All locations	0	None recorded.
6 (13/03/24)	All locations	0	None recorded.

Whooper swan observations recorded during the detailed surveys undertaken between October 2023 and March 2024 at Churchtown (located 13.5km south-west of the Site) and Kilcolman Wildlife Reserve (located c. 15.0km south of the Site) are detailed in **Table 34**. Whooper swans were recorded roosting and foraging at these locations throughout winter 2023/24, with peak counts of 119 at Churchtown and 104 at Kilcolman Wildfowl Reserve recorded. No evidence of connectivity between these locations and the Site was recorded.

Table 34. 2023/24 whooper swan survey results for Churchtown and Kilcolman Wildlife Reserve

Site	Whooper swan count										
	27/10/23	16/11/23	29/11/23	15/12/23	19/12/23	15/01/24	31/01/24	13/02/24	27/02/24	04/03/24	13/03/24
Churchtown	94	84	39	97	43	115	119	103	104	110	112
Kilcolman Wildfowl Reserve	0	0	42	28	104	3	16	24	23	19	19
Total	94	84	81	125	147	118	135	127	127	129	131

7.0 DISCUSSION

The findings of the desk study and field surveys described in this report are discussed below, both with regard to the ornithological features recorded, and in the context of relevant designated sites.

The Vantage Point and transect surveys of the Site and adjacent land undertaken between October 2020 and September 2024 inclusive recorded a total of 90 bird species; specifically, 74 species during the breeding season and 78 species during the non-breeding season (with many species observed during both periods).

Of the 90 species recorded, 37 were target species. The majority of these target species were recorded flying over the Site and/or adjacent land, with a wider range of target species recorded during the non-breeding season, when compared to the breeding season. Target species recorded during the field surveys are listed below:

- Barn owl
- Black-headed gull
- Black-tailed godwit
- Buzzard
- Cattle egret
- Common gull
- Cormorant
- Curlew
- Gadwall
- Golden plover
- Great black-backed gull
- Green sandpiper
- Grey heron
- Greylag goose
- Hen harrier
- Herring gull
- Kestrel
- Lapwing
- Lesser black-backed gull
- Little egret
- Mallard
- Mediterranean gull
- Merlin
- Moorhen
- Mute swan
- Peregrine
- Redshank
- Short-eared owl
- Shoveler
- Snipe
- Sparrowhawk
- Teal
- Whimbrel
- White-tailed eagle
- Whooper swan
- Wigeon
- Yellow-legged gull

Target species recorded included features of nearby designated sites, species listed on Annex I of the Birds Directive, BoCCI Red listed species and BoCCI Amber Listed species.

Relevant designated sites

The desk study identified three internationally designated sites of ornithological interest: Blackwater River (Cork/Waterford) SAC, located approximately 7.1km south of the Site; Ballyhoura Mountains SAC and IBA, located approximately 9.7km south-east of the Site; and Kilcolman Bog SPA, located approximately 15km south of the Site. These sites are discussed below in the context of the 2020 – 2024 survey data.

Blackwater River (Cork/Waterford) SAC and pNHA

Blackwater River (Cork/Waterford) SAC is designated for its riparian and marginal habitats with ornithological interest for several species including cormorant, dipper, grey heron and long-eared owl. Although not included as qualifying features, these species were identified as being of ornithological value to the SAC. Throughout the survey period cormorant, dipper and grey heron were recorded during the vantage point, transect and hinterland surveys within and beyond the Site.

No activity by long-eared owl and only one observation of dipper in February 2023 was recorded 4km north of the Site on a hinterland survey within the 2020 – 2024 survey period. No further observations of dipper were recorded within the Site. Considering the available woodland, farmland and scrub mosaic, the Site provides limited suitable habitat for nesting long-eared owl. Riparian habitat along the River Loobagh could also be suitable for breeding dipper, but no suitable waterbodies are within the Site. In the context of the limited habitat availability within the Site, absence of observations for both species from relevant surveys including breeding raptor, hinterland and extensive coverage from vantage point surveys between 2020-2024, the Site is not considered to be of value for the populations of these species.

The breeding assemblage of cormorant and grey heron forms a non-qualifying interest for the Blackwater River SAC. Both species are described as forming significant roosts during the breeding season. Citation estimates for grey heron ranged between 2 – 25 pairs across four sites: Dromana Rock (2-3 pairs), Dromana Rock Woodland (25 pairs), Ardsallagh Wood (8 pairs) and Rincrew Wood (20 pairs). Cormorant has no specific citation population estimate across the SAC. Both cormorant and grey heron were both frequently recorded during the breeding and non-breeding season vantage point surveys between 2020 – 2024, with peak counts of 14 and 2 respectively of birds mostly commuting from the River Loobagh, flying over the Site towards Charleville Lagoons. This was reflected in the waterbird surveys which provided similar peak counts of 2 and 11 respectively at Charleville Lagoons. It's possible a portion of the population present within the study area could be commuting from the SAC; however, the distance between the River Loobagh and River Blackwater is 7.2km from the Site, and the majority of the flight activity recorded appears to be from commuting individuals travelling north and south towards the Site to utilise Charleville Lagoons, with limited activity appearing to continue further along the River Loobagh or beyond Charleville Lagoons. Additionally, wider hinterland surveys recorded few observations of

cormorant commuting south of the Site. Therefore, the populations of grey heron and cormorant present are unlikely to be important in the context of the non-qualifying populations present along the Blackwater SAC.

Ballyhoura Mountains SAC, IBA and pNHA

Ballyhoura Mountains is designated for its extensive mosaic of dry and wet heathland associated with extents of blanket bog and additional non-qualifying habitats including wide ranges of coniferous plantation. The site is not designated as an SAC for its ornithological assemblage but the reference quotation as part of its submission into the Natura 2000 network includes an estimation of population sizes for hen harrier (seven pairs) and peregrine (one pair). Additionally, the site was designated as an IBA in 2006 on account of these populations, with population reference quotations under this designation as of an estimated 17-19 pairs of hen harrier, equivalent to 12% of the national population in Ireland.

Hen harrier were infrequently recorded during the survey period with a peak count of one individual from eight observations of individual male and female birds hunting during vantage point surveys in 2022/23 and 2023/24. The Site provides no suitable nesting habitat but does consist of pasture and wet grassland with scrub and hedgerow habitat providing suitable foraging habitat. Activity within the Site was typically birds hunting between 0-20m over wet grassland and pasture grassland within the Site. Hen harrier territory sizes can be highly variable with core ranges typically considered within 2km and extending further for male birds or in the non-breeding season whereby a maximum range of 10km can occur⁶. Therefore, considering the distance of 9.7km from the Site is at the furthest extent of the typical hen harrier territory range and activity recorded was restricted to the non-breeding season, it is unlikely that the Site is of particular importance to the Ballyhoura Mountains SAC/IBA populations and the population within the Site is considered to be of up to **Local (Lower value) importance**.

Peregrine was occasionally recorded within the survey period providing a peak count of two individuals consisting of adult and juvenile birds flying, circling, commuting and foraging occasionally within and frequently in the surrounding grassland outside of the Site. Peregrine typically have a core range of 2km potentially extending to 18km, which can overlap with other pairs and also can extend further in periods of poor weather⁶. With Ballyhoura mountains SAC and IBA located 9.7km south of the site, it is unlikely that the Site is of any particular importance to the breeding assemblage cited in the SAC/IBA designation. This is demonstrated within the survey period by the absence of apparent breeding pairs recorded within 2km of the Site and comparatively greater activity recorded during the non-breeding season throughout the survey period. However, due to the level of the activity within the Site, the peregrine population is considered to be of up to **Local (Higher value) importance**.

Kilcolman Bog SPA and pNHA

The desk study identified Kilcolman Bog SPA and pNHA, located approximately 15km south of the Site in the southern foothills of Ballyhoura Mountains. The site is designated for its internationally important populations of whooper swan, teal, shoveler and assemblage of wetland and waterbirds. All three SS species were recorded during the 2020 – 2024 survey period. Two of these species (teal and shoveler) were recorded infrequently flying within the Site or over Charleville Lagoons and/or in low numbers in the context of the citation populations present at the site. Whooper swan was also recorded infrequently between the 2020 – 2024 survey period. The whooper swan hinterland surveys within 5km of the Site recorded two encounters, comprising a group of 11 birds flying north of the Site and an incidental record of a whooper swan present at Charleville Lagoons. One record was also recorded during the 2022/23 transect surveys of two individuals flying towards Charleville Lagoons from the south-west of the Site in November 2022 and one individual foraging on grassland within the Site in March 2023. No whooper swan were recorded during any of the other surveys (e.g. vantage point or hinterland). Despite suitable foraging habitat being present, considering the low level and locations of species activity throughout the survey period and during the extensive survey effort from vantage point, transect, whooper swan, hinterland and waterbird surveys, the Site is not considered to be of particular value to whooper swan, shoveler or teal in relation to (i.e., regarding potential functional linkage) Kilcolman Bog SPA.

Importance of breeding and non-breeding bird populations

Waterbirds

Throughout the survey period there were no large aggregations of wintering waterbirds (i.e., ducks, swans, geese and cormorant) recorded within the Site, and no breeding by scarce waterfowl species or significant numbers of widespread waterbird species was recorded. Activity by waterbirds generally consisted of common species (greylag goose and moorhen) with frequent mallard (1 – 8 birds), mute swan (1 – 3 birds) and cormorant (1 – 14 birds) recorded flying over the Site, with infrequent observations of notable species (e.g. shoveler, gadwall and teal) flying outside or infrequently within the Site towards Charleville Lagoons. Whooper swan observations were mostly outside of the Site comprising three records of 11 birds flying north of the Site, an incidental record of a whooper swan present at Charleville Lagoon and two individuals flying towards Charleville Lagoons from the south-west of the Site in November 2022. Throughout the survey period only one individual whooper swan was recorded foraging on grassland within the Site in March 2023. No records of whooper swan were recorded during the waterbird surveys at Charleville Lagoons. Other waterbird species were recorded in low numbers only, with activity generally observed outside the Site. The Site does not support any breeding habitats that are likely to be frequently used by waterfowl (e.g., large waterbodies) and only provides pasture and wet grassland which may occasionally be used for foraging, which is also abundant in the surrounding

landscape. The habitat within the Site is not therefore considered to be of value for whooper swan or any other waterbirds.

Despite the habitat within the Site not providing significant value for waterbird species, the airspace above the Site did record frequent commuting by a mixture of common and widespread but notable waterbird species directly through the Site towards Charleville Lagoons. Therefore, considering the level of cormorant flight activity, the airspace above the Site is considered to be of up to **Local (Higher value) importance**. All other waterbird species discussed above are considered to be of up to **Local (Lower value) importance**.

Raptors

In addition to hen harrier and peregrine (discussed and assessed in relation to Ballyhoura Mountains SAC/IBA/pNHA), a further seven raptor species were recorded including: barn owl, buzzard, kestrel, merlin, short-eared owl, sparrowhawk and white-tailed eagle. Four of the species (barn owl, merlin, short-eared owl and white-tailed eagle) were recorded in low numbers only, with activity generally observed outside of the Site boundary. As such, the Site is not considered to be of particular value for these species. Raptor-specific surveys (e.g. barn owl, peregrine and breeding raptor) identified suitable potential nesting sites for the target species within the study area, although no evidence of breeding activity was recorded. Observations for buzzard, kestrel and sparrowhawk are discussed further below.

Buzzard is a common and widespread species in Ireland. This species was frequently recorded during the breeding and non-breeding seasons with birds flying, hunting and circling over the Site with up to five individuals recorded during the surveys outside and within the Site. Considering the level of buzzard activity recorded in the context of the conservation status of this species in Ireland, the Site is considered to be of **Local (Lower value) importance** for this species during the breeding and non-breeding seasons.

Kestrel is regarded as a species of high conservation importance in Ireland due to its inclusion on the BoCCI Red List. This species was frequently recorded during the breeding and non-breeding seasons, with breeding activity recorded c.250m south-west of the Site during the surveys in August 2023, with juvenile birds observed in November 2023 and August to December 2024 during the vantage point surveys. As such, the Site likely supports least one kestrel territory and is used for foraging purposes during the breeding and non-breeding seasons. Considering the high level of kestrel activity recorded during the vantage point and transect surveys in the context of the conservation status of this species in Ireland, the Site is considered to be of **Local (Higher value) importance** for this species during the breeding and non-breeding seasons.

Sparrowhawk is a common and widespread species in Ireland, reflected by its inclusion on the BoCCI Green List. Sparrowhawk activity was recorded within and (particularly) adjacent to the Site during the breeding and non-breeding seasons.

Observations were typically of lone adults, with up to ten observations recorded during a single VP survey season. Considering the level of sparrowhawk activity recorded and the conservation status of this species in Ireland, the Site is considered to be of up to **Local (Lower value) importance** for this species during the breeding and non-breeding seasons.

Hérons and egrets

Cattle egret (*Bubulcus ibis*) is an increasingly widespread species in Ireland. It is not, however, assessed on the BoCCI list and is a very scarce breeding species within Ireland, with the majority of records during the non-breeding season. Two observations were recorded in November 2023 of an individual flying over grassland within the Site. Considering the activity, and the conservation status of this species in Ireland, the Site is not considered to be of particular value for this species.

Little egret is a common and widespread species in Ireland and is afforded additional legal protection due to its inclusion on Annex I of the Birds Directive. Little egret was recorded during the breeding and non-breeding seasons, with counts of up to four birds recorded within the Site. The majority of observed activity was of birds foraging (e.g., along the River Loobagh), flying low over grassland within the Site and commuting towards Charleville Lagoons. Considering the low peak counts, and the conservation status of this species in Ireland, the site is considered to be of **Local (Lower value) importance** for little egret.

Grey heron is a common and widespread species in Ireland, reflected by its inclusion on the BoCCI Green List. Grey heron was recorded during the breeding and non-breeding seasons, with counts of up to two birds recorded within the Site. The majority of observed activity was of birds foraging (e.g., along the River Loobagh), flying low over grassland within the Site and commuting towards Charleville Lagoons. Considering the low peak counts, and the conservation status of this species in Ireland, the site is considered to be of **Local (Lower value) importance** for grey heron.

Waders

Five wader species were recorded within and adjacent to the Site during the field surveys (e.g. black-tailed godwit, curlew, green sandpiper, redshank and whimbrel). These species were recorded infrequently and in low numbers, with activity confined to birds flying over the Site and adjacent land. Considering the activity, suitable habitat and the conservation status of these five species in Ireland, the Site is not considered to be of particular value for these species. Three species (e.g. golden plover, lapwing and snipe) were recorded in larger flocks and more frequently within and adjacent to the Site during the survey period.

Golden plover is considered a non-breeding species to lowland farmland within Ireland and is a widespread but declining species, reflected by its inclusion on the BoCCI Red List. Golden plover is also afforded additional legal protection due to its

inclusion on Annex I of the Birds Directive. Activity varied within the Site with frequent observations of individuals, small flocks (3 – 16 birds) and larger flocks (24 – 42 birds) flying at varying heights over grassland outside and within the Site during the vantage point and breeding wader surveys. Similar activity was recorded during the breeding wader surveys (peak count of 24) with flocks observed foraging on pasture and wet grassland but evidence of no breeding activity. No records of golden plover were recorded during the waterbird or transect surveys. Considering the activity, and the conservation status of this species in Ireland, the Site is considered to be of **Local (Higher value) importance** for golden plover.

Lapwing is considered a resident species in Ireland that is a widespread but infrequent breeding species. Lapwing is in decline across Ireland, reflected by its inclusion on the BoCCI Red List. Observations within the Site typically consisted of between 1-2 birds with infrequent observations of larger flocks (24 birds) flying and occasionally feeding over grassland outside and within the Site or commuting towards Charleville Lagoons during the surveys. Considering the activity, and the conservation status of this species in Ireland, the Site is considered to be of **Local (Higher value) importance** for lapwing.

Snipe is considered a resident species in Ireland and is a widespread but declining species, reflected by its inclusion on the BoCCI Red List. Observations within the Site typically consisted of individual birds recorded feeding or flushed from wet grassland during the breeding wader surveys or individuals and flocks of varying size (4 – 29 birds) flying outside and within the Site during the vantage point surveys. Despite no breeding activity recorded during the survey period, the wet grassland within the Site provides suitable breeding and foraging habitat for snipe in the breeding and non-breeding seasons and the species could be under-represented during the surveys given its cryptic nature. Considering the activity, suitable habitat and the conservation status of this species in Ireland, the Site is considered to be of **Local (Higher value) importance** for snipe.

Gulls

A total of five gull species were recorded within and adjacent to the Site, namely: black-headed gull, common gull, great black-backed gull (*Larus marinus*), mediterranean gull (*Ichthyaetus melanocephalus*), lesser black-backed gull, herring gull (*Larus argentatus*) and yellow-legged gull. Activity mostly consisted of individual birds, small flocks, large flocks and mixed species flocks flying high over the Site during the breeding and non-breeding season, with feeding and roosting behaviour also recorded within grassland fields adjacent to and within the Site. For five gull species (common gull, great black-backed gull, herring gull, Mediterranean gull and yellow-legged gull) activity was infrequent within the Site and the Site is not considered to be of particular value for these species.

Across the survey period, peak counts for black-headed gull (140 birds) and lesser black-backed gull (60 birds) were recorded, with both species frequently commuting directly through the Site. Roosting on fields was infrequently recorded for these species throughout the survey period, with between 1-2 records per

species. Although the Site is not considered to be of particular value to these species, the aggregations of black-headed gull and lesser black-backed gull are considered, on a precautionary basis, to be of **Local (Higher value) importance**.

Non-target farmland species

A range of non-target farmland bird species were recorded within and adjacent to the Site during the breeding and non-breeding seasons, including species of conservation concern in Ireland. Notable species present during the breeding season included linnet, house sparrow (*Passer domesticus*), meadow pipit, skylark, starling, swallow, house martin (*Delichon urbicum*), sand martin and wheatear, which were recorded foraging over wet grassland and pasture grassland. Hedgerows, scrub and patches of woodland within the Site were frequented by goldcrest (*Regulus regulus*) and dunnock (*Prunella modularis*) with infrequent records of greenfinch (*Chloris chloris*), crossbill (*Loxia curvirostra*), spotted flycatcher (*Muscicapa striata*) and grasshopper warbler (*Locustella naevia*). The River Loobagh to the north-east of the Site was noted to support kingfisher, reed bunting and grey wagtail (*Motacilla cinerea*). Additionally, notable numbers of non-breeding species frequently included influxes of winter thrushes such as redwing (*Turdus iliacus*) and fieldfare (*Turdus pilaris*).

Considering the level of activity recorded by these species in the context of their population statuses in Ireland, the Site is considered to be of **Local (Higher value) importance** for populations of non-target farmland bird species during the breeding and non-breeding seasons.

APPENDIX A – RELEVANT LEGISLATION

International legislation

Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds (Birds Directive) 2009

The Birds Directive 2009 relates to the conservation of all species of naturally occurring birds in their wild state in the territory of the EU Member States (MSs) to which the treaty applies. Under the Birds Directive, the most suitable areas for conservation of the Annex I species are to be designated as Special Protection Areas (SPAs), as part of the European Natura 2000 network. Maintaining a coherent network of protected sites with overarching conservation objectives is required in order to fulfil the commitment made by governments to maintain environmental protections and continue to meet their international legal obligations.

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) 1992

The Habitats Directive 1992 requires EU MSs to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of community interest, which are listed under Annex I, II, IV and/or V. Species listed under Annex IV are known as ‘European Protected Species’ (EPS).

Under the Habitats Directive, EU Member States are required to contribute to the Natura 2000 network through the designation of Special Areas of Conservation (SACs) for natural habitat types listed in Annex I and habitats of species listed in Annex II.

The Convention on Wetlands of International Importance Especially as Waterfowl Habitat 1971: the Ramsar Convention

The Ramsar Convention is an intergovernmental treaty focused on the conservation and sustainable use of wetland, primarily as habitats for water birds. Under the convention, each ratified country is required to identify and designate sites (Ramsar sites) that meet the criteria for identifying a wetland of international importance, i.e., containing representative, rare or unique wetland types. In addition, the convention promotes international co-operation to promote the wise use of all wetlands and their resources.

Natura Impact Statement (NIS)

There is a requirement under the EU nature directives, and enshrined in country-specific domestic legislation, to undertake a screening exercise to determine whether any sites that form part of the Natura 2000 site network are likely to be significantly affected by any proposal (project or plan). The assessment must consider the proposals both alone and in combination with other plans and projects,

if they result from activities that are not directly connected with, or necessary to, the management of the designated sites. If significant effects are likely, an Appropriate Assessment (AA) will need to be carried out. The screening, any AA, and any subsequent assessment are collectively known as a Natura Impact Statement (NIS). The NIS needs to consider each of the 'Qualifying Features' (habitats or species) for which the Natura 2000 site is designated. Ramsar sites are treated in the same way as SACs and SPAs in a NIS, as are proposed Natura 2000 sites which have not yet been fully adopted.

The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) 1979

The Bonn Convention was adopted in 1979 and came into force in 1985. Contracting Parties work together to conserve migratory species and their habitats by providing strict protection for endangered migratory species (listed in Appendix I of the Convention), concluding multilateral agreements for the conservation and management of migratory species which require or would benefit from international cooperation (listed in Appendix II), and by undertaking cooperative research activities.

The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) 1979

The principal aims of the Bern Convention 1979 are to ensure the conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species) listed in Appendix III. To this end, the Bern Convention imposes legal obligations on contracting parties, protecting over 500 wild plant species and more than 1,000 wild animal species.

National legislation

Wildlife Act (1976), as amended

The Wildlife Act (1976) as amended is the principal national legislation for the protection of wildlife and the control of activities that may adversely affect wildlife. This legislation also seeks to conserve a representative sample of important ecosystems and regulate game resources. It makes licences mandatory for certain activities which may interfere with ecosystems and regulates the possession, trade, and movement of wildlife. Areas of importance for wildlife may be protected under the Act, either as Nature Reserves for Fauna, or by way of management agreements.

Wildlife (Amendment) Act, 2000, 2010, 2012

The main objectives of this Act designate and give protection to Natural Heritage Areas (NHAs) and improve the conservation of wildlife and their habitats while

ensuring Ireland's compliance with international biodiversity agreements. It broadens the scope the previous Wildlife Act to include hitherto omitted species. It legislates fines and punishments and allows for the imposition of prison sentences in certain circumstances.

APPENDIX B – SURVEY DETAILS

Vantage Point surveys

Table 35. 2020/21 non-breeding season VP survey details

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
October							
1	1	23/10/20	JM	09:00	12:00	03:00	A dry sunny, calm morning, wind direction west, wind F1-4, temp 6°C, visibility good.
1	2	23/10/20	JK	12:30	15:30	03:00	Partly cloudy, good sunny spells, wind direction southwest, wind F3, temp 10°C, visibility good.
2	1	23/10/20	JK	09:00	12:00	03:00	Sunny with some cloud, wind direction southwest, wind F3, temp 8°C, visibility good.
2	2	23/10/20	JM	12:30	15:30	03:00	A dry start to the day but some rain poured in later, wind direction southwest, wind F1-4, temp 6°C, visibility good.
3	1	29/10/20	JK	10:30	13:30	03:00	Cloudy, overcast, windy with showers at times, wind direction southwest, wind F5-6, temp 13°C, visibility good.
3	2	29/10/20	JM	14:00	17:00	03:00	A damp day with strong southwest winds, lots of showers but some dry periods, wind direction southwest, wind F2-6, temp 14°C-15°C, visibility ok.
4	1	29/10/20	JM	10:30	13:30	03:00	A damp day with lots of showers but a few dry periods, wind direction strong southwest winds, wind F2-6, temp 14°C-15°C, visibility ok.
4	2	29/10/20	JK	14:00	17:00	03:00	Cloudy, overcast with showers, wind direction southwest, wind F6, temp 14°C, visibility good.
November							
1	1	19/11/20	LD	09:30	12:30	03:00	Dry and bright, cold wind died off by 11am, wind direction north, wind F3 before 11am, temp 7°C, visibility good.
1	2	19/11/20	JM	13:00	16:00	03:00	A dry, cold, and sunny day, wind direction north, wind F2-4, temp 7°C-9°C, visibility good.
2	1	19/11/20	JM	09:30	12:30	03:00	A dry, cold, sunny day, wind direction north, wind F2-4, temp 7°C-9°C, visibility good.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
2	2	19/11/20	LD	13:00	16:00	03:00	Dry and overcast, wind direction still, temp 7°C, visibility good.
3	1	20/11/20	JM	12:30	15:30	03:00	A dry morning with the odd shower, wind direction west, wind F3-4, temp 12°C, visibility good.
3	2	20/11/20	LD	09:00	12:00	03:00	Overcast and breezy, drizzle for 20 mins, on and off between 11.00- 12.00, wind direction? wind F5, temp 10°C, visibility good to fair.
4	1	20/11/20	LD	12:30	15:30	03:00	Overcast, drizzling on and off throughout survey, wind direction? wind F3, temp 10°C, visibility good to fair when drizzling.
4	2	20/11/20	JM	09:00	12:00	03:00	A dry day with the odd shower, wind direction west, wind F3-4, temp 12°C, visibility good.
December							
1	1	09/12/20	JM	09:00	12:00	03:00	A very wet morning with heavy showers, wind direction south-southwest, wind F2-4, temp 4°C-7°C, visibility ok.
1	2	10/12/20	JM	13:45	16:45	03:00	A dry morning with showers in the afternoon, wind direction west, wind F 1-4, temp 9°C, visibility good.
2	1	09/12/20	JM	13:00	16:00	03:00	A wet day with frequent heavy showers, wind direction south-southwest, wind F2-4, temp 4°C-7°C, visibility ok.
2	2	10/12/20	JM	10:30	13:30	03:00	A dry morning with some sunny periods, wind direction west, wind F1-4, temp 9°C, visibility good.
3	1	11/12/20	JM	10:30	13:30	03:00	A dry sunny morning, wind direction west- southwest, wind F2, temp 6°C-9°C, visibility good.
3	2	14/12/20	JM	13:30	16:30	03:00	A dry sunny day, wind direction south-southwest, wind F2-4, temp 8°C-10°C, visibility good.
4	1	11/12/20	JM	13:30	16:30	03:00	A dry sunny morning with some light shower's midday and showers in the afternoon, wind shifted to north-northwest, wind F2-4, temp 6°C-9°C, visibility good.
4	2	14/12/20	JM	10:00	13:00	03:00	A dry sunny morning, wind direction south-southwest, wind F2-4, temp 8°C-10°C, visibility good.
January							
1	1	18/01/21	JM	09:00	12:00	03:00	A damp wet dull morning with some light showers, wind direction west, wind F1-3, temp 7°C, visibility good.
1	2	19/01/21	JM	12:30	15:30	03:00	A damp wet day, wind direction southwest-west, wind F2-4, temp 10°C, visibility ok.
2	1	18/01/21	JM	13:00	16:00	03:00	A bright afternoon with some sunshine and light showers, wind direction west, wind F1-3, temp 7°C, visibility good.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
2	2	19/01/21	JM	09:00	13:00	04:00	A wet, damp morning, wind direction southwest-west, wind F2-4, temp 10°C, visibility ok.
3	1	20/01/21	JM	09:00	12:00	03:00	A dry day with some sunshine, wind direction west-northwest, wind F1-3, temp 6°C-10°C, visibility good.
3	2	21/01/21	JM	13:30	16:30	03:00	A dry, sunny morning with some showers at midday and a dry afternoon, wind shifted in afternoon to west-northwest, wind F1-3, temp 6°C, visibility good.
4	1	20/01/21	JM	13:00	16:00	03:00	A dry afternoon with some sunshine, wind direction west-northwest, wind F1-3, temp 6°C-10°C, visibility good.
4	2	21/01/21	JM	10:00	13:00	03:00	A dry, sunny morning, wind direction north, wind F1, temp 6°C, visibility good.
February							
1	1	17/02/21	JK	09:00	12:00	03:00	Partly cloudy with sunny spells, wind direction south-southwest, wind F4, temp 6°C, visibility good.
1	2	18/02/21	JK	12:45	15:45	03:00	Partly cloudy with showers at times, wind direction south-southwest, wind F5, temp 7°C, visibility good.
2	1	17/02/21	JK	12:45	15:45	03:00	Partly cloudy with rain showers but sunny at times, wind direction south-southwest, wind F5, temp 9°C, visibility good.
2	2	18/02/21	JK	09:15	12:15	03:00	Partly cloudy with some showers, wind direction south-southwest, wind F4, temp 5°C, visibility good.
3	1	15/02/21	JM	09:00	12:00	03:00	A fine dry morning with some bright sunny spells, wind direction west-southwest, wind F1-4, temp 10°C-14°C, visibility good.
3	2	16/02/21	JM	13:30	16:30	03:00	An overcast day with some bright spells of sunshine, wind direction south-southwest, wind F3-5, temp 8°C-14°C, visibility good.
4	1	15/02/21	JM	13:00	16:00	03:00	A dry bright sunny day with light showers at 15.20, wind direction south-southwest, wind F1-5, temp 10°C-14°C.
4	2	16/02/21	JM	10:00	13:00	03:00	An overcast day with the odd sunny period, wind direction south-southwest, wind F3-5, temp 8°C-14°C, visibility good.
March							
1	1	19/03/21	JK	08:30	11:30	03:00	Cloudy, overcast and dull, wind direction north, wind F3, temp 9°C, visibility good.
1	2	22/03/21	JK	12:00	15:00	03:00	Cloudy and overcast, wind direction veering south-southeast, wind F3, temp 11°C, visibility good.
2	1	19/03/21	JK	12:00	15:00	03:00	Mostly cloudy, wind direction northeast, wind F3, temp 11°C, visibility good.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
2	2	22/03/21	JK	08:30	11:30	03:00	Overcast, cloudy and dull, wind direction southeast, wind F3, temp 9°C, visibility good.
3	1	19/03/21	JM	07:30	10:30	03:00	A dull morning with low cloud cover, wind direction north, wind F2-5, temp 9°C-11°C, visibility good.
3	2	22/03/21	JM	13:00	16:00	03:00	A dull dry afternoon with low cloud cover, wind direction southwest, wind f1-3, temp 8°C-13°C, visibility ok.
4	1	19/03/21	JM	11:00	14:00	03:00	A dull day with the odd sunny period in the afternoon, wind direction north, wind F2-5, temp 9°C-11°C, visibility good.
4	2	22/03/21	JM	09:30	12:30	03:00	A dry dull morning with the odd sunny spell, wind direction west-southwest, wind F1-2, temp 8°C-13°C, visibility ok.

Table 36. 2021 breeding season VP survey details

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
April							
1	1	26/04/21	JK	15:15	18:15	03:00	A clear sunny day with South-westerly winds F3. Temperature 17°C and visibility good.
1	2	29/04/21	JK	18:45	21:45	03:00	A mostly cloudy evening with some sunny spells and winds veering North-westerly F3. Temperature 9°C with good visibility.
2	1	26/04/21	JK	18:45	21:45	03:00	A clear sunny evening with South-westerly wind F4. Temperature 14°C and visibility good.
2	2	29/04/21	JK	15:20	18:20	03:00	A mostly cloudy day with some sunny spells and winds Northerly F3. Temperature 17°C with good visibility.
3	1	22/04/21	JK	15:00	18:00	03:00	A clear sunny day with South-easterly winds F4. Temperature 13°C and visibility good.
3	2	28/04/21	JK	18:45	21:45	03:00	A mostly cloudy day with some sunny spells and winds North-easterly F3. Temperature 12°C and visibility good.
4	1	22/04/21	JK	18:30	21:30	03:00	A clear sunny evening with South-easterly winds F4. Temperature 11°C and visibility good.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
4	2	28/04/21	JK	15:20	18:20	03:00	A mostly cloudy day with some sunny spells and winds North-easterly F3. Temperature 12°C and visibility good.
May							
1	1	21/05/21	JK	09:20	12:20	03:00	A cloudy day with some showers and West/North-westerly winds F6. Temperature 10°C with good visibility.
1	2	24/05/21	JK	05:45	08:45	03:00	An overcast day with North-westerly winds F3. Temperature 4°C and visibility good.
2	1	21/05/21	JK	05:50	08:50	03:00	An overcast morning with rain and West/North-westerly winds F6, gusting to F7. Temperature 9°C with moderate to good visibility.
2	2	24/05/21	JK	09:20	12:20	03:00	A cloudy day with sunny spells and scattered showers. Winds from the North-west F5. Temperature 9°C with good visibility.
3	1	25/05/21	JK	09:20	12:20	03:00	Rain in the morning turning heavy with winds veering South-west F3. Temperature 10°C with moderate to good visibility.
3	2	27/05/21	JK	05:45	08:45	03:00	A mostly cloudy morning with South-easterly winds F3. Temperature 6°C and good visibility.
4	1	25/05/21	JK	05:50	08:50	03:00	Mostly cloudy with showers, rain and winds from the west F3. Temperature 8°C with moderate to good visibility.
4	2	27/05/21	JK	09:15	12:15	03:00	A mostly cloudy morning with some showers and South-easterly winds F3. Temperature 10°C and good visibility.
June							
1	1	02/06/21	JK	16:00	19:00	03:00	A mostly cloudy evening with some showers and North-easterly winds F3. Temperature 16°C and visibility good.
1	2	09/06/21	JK	19:30	22:30	03:00	Partly cloudy with some good sunny spells and South-westerly winds F3. Temperature 18°C with good visibility.
2	1	02/06/21	JK	19:30	22:30	03:00	A mostly cloudy evening with some showers and North-easterly winds F3. Temperature 17°C and visibility good.
2	2	09/06/21	JK	16:00	19:00	03:00	Partly cloudy with some good sunny spells and South-westerly winds F3. Temperature 20°C with good visibility.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
3	1	15/06/21	JK	19:40	22:40	03:00	A cloudy evening with some sunny spells and South/South-westerly winds F4. Temperature 14°C and visibility good.
3	2	17/06/21	JK	16:15	19:15	03:00	A partly cloudy evening with some good sunny spells and North-westerly winds F4. Temperature 15°C with good visibility.
4	1	15/06/21	JK	16:15	19:15	03:00	A cloudy evening with some sunny spells and South/South-westerly winds F4. Temperature 20°C and visibility good.
4	2	17/06/21	JK	19:45	22:45	03:00	Mostly sunny with North-westerly winds F4. Temperature 15° and visibility good.
July							
1	1	12/07/21	JK	09:15	12:15	03:00	A cloudy morning with winds F3, veering North-east. Temperature 17°C with good visibility.
1	2	13/07/21	JK	05:45	08:45	03:00	Mostly cloudy in the morning with some mist and North-westerly winds F3. Temperature 14°C with good visibility.
2	1	12/07/21	JK	05:45	08:45	03:00	A cloudy, misty morning with some showers and North-westerly winds F3. Temperature 14°C with moderate to good visibility.
2	2	13/07/21	JK	09:15	12:15	03:00	Mostly cloudy with North-westerly winds F3. Temperature 17°C with good visibility.
3	1	22/07/21	JK	09:30	12:30	03:00	A sunny, warm morning with South-easterly winds F2. Temperature 25 - 26°C with good visibility.
3	2	28/07/21	JK	05:45	08:45	03:00	A cloudy morning with showers and South-westerly winds F3. Temperature 12°C with good visibility.
4	1	22/07/21	JK	05:45	08:45	03:00	A sunny, warm morning with South-easterly winds F2. Temperature 18 - 20°C with good visibility.
4	2	28/07/21	JK	09:15	12:15	03:00	A cloudy morning with showers and South-westerly winds F3. Temperature 16°C with good visibility.
August							
1	1	17/08/21	JK	14:15	17:15	03:00	A cloudy afternoon with West/North-westerly winds F3. Temperature 15 - 17°C with good visibility.
1	2	19/08/21	JK	17:30	20:30	03:00	Some sunshine and cloud in the evening with South-westerly winds F3. Temperature 19°C and visibility good.
2	1	17/08/21	JK	18:15	21:15	03:00	A cloudy evening with West/North-westerly winds F3. Temperature 17°C with good visibility.
2	2	19/08/21	JK	14:00	17:00	03:00	Some sunshine and cloud in the afternoon with South-westerly winds F3. Temperature 18°C and visibility good.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
3	1	23/08/21	JK	17:00	20:00	03:00	Partly cloudy in the evening with some sunny spells and South-easterly winds F3. Temperature 20°C with good visibility.
3	2	25/08/21	JK	13:15	16:15	03:00	A partly cloudy afternoon with some sunny spells and East/South-easterly winds F3. Temperature 21°C with good visibility.
4	1	23/08/21	JK	13:30	16:30	03:00	Partly cloudy in the afternoon with some sunny spells and South-easterly winds F3. Temperature 20°C with good visibility.
4	2	25/08/21	JK	16:45	19:45	03:00	A sunny evening with winds veering North-east F3. Temperature 22° and visibility good.
September							
1	1	15/09/21	JK	08:45	11:45	03:00	A mostly cloudy morning with some sunny spells and West/South-westerly winds F2. Temperature 16°C and good visibility.
1	2	20/09/21	JK	12:15	15:15	03:00	A mostly cloudy afternoon with winds F3 veering North-west. Temperature 17°C with good visibility.
2	1	15/09/21	JK	12:15	15:15	03:00	A partly cloudy afternoon with some sunny spells and West/South-westerly winds F2. Temperature 17°C and good visibility.
2	2	20/09/21	JK	08:40	11:40	03:00	An overcast morning with showers and South-westerly winds F2. Temperature 15°C and visibility good.
3	1	23/09/21	JK	08:30	11:30	03:00	Partly cloudy with some sunny spells and Westerly winds F3. Temperature 15°C and visibility good.
3	2	28/09/21	JK	12:10	15:10	03:00	A partly cloudy afternoon with some good sunny spells and South-westerly winds F3. Temperature 14°C and visibility good.
4	1	23/09/21	JK	12:00	15:00	03:00	Partly cloudy afternoon with some sunny spells and Westerly winds F3. Temperature 17°C and visibility good.
4	2	28/09/21	JK	08:40	11:40	03:00	A partly cloudy morning with some good sunny spells and South-westerly winds F3. Temperature 11°C and visibility good.

Table 37. 2021/22 non-breeding season VP survey details

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
October							
1	1	06/10/21	UW	10:00	13:00	03:00	Windy with heavy showers, cloud cover 7/8 oktas. Wind S F2-3, temp 13°C, visibility moderate.
1	2	06/10/21	UW	13:30	16:30	03:00	Overcast with several showers, cloud cover 7/8 – 8/8 oktas. Wind S-SW F1-2, temp 15-17°C, visibility moderate.
2	1	06/10/21	FMcK	10:00	13:00	03:00	Overcast with showers, cloud cover 8/8 oktas. Wind S F1-2, temp 12-13°C, visibility moderate.
2	2	06/10/21	FMcK	14:00	17:00	03:00	Overcast with some light shower, cloud cover 8/8 -7/8 oktas. Wind S F1-2, temp 15°C, visibility good.
3	1	12/10/21	MaK	08:30	11:30	03:00	Still and overcast getting brighter in last hour, cloud cover 8/8 oktas, 7/8 oktas in last hour. No wind, temp 10°C, visibility excellent.
3	2	12/10/21	DOB	12:00	15:00	03:00	Dry bright very calm with almost no wind, Cloud cover 8/8 oktas. Wind NE F0-1, 12°C, visibility good.
4	1	12/10/21	DOB	08:30	11:30	03:00	Dry overcast and very calm, cloud cover 8/8 oktas. Wind NE F0-1, temp 9°C, visibility good.
4	2	12/10/21	MaK	12:00	15:00	03:00	Bright and still day, cloud cover 7/8 oktas. No wind, temp 13°C, visibility excellent.
November							
1	1	03/11/21	UW	12:30	15:30	03:00	Dry with one very light shower, cloud cover 4/8 – 7/8 oktas. Wind W-SW F1-2, temp 11-12°C, visibility good.
1	2	25/11/21	UW	10:15	13:15	03:00	Sunny cold day, cloud cover 1/8 – 2/8 oktas until 11:30 then 4/8 – 6/8 oktas. Wind NW F0-2, temp 4°C, visibility excellent.
2	1	04/11/21	FMcK	09:00	12:00	03:00	Cloud cover 1/8, blue skies and sunshine, north wind f1, temp 7-8°C, visibility good.
2	2	04/11/21	FMcK	12:30	15:30	03:00	Cloud cover 4/8, sunny spells, dry, slight breeze, north wind f1, temp 8-9°C, visibility good.
3	1	17/11/21	DOB	08:50	11:50	03:00	Dry bright, fresh, and cool day, cloud cover 8/8 oktas. Wind SW F0-1, temp 6°C, visibility good.
3	2	17/11/21	DOB	12:20	15:20	03:00	Dull cool day, cloud cover 7/8 oktas. Wind SW F0-2, temp 12°C, visibility good.
4	1	10/11/21	MaK	14:30	17:30	03:00	Cloudy and still day with cloud cover of 7/8 oktas. No wind, temp 12°C, visibility excellent.
4	2	11/11/21	MaK	14:10	17:10	03:00	Overcast with frequent showers, cloud cover 8/8 oktas. Wind F4-5, temp 13°C, visibility poor-moderate.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
December							
1	1	18/12/21	UW	09:20	12:20	03:00	Very calm and overcast, slightly foggy, cloud cover 7/8 -8/8 oktas. Wind E-SE F0-1, temp 7-8°C, visibility moderate.
1	2	18/12/21	UW	12:50	15:50	03:00	Dry cold overcast day with some mist. Cloud cover 6/8 – 8/8 oktas, wind E-SE F0-1, temp 8°C, visibility moderate.
2	1	23/12/21	FMcK	08:40	11:40	03:00	Cloud cover 6/8 – 8/8, dry, mild, and overcast, south/southwest wind f1-2, temp 8-9°C, visibility good.
2	2	23/12/21	FMcK	12:10	15:10	03:00	Cloud cover 7/8, dry, mild, and overcast, south wind f1-2, temp 11°C, visibility good.
3	1	15/12/21	MaK	08:30	11:30	03:00	Bright and clear but some glare southeast of VP3, cloud cover 1/8 oktas. Wind S F2, temp 8°C, visibility good.
3	2	15/12/21	MaK	12:00	15:00	03:00	Clear with no glare, cloud cover 4/8 oktas. Wind S F2, gusting to F3, temp 12°C, visibility excellent.
4	1	09/12/21	DOB	09:00	12:00	03:00	Misty rain until last 20 minutes of survey, cloud cover 8/8 oktas till last 20 minutes then 5/8 oktas. Wind W F2-4, temp 7°C, visibility moderate.
4	2	09/12/21	DOB	12:30	15:30	03:00	Intermittent heavy showers and dry spells, cloud cover 8/8 oktas. Wind W F3-4, temp 7°C, visibility moderate to poor.
January							
1	1	06/01/22	UW	09:15	12:15	03:00	Overcast morning with several heavy showers, cloud cover 7/8 – 8/8 oktas. Wind SW F0-1, temp 5-7°C, visibility moderate and poor to the south due to glare and hazy mist.
1	2	06/01/22	UW	12:45	15:45	03:00	Overcast with intermittent sunshine and heavy showers, cloud cover 4/8 – 8/8 oktas. Wind W-SW F1-2, temp 7°C, visibility moderate to poor.
2	1	23/01/22	FMcK	08:55	11:55	03:00	Cloudy with sunny spells, cloud cover 6/8 – 8/8 oktas. Wind S F1, temp 6-7°C, visibility good.
2	2	23/01/22	FMcK	12:20	15:20	03:00	Cloudy dry day, cloud cover 8/8 oktas. Wind S F1, temp 7-8°C, visibility good.
3	1	05/01/22	DOB	08:45	11:45	03:00	Dry bright frosty morning, cloud cover 6/8 oktas. No wind, temp 0°C, visibility very good.
3	2	05/01/22	DOB	12:15	15:15	03:00	Bright sunny cold day, cloud cover 5/8 oktas. No wind, temp 2-5°C, visibility very good.
4	1	06/01/22	Mak	08:45	11:45	03:00	Cold and gusty day with occasional showers, cloud cover 7/8 oktas. Wind S F3, temp 8°C, visibility good.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
4	2	06/01/22	MaK	12:15	15:15	03:00	Bright and gusty day with °Ccasional showers, cloud cover 4/8 oktas. Wind SW F3-4, temp 8°C, visibility good to moderate.
February							
1	1	28/02/22	UW	10:15	13:15	03:00	Very overcast, damp with some low misty rain, cloud cover 8/8 oktas. No wind, temp 9°C, visibility poor to moderate.
1	2	28/02/22	UW	13:45	16:45	03:00	Very calm day with sunny spells, cloud cover 4/8 – 6/8 oktas. No wind, temp 8-10°C, visibility moderate.
2	1	21/02/22	FMcK	09:50	12:50	03:00	Dry with sunny spells, cloud cover 4/8 – 8/8 oktas. Wind NW F1-2, temp 8°C, visibility good.
2	2	25/02/22	FMcK	12:15	15:15	03:00	Dry with sunny spells, cloud cover 4/8 oktas. No wind, temp 10°C, visibility good.
3	1	10/02/22	MaK	08:00	11:00	03:00	Clear bright morning mostly but some heavy showers after 10am, cloud cover 7/8 oktas. Wind NW F4-6, temp 3°C, visibility moderate to good.
3	2	10/02/22	MaK	11:30	14:30	03:00	Sunny and bright day, cloud cover 3/8 oktas. Wind NW F5, temp 6°C, visibility good.
4	1	03/02/22	DOB	08:45	11:45	03:00	Bright sunny cold day with rain between 11:10-11:25, cloud cover 6/8 – 8/8 oktas. Wind SW F3-4, temp 9-11°C, visibility good.
4	2	03/02/22	DOB	12:15	15:15	03:00	Bright breezy windy day, cloud cover 6/8 oktas. Wind SW F3-4, temp 12°C, visibility good.
March							
1	1	02/03/22	NL	13:00	19:00	06:00	Cloud cover 5/8 and cloudy, no rain but some showers, temp 7°C, visibility good.
2	2	29/03/22	FMcK	10:35	13:35	03:00	Cloud cover 8/8-2/8, foggy start, cleared at 11.15, sunny spells, northeast wind f0-1, temp 12-14°C, visibility poor to good.
2	1	29/03/22	FMcK	14:50	17:50	03:00	Cloud cover 4/8, clear blue skies, sunny spells, northwest wind f1, no rain, temp 14°C, visibility good.
3	2	02/03/22	DOB	09:00	12:00	03:00	Dry cold cloudy day, cloud cover 8/8 oktas. Wind W F2-3, temp 6°C, visibility good.
3	1	02/03/22	DOB	12:30	15:30	03:00	Dull overcast day, cloud cover 8/8 oktas. Wind W F2-3, temp 9°C, visibility good.
4	2	18/03/22	MaK	07:30	10:30	03:00	Cloud cover 2/8, clear, bright, sunny, no rain, south wind 4, temp 9°C, visibility excellent.
4	1	18/03/22	MaK	11:00	14:00	03:00	Cloud cover 1/8, clear, gusty, bright, southeast wind f5, temp 11°C, visibility excellent.

Table 38. 2022 breeding season VP survey details

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
April							
1	2	20/04/22	NL	10:00	13:00	03:00	Overcast but dry. Cloud cover 7/8. F3 winds. Temp 14°C. Good visibility.
1	2	20/04/22	NL	13:30	16:30	03:00	Overcast but dry. Cloud cover 7/8. F3 winds. Temp 14°C. Good visibility.
2	1	20/04/22	CBH	13:00	16:00	03:00	Intermittent sunshine. Cloud cover 5/8-7/8. Overcast but bright, No rain, Southerly F2 winds. Temp. 13°C. Very good visibility.
2	2	20/04/22	CBH	16:00	19:00	03:00	Bright evening. Cloud cover 7/8. No rain. Southerly F2 winds. Temp 13°C. Very good visibility.
3	1	28/04/22	DF	12:00	15:00	03:00	Dry and sunny. 40% cloud cover. Northeast F1 winds. Temp 14°C. Good visibility.
3	2	27/04/22	DF	16:45	19:45	03:00	Dry and sunny. 70% cloud cover. Southeast F2 winds. Temp 14°C. Good visibility.
4	1	27/04/22	DF	13:30	16:30	03:00	Dry and sunny. 70% cloud cover. Southeast F2 winds. Temp 14°C. Good visibility.
4	2	28/04/22	DF	15:30	18:30	03:00	Dry and sunny. 40-50% cloud cover. South/Southeast F1 winds. Temp 14°C. Good visibility.
May							
1	1	27/05/22	NL	12:00	15:00	03:00	Sunny, slight breeze. Cloud cover 0/8. F2 winds. Temp 15°C. Very good visibility.
1	2	27/05/22	NL	15:30	18:30	03:00	Sunny, slight breeze. Cloud cover 0/8. F2 winds. Temp 15°C. Very good visibility.
2	1	24/05/22	JK	07:00	10:00	03:00	sunny spells with showers. Partly cloudy. West/ northwest f3 winds. Temp 9°C. Good visibility.
2	2	24/05/22	JK	10:30	13:30	03:00	sunny spells with showers. Partly cloudy. northwest f3 winds. Temp 15°C. Good visibility.
3	1	23/05/22	JK	06:30	09:30	03:00	partly cloudy with sunny spells. Westerly f3 winds. Temp 9°C. Good visibility.
3	2	24/05/22	JK	10:30	13:30	03:00	overcast with showers. Mostly cloudy. Misty. South westerly f4 winds. Temp 17°C. Good visibility.
4	1	23/05/22	JK	10:00	13:00	03:00	rain and showers. Mostly cloudy. North/ northwest F3 winds. Temp 12°C. Good visibility.
4	2	26/05/22	JK	07:00	10:00	03:00	misty, overcast and dull with showers. Mostly cloudy. Southwest f4 winds. Temp 12°C. Good visibility.
June							
1	1	16/06/22	NL	12:00	15:00	03:00	Bright sunny day with 5/8 cloud cover with south winds F3, Temp. 19°C and Very good visibility.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
1	2	16/06/22	NL	15:30	18:30	03:00	Bright sunny day 4/8 cloud cover, with south F2 winds, Temp 19°C, Very good visibility.
2	1	10/06/22	NL	12:00	15:00	03:00	Bright clear day with 1/8 cloud cover with SW winds F-2, Temp 21°C and Very good visibility.
2	2	10/06/22	NL	15:30	18:30	03:00	Bright clear day with 1/8 cloud cover with SW winds F-2, Temp 21°C and Very good visibility.
3	1	15/06/22	DF	12:00	15:00	03:00	Dry and sunny day with 60% cloud cover and SSW winds with F2 and Temp 19°C, Good visibility.
3	2	16/06/22	DF	15:30	18:30	03:00	Dry and sunny day with 80% cloud cover and south winds with F3-4 and temp 19°C and good visibility.
4	1	16/06/22	DF	12:00	15:00	03:00	Dry day, with 80% cloud cover, south winds F3-4, Temp 19°C and good visibility.
4	2	15/06/22	DF	15:30	18:30	03:00	Dry and sunny day with 60% cloud cover and SSW winds with F2 and Temp 19°C, Good visibility.
July							
1	1	27/07/22	DF	07:00	10:00	03:00	Dry day with 100% cloud cover, ESE winds with F1-2, Temp 12°C and good visibility.
1	2	27/07/22	DF	10:30	13:30	03:00	Dry day with 100 % cloud cover and ESE Winds with F1-2 Temp 14°C with good visibility.
2	1	21/07/22	DF	09:30	12:30	03:00	Dry day, with 100% cloud cover and North winds with F1-2, Temp 14°C and good visibility.
2	2	21/07/22	DF	06:00	09:00	03:00	Dry day with 100% cloud cover and North winds with F1-2 and Temp 12°C and good visibility.
3	1	20/07/22	UW	08:40	11:40	03:00	Breezy, misty rain, Cloud cover 5/8-7/8, with NNW winds, F1-2 Temp 16-17°C with moderate- excellent visibility.
3	2	20/07/22	UW	12:10	15:10	03:00	Breezy mild, with 6/8 -8/8 cloud cover and NW winds with F2, Temp 15- 16°C and Moderate visibility.
4	1	15/07/22	NL	09:00	12:00	03:00	Breezy day with 5/8 cloud cover and West winds with F2-4 Temp 18°C and good visibility.
4	2	15/07/22	NL	12:30	15:30	03:00	Rainy day with 5/8 cloud cover, west winds with F4 Temp-17°C and Moderate visibility.
August							
1	1	22/08/22	DF	13:30	16:30	03:00	Dry day with 100 % cloud cover, west winds with F2-3, Temp 21°C and good visibility.
1	2	22/08/22	DF	10:15	13:15	03:00	Dry day with 100 % cloud cover, west winds with F2-3, Temp 21°C and good visibility.
2	1	16/08/22	DF	15:00	18:00	03:00	Dry day with 90% cloud cover and north winds with F4 speed and 18°C Temp with good visibility.
2	2	16/08/22	DF	11:30	14:30	03:00	Dry day with 90% cloud cover and North winds with F4 speed and 18°C temp with good visibility.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
3	1	17/08/22	UW	09:00	12:00	03:00	Dry sunny day with 2/8-4/8 cloud cover and NNW winds with F1 speed and 14-16°C temp and good visibility.
3	2	17/08/22	UW	12:30	15:30	03:00	Dry sunny day with 4/8-2/8 cloud cover and NNW winds with F1 speed and 17-18°C temp and good visibility.
4	1	19/08/22	PC	08:30	11:30	03:00	Dull and windy. Cloud cover 3/8. South westerly f3-f4 winds. Temp 16°C. Good visibility.
4	2	19/08/22	PC	12:00	15:00	03:00	Sunny and windy. Cloud cover 2/8. South westerly f3-f4 winds. Temp 17°C. Good visibility.
September							
1	1	23/09/22	AC	09:00	12:00	03:00	Cloudy and showery day with 3/8-8/8 cloud cover. north westerly winds f3-f4. Temp 10-16°C. Mod - Good visibility.
1	2	23/09/22	AC	12:30	15:30	03:00	Cloudy and showery day with 3/8-8/8 cloud cover. north westerly winds f3-f4. Temp 10-16°C. Mod - Good visibility.
2	1	23/09/22	JH	09:00	12:00	03:00	Cloudy and showery day with 3/8-8/8 cloud cover. north westerly winds f3-f4. Temp 10-16°C. Mod - Good visibility.
2	2	23/09/22	JH	12:30	15:30	03:00	Cloudy and showery day with 3/8-8/8 cloud cover. north westerly winds f3-f4. Temp 10-16°C. Mod - Good visibility.
5	1	23/09/22	TT	09:00	12:00	03:00	Cloudy and showery day with 3/8-8/8 cloud cover. north westerly winds f3-f4. Temp 10-16°C. Mod - Good visibility.
5	2	23/09/22	TT	12:30	15:30	03:00	Cloudy and showery day with 3/8-8/8 cloud cover. north westerly winds f3-f4. Temp 10-16°C. Mod - Good visibility.
6	1	23/09/22	JNM	09:00	12:00	03:00	Cloudy and showery day with 3/8-8/8 cloud cover. north westerly winds f3-f4. Temp 10-16°C. Mod - Good visibility.
6	2	23/09/22	JNM	12:30	15:30	03:00	Cloudy and showery day with 3/8-8/8 cloud cover. north westerly winds f3-f4. Temp 10-16°C. Mod - Good visibility.
7	1	23/09/22	TR	09:00	12:00	03:00	Cloudy and showery day with 3/8-8/8 cloud cover. north westerly winds f3-f4. Temp 10-16°C. Mod - Good visibility.
7	2	23/09/22	TR	12:30	15:30	03:00	Cloudy and showery day with 3/8-8/8 cloud cover. north westerly winds f3-f4. Temp 10-16°C. Mod - Good visibility.

Table 39. 2022/23 non-breeding season VP survey details

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather					
							Visibility	Cloud (oktas)	Rain	Wind (Beaufort)	Wind direction	Temp. (°C)
October												
1	1	07/10/22	SN	09:00	12:00	03:00	Good	7	Heavy showers	3	W	11
1	2	07/10/22	SN	12:30	15:30	03:00	Good	7	Heavy showers	4	W	11
2	1	07/10/22	AC	09:00	12:00	03:00	Good	8	Heavy showers	4	W	11
2	2	07/10/22	AC	12:30	15:30	03:00	Good	7	Heavy showers	6	W	13
5	1	07/10/22	JH	09:00	12:00	03:00	Good	6	Heavy showers	5	SW	13
5	2	07/10/22	JH	12:30	15:30	03:00	Good	6	Heavy showers	5	SW	13
6	1	07/10/22	TT	09:00	12:00	03:00	Good	2	Heavy showers	4	SW	12
6	2	07/10/22	TT	12:30	15:30	03:00	Good	2	Heavy showers	4	SW	14
7	1	07/10/22	AD	09:00	12:00	03:00	Good	6	Heavy showers	3	SW	15
7	2	07/10/22	AD	12:30	15:30	03:00	Good	6	Heavy showers	5	SW	15
8	1	07/10/22	TR	09:00	12:00	03:00	Good	6	Heavy showers	3	NE	14
8	2	07/10/22	TR	12:30	15:30	03:00	Good	6	Heavy showers	3	NE	14
November												
1	1	04/11/22	TR	09:00	12:00	03:00	Good	8	Dry	2	SW	11
1	2	04/11/22	TR	12:30	15:30	03:00	Good	8	Dry	2	SW	11
2	1	04/11/22	TR	09:00	12:00	03:00	Good	8	Dry	2	SW	7
2	2	04/11/22	TR	12:30	15:30	03:00	Good	8	Dry	3	SW	7
5	1	04/11/22	AC	09:15	12:15	03:00	Good	8	Dry	2	SW	7
5	2	04/11/22	AC	12:45	15:45	03:00	Good	8	Dry	4	SW	11

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather					
							Visibility	Cloud (oktas)	Rain	Wind (Beaufort)	Wind direction	Temp. (°C)
6	1	04/11/22	JH	09:00	12:00	03:00	Good	8	Dry	3	SW	11
6	2	04/11/22	JH	12:30	15:30	03:00	Good	8	Dry	3	SW	11
7	1	04/11/22	JNM	09:00	12:00	03:00	Good	8	Dry	3	SW	7
7	2	04/11/22	JNM	12:30	15:30	03:00	Good	8	Dry	3	SW	10
8	1	04/11/22	AD	09:10	12:10	03:00	Good	7	Dry	3	SW	8
8	2	04/11/22	AD	12:40	15:40	03:00	Good	7	Dry	3	SW	8
December												
1	1	07/12/22	AD	07:33	10:33	03:00	Poor	8	Dry	1	N	1
1	2	07/12/22	AD	11:03	14:03	03:00	Moderate - good	1	Dry	1	N	1
2	1	07/12/22	TR	07:30	10:30	03:00	Poor	8	Dry	2	NW	1
2	2	07/12/22	TR	11:00	14:00	03:00	Moderate - good	8	Dry	2	NW	3
5	1	07/12/22	SN	07:30	10:30	03:00	Poor	8	Dry	2	N	-1
5	2	07/12/22	SN	11:00	14:00	03:00	Moderate - good	8	Dry	2	N	3
6	1	07/12/22	AC	07:30	10:30	03:00	Poor	8	Dry	2	NW	-1
6	2	07/12/22	AC	11:00	14:00	03:00	Moderate - good	1	Dry	2	NW	4
7	1	07/12/22	JH	07:30	10:30	03:00	Poor	8	Dry	2	N	-1
7	2	07/12/22	JH	11:00	14:00	03:00	Moderate - good	2	Dry	2	N	2
8	1	07/12/22	JD	07:30	10:30	03:00	Poor	8	Dry	2	N	0
8	2	07/12/22	JD	11:00	14:00	03:00	Moderate - good	2	Dry	2	N	2
January												
1	1	17/01/23	JD	10:50	13:50	03:00	Good	3	Dry	1	N	-2

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather					
							Visibility	Cloud (oktas)	Rain	Wind (Beaufort)	Wind direction	Temp. (°C)
1	2	17/01/23	JD	14:20	17:20	03:00	Good	3	Dry	1	N	6
2	1	17/01/23	AD	11:01	14:01	03:00	Good	1	Dry	1	NW	2
2	2	17/01/23	AD	14:31	17:31	03:00	Good	8	Dry	2	NW	2
5	1	17/01/23	TR	11:00	14:00	03:00	Good	1	Dry	2	NW	0
5	2	17/01/23	TR	14:30	17:30	03:00	Good	1	Dry	2	NW	3
6	1	17/01/23	SN	11:00	14:00	03:00	Good	1	Dry	2	NW	-1
6	2	17/01/23	SN	14:30	17:30	03:00	Good	1	Dry	2	NW	-1
7	1	17/01/23	AC	11:00	14:00	03:00	Good	1	Dry	1	NW	-2
7	2	17/01/23	AC	14:30	17:30	03:00	Good	8	Dry	2	NW	3
8	1	17/01/23	JH	11:00	14:00	03:00	Good	1	Dry	2	N	2
8	2	17/01/23	JH	14:30	17:30	03:00	Good	8	Dry	3	N	1
February												
1	1	13/02/23	JH	07:30	10:30	03:00	Good	8	Dry	3	S	7
1	2	13/02/23	JH	11:00	14:00	03:00	Good	6	Dry	4	S	10
2	1	13/02/23	JD	07:34	10:34	03:00	Good	7	Dry	2	SE	10
2	2	13/02/23	JD	11:04	14:04	03:00	Good	6	Dry	3	SE	10
5	1	13/02/23	AD	07:38	10:38	03:00	Good	6	Dry	3	SE	7
5	2	13/02/23	AD	11:08	14:08	03:00	Good	6	Dry	4	SE	7
6	1	13/02/23	TR	07:30	10:30	03:00	Good	2	Dry	3	SE	8
6	2	13/02/23	TR	11:00	14:00	03:00	Good	4	Dry	3	SE	11
7	1	13/02/23	SN	07:30	10:30	03:00	Good	7	Dry	3	SE	6

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather					
							Visibility	Cloud (oktas)	Rain	Wind (Beaufort)	Wind direction	Temp. (°C)
7	2	13/02/23	SN	11:00	14:00	03:00	Good	7	Dry	4	SE	6
8	1	13/02/23	AC	08:00	11:00	03:00	Good	7	Dry	3	SE	7
8	2	13/02/23	AC	11:30	14:30	03:00	Good	7	Dry	5	SE	11
March												
1	1	13/03/23	AC	12:00	15:00	03:00	Good	8	Light showers	3	NW	10
1	2	13/03/23	AC	15:30	18:30	03:00	Good	8	Heavy showers	4	SW	6
2	1	13/03/23	JH	12:00	15:00	03:00	Good	8	Light showers	3	NW	10
2	2	13/03/23	JH	15:30	18:30	03:00	Good	8	Heavy showers	4	SW	6
5	1	13/03/23	JD	12:00	15:00	03:00	Good	8	Light showers	3	NW	10
5	2	13/03/23	JD	15:30	18:30	03:00	Good	8	Heavy showers	4	SW	6
6	1	13/03/23	AD	12:00	15:00	03:00	Good	8	Light showers	3	NW	10
6	2	13/03/23	AD	15:30	18:30	03:00	Good	8	Heavy showers	4	SW	6
7	1	13/03/23	TR	12:00	15:00	03:00	Good	8	Light showers	3	NW	10
7	2	13/03/23	TR	15:30	18:30	03:00	Good	8	Heavy showers	4	SW	6
8	1	13/03/23	SN	12:00	15:00	03:00	Good	8	Light showers	3	NW	10
8	2	13/03/23	SN	15:30	18:30	03:00	Good	8	Heavy showers	4	SW	6

Table 40. 2023 breeding season VP survey details

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
April							
1	1	13/04/23	TT	14:05	17:05	03:00	A bright day with North/northwest winds F3 decreasing to F1 with few light showers. Temperature 11°C - 6°C, Good visibility and 6/8 cloud cover.
1	2	13/04/23	TT	17:35	20:35	03:00	A bright day with North/northwest winds F3 decreasing to F1 with few light showers. Temperature 11°C - 6°C, Good visibility and 6/8 cloud cover.
2	1	13/04/23	AG	14:00	17:00	03:00	A bright day with NNW winds F3-5 with few light showers. Temperature 11°C-0.7 °C, good visibility and cloudy 7/8.
2	2	13/04/23	AG	17:30	20:30	03:00	A bright day with NNW winds F3-5 with few light showers. Temperature 11°C-0.7 °C, good visibility and cloudy 7/8.
5	1	13/04/23	SN	14:00	17:00	03:00	A bright day with Westerly winds F3 to F4, mostly dry. Temperature 10°C, good visibility and cloudy 6/8.
5	2	13/04/23	SN	17:30	20:30	03:00	A bright day with Westerly winds F3 to F4, mostly dry. Temperature 10°C, good visibility and cloudy 6/9.
6	1	13/04/23	JH	14:00	17:00	03:00	Light West/North-west winds F3 with some light showers. Temperature 10°C to 8°C and good visibility. cloudy 6/8.
6	2	13/04/23	JH	17:30	20:30	03:00	Light West/North-west winds F3 with some light showers. Temperature 10°C to 8°C and good visibility. cloudy 6/9.
7	1	13/04/23	JD	14:00	17:00	03:00	Sunny with Showers, Westerly winds F3. Mainly dry rain infrequent. Temperature 13 8°C with good visibility, partially cloudy 5/8.
7	2	13/04/23	JD	17:30	20:30	03:00	Sunny with Showers, Westerly winds F3. Mainly dry rain infrequent. Temperature 13 8°C with good visibility, partially cloudy 5/9.
8	1	13/04/23	AD	13:38	16:38	03:00	A dry bright day with North/northwest wind F4. Temperature 10°C and excellent visibility, cloudy 6/8.
8	2	13/04/23	AD	17:08	20:08	03:00	A dry bright day with North/northwest wind F4. Temperature 10°C and excellent visibility, cloudy 6/9.
May							
1	1	09/05/23	AD	06:30	09:30	03:00	A bright day with South Westerly winds F1-2 with 1 shower. Temperature 13°C, visibility good, only 1km for 1st hour and then visibility improved. Cloudy 6/8.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
1	2	09/05/23	AD	10:00	13:00	03:00	A bright day with South Westerly winds F1-2 with 1 shower. Temperature 13°C, visibility excellent. Cloudy 6/8.
2	1	09/05/23	PC	06:30	09:30	03:00	Dry misty start until 7:20 when mist cleared, South Westerly winds F1-2. Temperature 11°C, visibility good and cloudy 6/8.
2	2	09/05/23	PC	10:00	13:00	03:00	Dry day, South Westerly winds F1-2, a heavy shower between 11:10 and 11:18. Temperature 11°C, visibility good and cloudy 6/9.
5	1	09/05/23	AG	06:30	09:30	03:00	South westerly winds F2-3. Temperature 08°C - 12°C, Good visibility, partially cloudy 3/8.
5	2	09/05/23	AG	10:00	13:00	03:00	W-S-W winds F3-4. Temperature 08°C - 12°C, Good visibility, partially cloudy 3/9.
6	1	09/05/23	SN	06:30	09:30	03:00	Foggy to start turning sunny. Wind F2 South Westerly and mostly dry. Temperature 8°C, good visibility, partially cloudy 4/8.
6	2	09/05/23	SN	10:00	13:00	03:00	Foggy to start turning sunny. Wind F2 South Westerly and mostly dry. Temperature 8°C, good visibility, partially cloudy 4/8.
7	1	09/05/23	JH	06:30	09:30	03:00	Light South-west wind F2-3. Heavy shower occurred. Temperature 8°C - 10°C, good visibility and cloud cover 4/8 to 7/8.
7	2	09/05/23	JH	10:00	13:00	03:00	Light South-west wind F2-3. Heavy shower occurred. Temperature 8°C - 10°C, good visibility and cloud cover 4/8 to 7/8.
8	1	09/05/23	JD	06:30	09:30	03:00	Sunny spells and dry, South-westerly winds F1 and low mist close to ground to the North. Temperature 8°C - 12°C, good visibility, cloud cover 6/8.
8	2	09/05/23	JD	10:00	13:00	03:00	Sunny spells late morning, westerly winds F2-3 and heavy hail and rain showers. Temperature 8°C - 12°C, good visibility, cloud cover 8/8.
June							
1	1	13/06/23	JD	07:35	11:05	03:00	Overcast, Dry and Warm with Northerly Winds F1, Misty to start visibility moderate improving to good. Temperature 16°C and cloud cover 8/8.
1	2	13/06/23	JD	10:35	14:05	03:00	Overcast, Dry and Warm with Northerly Winds F1, Misty to start visibility moderate improving to good. Temperature 20°C and cloud cover 8/8.
2	1	13/06/23	AD	07:29	10:29	03:00	Bright and dry, North-westerly winds F1-2. Temperature 17°C, Excellent visibility and Cloud Cover 8/8.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
2	2	13/06/23	AD	10:59	13:59	03:00	Bright and dry, North-westerly winds F1-2. Temperature 23°C, Excellent visibility and Cloud Cover 4/8.
5	1	13/06/23	PC	07:05	10:05	03:00	Dry and overcast. Northeast winds F1. Temperature 16°C, good visibility, cloud cover 8/8.
5	2	13/06/23	PC	10:35	13:35	03:00	Dry and overcast. Northeast winds F1. Temperature 16°C, good visibility, cloud cover 8/8.
6	1	13/06/23	TD	07:20	10:20	03:00	Overcast, Easterly Winds F2. Temperature 16°C, good visibility, cloud cover 4/8.
6	2	13/06/23	TD	10:50	13:50	03:00	Overcast, Easterly Winds F2. Temperature 23°C, good visibility, cloud cover 6/8.
7	1	13/06/23	SD	07:00	10:00	03:00	Dry and overcast with some sun. No wind. Temperature 12°C, poor- moderate visibility, cloud cover 8/8.
7	2	13/06/23	SD	10:30	13:30	03:00	Dry and overcast with some sun. No wind. Temperature 12°C, poor- moderate visibility, cloud cover 8/8.
8	1	13/06/23	JH	07:00	10:00	03:00	Light Easterly breeze F2. Temperature 16°C, moderate-good visibility, Cloud Cover 8/8.
8	2	13/06/23	JH	10:30	13:30	03:00	Light Easterly breeze F2. Temperature 21°C, moderate-good visibility, Cloud Cover 6/8.
July							
1	1	13/07/23	JH	06:45	09:45	03:00	Light rain and light southwest wind F2-3. Temperature 10°C, good visibility and cloud cover 8/8.
1	2	13/07/23	JH	10:15	13:15	03:00	Light rain and light southwest wind F2-3. Temperature 16°C, good visibility and cloud cover 8/8.
2	1	13/07/23	JD	07:20	10:20	03:00	Overcast, Southwest wind F1. Temperature 13°C, good visibility and cloud cover 6/8.
2	2	13/07/23	JD	10:50	13:50	03:00	Overcast, Southwest wind F1. Temperature 13°C, good visibility and cloud cover 6/8.
5	1	13/07/23	AD	07:02	10:02	03:00	Bright and clear with occasional drizzle. Southwest winds F1-4. temperature 17°C, good visibility and cloud cover 7/8.
5	2	13/07/23	AD	11:02	14:02	03:00	Bright and clear with occasional drizzle. Southwest winds F1-4. temperature 17°C, good visibility and cloud cover 7/8.
6	1	13/07/23	PC	06:40	09:40	03:00	Mostly dry and dull. Southern Winds F1-2. Temperature 14°C , good visibility and cloud cover 7/8.
6	2	13/07/23	PC	10:10	13:10	03:00	Mostly dry and dull. Southern Winds F1-2. Temperature 14°C , good visibility and cloud cover 7/8.
7	1	13/07/23	TR	07:15	10:15	03:00	Partially overcast, Southwest winds F3. Temperature 17°C , good visibility and cloud cover 4/8.
7	2	13/07/23	TR	10:45	13:45	03:00	Partially overcast, light drizzle, Southwest winds F3. Temperature 17°C , good visibility and cloud cover 4/8.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
8	1	13/07/23	SD	06:30	09:30	03:00	Overcast, mixed showers 10%, strong southerly breeze. Temperature 10°C , moderate visibility and Cloud Cover 8/8.
8	2	13/07/23	SD	10:20	13:20	03:00	Overcast, mixed showers 10%, strong southerly breeze. Temperature 10°C , moderate visibility and Cloud Cover 8/8.
August							
1	1	10/08/23	SD	06:50	09:50	03:00	Cloud height 150m, Southerly winds 5bft. Temperature 16°C , moderate visibility, cloud cover 8/8.
1	2	10/08/23	SD	10:20	13:20	03:00	Cloud height 150m, Southerly winds 5bft. Temperature 16°C, moderate visibility, cloud cover 8/8.
2	1	10/08/23	JH	06:45	09:45	03:00	South easterly winds F3-4 and light drizzle. Temperature 16°C, visibility good, Cloud cover 8/8.
2	2	10/08/23	JH	10:15	13:15	03:00	South easterly winds F3-4 and light drizzle. Temperature 18°C, visibility good, Cloud cover 8/8.
5	1	10/08/23	JD	07:30	10:30	03:00	Overcast and dry. South winds F3-4. Temperature 16°C, good visibility and cloud cover 8/8.
5	2	10/08/23	JD	11:00	14:00	03:00	Overcast and dry. South winds F3-4. Temperature 16°C, good visibility and cloud cover 8/8.
6	1	10/08/23	AD	07:36	10:36	03:00	Overcast and dry. South-east Winds F1-3. Temperature 16°C, Excellent visibility and cloud cover 8/8.
6	2	10/08/23	AD	11:06	14:06	03:00	Overcast and dry. South-east Winds F1-3. Temperature 16°C, Excellent visibility and cloud cover 8/8.
7	1	10/08/23	PC	06:20	09:20	03:00	Overcast and dry. South-east Winds F3-4. Temperature 17°C, Good visibility and cloud cover 8/8.
7	2	10/08/23	PC	09:50	12:50	03:00	Overcast and dry. South-east Winds F3-4. Temperature 17°C, Good visibility and cloud cover 8/8.
8	1	10/08/23	TR	07:10	10:10	03:00	Partially cloudy, light shower later on. South-east winds F3-4. Temperature 16°C, Good visibility, cloud cover 4/8.
8	2	10/08/23		10:40	13:40	03:00	Partially cloudy, light shower later on. South-east winds F3-4. Temperature 18°C, Good visibility, cloud cover 4/8.
September							
1	1	14/09/23	TR	09:30	12:30	03:00	Partially Cloudy, rain in last hour. No comments on wind direction or speed. Temperature 15°C, good visibility and cloud cover 3/8.
1	2	14/09/23	TR	13:00	16:00	03:00	Partially Cloudy, rain in last hour. No comments on wind direction or speed. Temperature 15°C, good visibility and cloud cover 3/8.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
2	1	14/09/23	SD	06:52	09:52	03:00	Partially Cloudy, South winds, 3bft, no rain. Temperature 12°C, good visibility and cloud cover 3-5/8.
2	2	14/09/23	SD	10:22	13:22	03:00	Partially Cloudy, South winds, 3bft, no rain. Temperature 12°C, good visibility and cloud cover 3-5/9.
5	1	14/09/23	AD	07:35	10:35	03:00	Overcast, bright and dry. Westerly winds F1-2. Temperature 15°C, visibility excellent, cloud cover 7/8.
5	2	14/09/23	AD	11:05	14:05	03:00	Overcast, bright and dry. Westerly winds F1-2. Temperature 15°C, visibility excellent, cloud cover 7/8.
6	1	14/09/23	JD	07:25	10:25	03:00	Partially cloudy, dry with patches of fog along River. Wind calm. Temperature 9°C, visibility good and cloud cover 5/8.
6	2	14/09/23	JD	10:55	13:55	03:00	Partially cloudy, dry with patches of fog along River. Wind calm. Temperature 15°C, visibility moderate and cloud cover 5/8.
7	1	14/09/23	JH	06:45	09:45	03:00	Overcast, Light westerly breeze F2, no rain. Temperature 11°C, visibility good and cloud cover 8/8.
7	2	14/09/23	JH	10:15	13:15	03:00	Overcast, Light westerly breeze F2, no rain. Temperature 15°C, visibility good and cloud cover 8/8.
8	1	14/09/23	PC	06:40	09:40	03:00	Overcast, dry with some fog. North Westerly winds F1. Temperature 10°C, visibility good and cloud cover 7/8.
8	2	14/09/23	PC	10:10	13:10	03:00	Overcast, dry with some fog. North Westerly winds F1. Temperature 10°C, visibility good and cloud cover 7/8.

Table 41. 2023/24 non-breeding season VP survey details

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
October							
1	1	10/10/23	D.C	07:30	10:30	03:00	A dry, bright day with southwest winds F3 increasing to F4. Temperature 16°C, good visibility and 7/8 cloud cover.
1	2	10/10/23	D.C	11:00	14:00	03:00	A dry, bright day with southwest winds F3 increasing to F4. Temperature 16°C, good visibility and 7/8 cloud cover.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
2	1	11/10/23	SN	07:30	10:30	03:00	Constant rain with southwest winds F1 increasing to F2. Temperature 15°C, fair visibility and 8/8 cloud cover.
2	2	11/10/23	SN	11:00	14:00	03:00	Constant rain with southwest winds F1 increasing to F2. Temperature 15°C, fair visibility and 8/8 cloud cover.
5	1	11/10/23	SD	07:20	10:20	03:00	Heavy rain with southern winds F4. Temperature 15°C, poor visibility and 8/8 cloud cover.
5	2	11/10/23	SD	10:50	13:50	03:00	Heavy rain with southern winds F4. Temperature 15°C, poor visibility and 8/8 cloud cover.
6	1	10/10/23	SD	07:10	10:10	03:00	A dry day with southern winds F2. Temperature 14°C, good visibility and 8/8 cloud cover.
6	2	10/10/23	SD	10:40	13:40	03:00	A dry day with southern winds F2. Temperature 14°C, good visibility and 8/8 cloud cover.
7	1	11/10/23	T.R	07:05	10:05	03:00	Heavy rain with northern winds F1 increasing to F2. Temperature 14°C, poor increasing to moderate visibility and 8/8 cloud cover.
7	2	11/10/23	T.R	10:35	13:35	03:00	Heavy rain with northern winds F1 increasing to F2. Temperature 14°C, poor increasing to moderate visibility and 8/8 cloud cover.
8	1	10/10/23	J.H	07:15	10:15	03:00	A dry day with southwest winds F3. Temperature 13°C-18°C, good visibility and 8/8 reducing to 6/8 cloud cover.
8	2	10/10/23	J.H	10:45	13:45	03:00	A dry day with southwest winds F3. Temperature 13°C-18°C, good visibility and 8/8 reducing to 6/8 cloud cover.
November							
1	1	14/11/23	J.H	10:15	13:15	03:00	Heavy rain with westward wind F3 increasing to F4. Temperature 10°C-11°C, good visibility and 5/8 increasing to 8/8 cloud cover.
1	2	14/11/23	J.H	14:30	17:30	03:00	Heavy rain with westward wings F3 increasing to F4. Temperature 10°C-11°C, good visibility and 5/8 increasing to 8/8 cloud cover.
2	1	14/11/23	D.C	11:00	14:00	03:00	Mostly dry with northwest wind F3 increasing to F4. Temperature 10°C, good visibility and 5/8 cloud cover.
2	2	14/11/23	D.C	14:30	17:30	03:00	Mostly dry with northwest wind F3 increasing to F4. Temperature 10°C, good visibility and 5/8 cloud cover.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
5	1	15/11/23	S.N	10:30	13:30	03:00	Dry, bright day with southwest wind F2 increasing to F3. Temperature 7°C, good visibility and 2/8 cloud cover.
5	2	15/11/23	S.N	13:30	16:30	03:00	Dry, bright day with southwest wind F2 increasing to F3. Temperature 7°C, good visibility and 2/8 cloud cover.
6	1	15/11/23	S.D	11:00	14:00	03:00	Dry day with southern winds F2. Temperature 10°C, good visibility and 5/8 cloud cover.
6	2	15/11/23	S.D	14:30	17:30	03:00	Dry day with southern winds F2. Temperature 10°C, good visibility and 5/8 cloud cover.
7	1	14/11/23	S.D	11:00	14:00	03:00	Dry day with western winds F5. Temperature 9°C, moderate visibility and 8/8 cloud cover.
7	2	14/11/23	S.D	14:30	17:30	03:00	Dry day with western winds F5. Temperature 9°C, moderate visibility and 8/8 cloud cover.
8	1	15/11/23	A.D	11:00	14:00	03:00	Dry, bright day with southwest winds F1 increasing to F2. Temperature 12°C, excellent visibility and 2/8 cloud cover.
8	2	15/11/23	A.D	14:30	17:30	03:00	Dry, bright day with southwest winds F1 increasing to F2. Temperature 12°C, excellent visibility and 2/8 cloud cover.
December							
1	1	13/12/23	A.D	07:58	10:58	03:00	A dry bright day with northwest winds F1 increasing to F2. Temperature 8°C, excellent visibility and 4/8 cloud cover.
1	2	13/12/23	A.D	11:28	14:28	03:00	A dry bright day with northwest winds F1 increasing to F2 and dry. Temperature 8°C, excellent visibility and 4/8 cloud cover.
2	1	12/12/23	J.H	08:00	11:00	03:00	Heavy rain with west to southwest winds variable F2-3. Temperature 5°C-8°C, moderate to good visibility and 5/8 increasing to 8/8 cloud cover.
2	2	12/12/23	J.H	11:30	14:30	03:00	Heavy rain with west to southwest winds variable F2-3. Temperature 5°C-8°C, moderate to good visibility and 5/8 increasing to 8/8 cloud cover.
5	1	12/12/23	D.C	08:00	11:00	03:00	Mostly dry with northwest wind F1. Temperature 5°C, good visibility with 6/8 cloud cover.
5	2	12/12/23	D.C	11:30	14:30	03:00	Mostly dry with northwest wind F1. Temperature 5°C, good visibility with 6/8 cloud cover.
6	1	13/12/23	J.H	08:00	11:00	03:00	Dry with north to northwest winds F2 increasing to F3. Temperature 6°C-8°C, good visibility with 6/8 cloud cover.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
6	2	13/12/23	J.H	11:30	14:30	03:00	Dry with north to northwest winds F2 increasing to F3. Temperature 6°C-8°C, good visibility with 6/8 cloud cover.
7	1	13/12/23	S.D	08:00	11:00	03:00	Dry with northwest wind F4. Temperature 6°C, good visibility with 0/8 to 3/8 cloud cover.
7	2	13/12/23	S.D	11:30	14:30	03:00	Dry with northwest wind F4. Temperature 6°C, good visibility with 0/8 to 3/8 cloud cover.
8	1	12/12/23	S.D	08:00	11:00	03:00	Mostly dry with southern winds F2. Temperature 5°C, moderate increasing to good visibility at 9:00am, with 3/8-5/8 cloud cover.
8	2	12/12/23	S.D	11:30	14:30	03:00	Mostly dry with southern winds F2. Temperature 5°C, moderate increasing to good visibility at 9:00am, with 3/8-5/8 cloud cover.
January							
1	1	11/01/24	A.D	10:54	13:54	03:00	Dry, bright with northeastern winds F1 increasing to F3. Temperature 7°C, excellent visibility with 4/8 cloud cover.
1	2	11/01/24	A.D	14:24	17:24	03:00	Dry, bright with northeastern winds F1 increasing to F3. Temperature 7°C, excellent visibility with 4/8 cloud cover.
2	1	10/01/24	J.H	11:00	14:00	03:00	dry with northeastern winds F3. Temperature -1°C, good visibility and 1/8 increasing to 3/8 cloud cover.
2	2	10/01/24	J.H	14:30	17:30	03:00	dry with northeastern winds F3. Temperature -1°C, good visibility and 1/8 increasing to 3/8 cloud cover.
5	1	10/01/24	D.C	11:00	14:00	03:00	Dry with northeastern winds F1-2. Temperature -1°C, good visibility and 1/8 increasing to 3/8 cloud cover.
5	2	10/01/24	D.C	14:30	17:30	03:00	Dry with northeastern winds F1-2. Temperature -1°C, good visibility and 1/8 increasing to 3/8 cloud cover.
6	1	11/01/24	J.H	11:00	14:00	03:00	Dry with northeast winds F2. Temperature 1°C, good visibility and 8/8 decreasing to 3/8 cloud cover.
6	2	11/01/24	J.H	14:30	17:30	03:00	Dry with northeast winds F2. Temperature 1°C, good visibility and 8/8 decreasing to 3/8 cloud cover.
7	1	11/01/24	S.D	11:00	14:00	03:00	Dry with northern winds F2. Temperature 3°C, moderate visibility and 8/8 cloud cover.
7	2	11/01/24	SD	14:30	17:30	03:00	Dry with northern winds F2. Temperature 3°C, moderate visibility and 8/8 cloud cover.
8	1	10/01/24	SD	11:00	14:00	03:00	Dry with northern winds F3. Temperature 0°C, good visibility except from the south with heavy glare and 0/8 increasing to 3/8 cloud cover.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
8	2	10/01/24	SD	14:30	17:30	03:00	Dry with northern winds F3. Temperature 0°C, good visibility except from the south with heavy glare and 0/8 increasing to 3/8 cloud cover.
February							
1	1	19/02/24	JH	07:30	10:30	03:00	Dry with westerly wind F2 increasing to F3. Temperature 10°C increasing to 12°C, moderate increasing to good visibility and 7/8 decreasing to 5/8 cloud cover.
1	2	19/02/24	JH	11:00	14:00	03:00	Dry with westerly wind F2 increasing to F3. Temperature 10°C increasing to 12°C, moderate increasing to good visibility and 7/8 decreasing to 5/8 cloud cover.
2	1	15/02/24	DC	07:30	10:30	03:00	Dry with southwest winds F1 increasing to F2. Temperature 11°C, good visibility and 8/8 cloud cover.
2	2	15/02/24	DC	11:00	14:00	03:00	Dry with southwest winds F1 increasing to F2. Temperature 11°C, good visibility and 8/8 cloud cover.
5	1	15/02/24	SD	07:30	10:30	03:00	Dry with westerly wind F5. Temperature 10°C, good visibility and 0/8 increasing to 3/8 cloud cover.
5	2	15/02/24	SD	11:00	14:00	03:00	Dry with westerly wind F5. Temperature 10°C, good visibility and 0/8 increasing to 3/8 cloud cover.
6	1	19/02/24	SD	07:30	10:30	03:00	Dry with westerly wind F5. Temperature 7°C, good visibility and 8/8 cloud cover.
6	2	19/02/24	SD	11:00	14:00	03:00	Dry with westerly wind F5. Temperature 7°C, good visibility and 8/8 cloud cover.
7	1	19/02/24	AD	07:30	10:30	03:00	Dry and bright with southwest winds F2-3 Variable. Temperature 10°C, excellent visibility and 3/8 cloud cover.
7	2	19/02/24	AD	11:00	14:00	03:00	Dry and bright with southwest winds F2-3 Variable. Temperature 10°C, excellent visibility and 3/8 cloud cover.
8	1	15/02/24	JH	07:30	10:30	03:00	Light rain with southwest winds F2-3 Variable. Temperature 10°C, good visibility with 8/8 decreasing to 6/8 cloud cover.
8	2	15/02/24	JH	11:00	14:00	03:00	Light rain with southwest winds F2-3 Variable. Temperature 10°C, good visibility with 8/8 decreasing to 6/8 cloud cover.
March							
1	1	19/03/24	AD	11:44	14:44	03:00	Intermittent rain with southwest winds F2. Temperature 12°C, excellent visibility with 6/8 cloud cover.
1	2	19/03/24	AD	15:14	18:24	03:00	Intermittent rain with southwest winds F2. Temperature 12°C, excellent visibility with 6/8 cloud cover.
2	1	14/03/24	JH	12:00	15:00	03:00	Light rain with southwest winds F2-5 variable. Temperature 11°C, good visibility with 8/8 cloud cover.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
2	2	14/03/24	JH	15:30	18:30	03:00	Light rain with southwest winds F2-5 variable. Temperature 11°C, good visibility with 8/8 cloud cover.
5	1	14/03/24	RC	12:00	15:00	03:00	Light rain with southwest winds F4-5 variable. Temperature 12°C, good visibility with 8/8 cloud cover.
5	2	14/03/24	RC	15:30	18:30	03:00	Light rain with southwest winds F4-5 variable. Temperature 12°C, good visibility with 8/8 cloud cover.
6	1	19/03/24	JH	12:00	15:00	03:00	Light rain with intermittent heavy rain and westerly wind F2-3 variable. Temperature 11°C, good visibility with 8/8 cloud cover.
6	2	19/03/24	JH	15:30	18:30	03:00	light rain with intermittent heavy rain and westerly wind F2-3 variable. Temperature 11°C, good visibility with 8/8 cloud cover.
7	1	18/03/24	SD	12:00	15:00	03:00	Light rain with southern wind F5. Temperature 10°C, moderate visibility with 8/8 cloud cover.
7	2	18/03/24	SD	15:30	18:30	03:00	Light rain with southern wind F5. Temperature 10°C, moderate visibility with 8/8 cloud cover.
8	1	14/03/24	SD	12:00	15:00	03:00	Rain with southern wind F5. Temperature 12°C, good visibility with 8/8 cloud cover.
8	2	14/03/24	SD	15:30	18:30	03:00	Rain with southern wind F5. Temperature 12°C, good visibility with 8/8 cloud cover.

Table 42. 2024 breeding season VP survey details

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
April							
1	1	11/04/24	SD	07:00	10:00	03:00	A dry, overcast day with a light southerly wind F3. Temperature 8°C with moderate visibility.
1	2	11/04/24	SD	10:30	13:30	03:00	A dry, overcast day with a light southerly wind F3. Temperature 8°C with moderate visibility.
2	1	08/04/24	RC	07:00	10:00	03:00	A cloudy day with consistent rain after 9am and a light northerly wind F1-2. Good visibility with temperatures of 5°C.
2	2	08/04/24	RC	10:30	13:30	03:00	A cloudy day with consistent rain after 9am and a light northerly wind F1-2. Good visibility with temperatures of 5°C.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
5	1	05/04/24	SD	07:00	10:00	03:00	A cloudy day with steady rain all day and southerly wind F3. Temperature of 6 °C and poor visibility.
5	2	05/04/24	SD	10:30	13:30	03:00	A cloudy day with steady rain all day and southerly wind F3. Temperature of 6 °C and poor visibility.
6	1	11/04/24	AD	06:59	10:29	03:00	A bright day with good visibility and rain showers. Southerly winds F1-3.
6	2	11/04/24	AD	10:29	13:29	03:00	A bright day with good visibility and rain showers. Southerly winds F1-3.
7	1	11/04/24	SN	07:00	10:00	03:00	A bright, still day, with southerly winds F3. Temperatures of 11 ° with good visibility.
7	2	11/04/24	SN	10:30	13:30	03:00	A bright, still day, with southerly winds F3. Temperatures of 11 ° with good visibility.
8	1	08/04/24	JH	07:00	10:00	03:00	A cloudy day with heavy persistent rainfall and light northerly winds F2-3. poor visibility with temperatures of 5 °C.
8	2	08/04/24	JH	10:30	13:30	03:00	A cloudy day with heavy persistent rainfall and light northerly winds F2-3. poor visibility with temperatures of 5 °C.
May							
1	1	14/05/24	JH	06:30	09:30	03:00	Overcast day with heavy rainfall and light north easterly winds F2-3. Temperatures of 10 - 12 °C and good to moderate visibility.
1	2	14/05/24	JH	10:00	13:00	03:00	Overcast day with heavy rainfall and light north easterly winds F2-3. Temperatures of 10 - 12 °C and good to moderate visibility.
2	1	09/05/24	SD	06:30	09:30	03:00	A dry, overcast day with south easterly winds F4. Temperatures of 10 °C with moderate visibility.
2	2	09/05/24	SD	10:00	13:00	03:00	A dry, overcast day with south easterly winds F4. Temperatures of 10 °C with moderate visibility.
5	1	09/05/24	JH	06:30	09:30	03:00	A dry day with full to scattered cloud cover and light southerly wind F2-3. Temperatures of 8-17 °C and good visibility.
5	2	09/05/24	JH	10:00	13:00	03:00	A dry day with full to scattered cloud cover and light southerly wind F2-3. Temperatures of 8-17 °C and good visibility.
6	1	14/05/24	SD	06:30	09:30	03:00	An overcast day with heavy rainfall and northerly winds F3. Temperatures of 9 °C with good visibility.
6	2	14/05/24	SD	10:00	13:00	03:00	An overcast day with heavy rainfall and northerly winds F3. Temperatures of 9 °C with good visibility.
7	1	14/05/24	AD	07:00	10:00	03:00	An overcast day with rain showers and north easterly winds F3. Temperatures of 11 °C with good visibility.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
7	2	14/05/24	AD	10:30	13:30	03:00	An overcast day with rain showers and north easterly winds F3. Temperatures of 11 °C with good visibility.
8	1	09/05/24	RC	06:30	09:30	03:00	A dry, bright day with light south easterly winds F1-2 and scattered cloud cover. Temperatures of 8 °C and good visibility.
8	2	09/05/24	RC	10:00	13:00	03:00	A dry, bright day with light south easterly winds F1-2 and scattered cloud cover. Temperatures of 8 °C and good visibility.
June							
1	1	12/06/24	AD	14:01	17:01	03:00	A bright, dry day with some scattered cloud and south westerly winds F3. Temperatures of 16 °C and excellent visibility.
1	2	12/06/24	AD	17:31	20:31	03:00	A bright, dry day with some scattered cloud and south westerly winds F3. Temperatures of 16 °C and excellent visibility.
2	1	11/06/24	JH	14:00	17:00	03:00	A dry overcast day with light north westerly winds F3-4. Temperatures of 11 to 15 °C and good visibility.
2	2	11/06/24	JH	17:30	20:30	03:00	A dry overcast day with light north westerly winds F3-4. Temperatures of 11 to 15 °C and good visibility.
5	1	11/06/24	DC	14:00	17:00	03:00	A dry, dull day with light north westerly winds F1-2. Temperatures of 13 °C with good visibility.
5	2	11/06/24	DC	17:30	20:30	03:00	A dry, dull day with light north westerly winds F1-2. Temperatures of 13 °C with good visibility.
6	1	12/06/24	JH	14:00	17:00	03:00	A dry day with scattered cloud and light to moderate south westerly winds F3-5. Good visibility with temperatures of 16 °C.
6	2	12/06/24	JH	17:30	20:30	03:00	A dry day with scattered cloud and light to moderate south westerly winds F3-5. Good visibility with temperatures of 16 °C.
7	1	12/06/24	SD	14:00	17:00	03:00	A dry day that started with light south westerly winds F3 that increased to F6 later in the day with light mist rolling in. Scattered cloud cover with good visibility and temperatures of 16 °C.
7	2	12/06/24	SD	17:30	20:30	03:00	A dry day that started with light south westerly winds F3 that increased to F6 later in the day with light mist rolling in. Scattered cloud cover with good visibility and temperatures of 16 °C.
8	1	11/06/24	SD	14:00	17:00	03:00	Dry at the beginning of the survey with northerly winds starting from F4 and increasing to F6. Scattered cloud with good visibility and temperatures of 13 °C.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
8	2	11/06/24	SD	17:30	20:30	03:00	Dry at the beginning of the survey with northerly winds starting from F4 and increasing to F6. Scattered cloud with good visibility and temperatures of 13 °C.
July							
1	1	10/07/24	AD	07:02	10:02	03:00	A dry clear and bright day with light north westerly winds of F3-4. Scattered cloud cover with excellent visibility and temperatures of 16 °C.
1	2	10/07/24	AD	10:32	13:32	03:00	A dry clear and bright day with light north westerly winds of F3-4. Scattered cloud cover with excellent visibility and temperatures of 16 °C.
2	1	09/07/24	DC	07:00	10:00	03:00	A dull day with rain showers and light northerly winds F1-2. Temperatures of 11 °C with good visibility.
2	2	09/07/24	DC	10:30	13:30	03:00	A dull day with rain showers and light northerly winds F1-2. Temperatures of 11 °C with good visibility.
5	1	09/07/24	SN	06:30	09:30	03:00	A misty day with rain all morning and light northerly winds F3. Temperatures of 12 °C with moderate visibility.
5	2	09/07/24	SN	10:00	13:00	03:00	A misty day with rain all morning and light northerly winds F3. Temperatures of 12 °C with moderate visibility.
6	1	10/07/24	JH	06:45	09:45	03:00	A dry day with light to moderate northerly winds F3-5. Temperatures of 12 to 18 °C scattered cloud and good visibility.
6	2	10/07/24	JH	10:15	13:15	03:00	A dry day with light to moderate northerly winds F3-5. Temperatures of 12 to 18 °C scattered cloud and good visibility.
7	1	10/07/24	SN	06:45	09:45	03:00	A dry, sunny day with north westerly winds F2. light scattered cloud cover with good visibility and temperatures of 11 °C.
7	2	10/07/24	SN	10:15	13:15	03:00	A dry, sunny day with north westerly winds F2. light scattered cloud cover with good visibility and temperatures of 11 °C.
8	1	09/07/24	JH	06:50	09:50	03:00	Heavy rainfall all day with light to moderate north easterly winds F3-5. Temperatures of 11 to 13 °C with good to moderate visibility.
8	2	09/07/24	JH	10:20	13:20	03:00	Heavy rainfall all day with light to moderate north easterly winds F3-5. Temperatures of 11 to 13 °C with good to moderate visibility.
August							

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
1	1	07/08/24	JH	07:40	10:40	03:00	An overcast, dry day with light to moderate south westerly winds F3-5. Temperatures of 14 to 17°C with good visibility.
1	2	07/08/24	JH	11:10	14:10	03:00	An overcast, dry day with light to moderate south westerly winds F3-5. Temperatures of 14 to 17°C with good visibility.
2	1	08/08/24	AD	08:00	11:00	03:00	A bright, dry day with overcast skies and light south westerly winds F2. Temperatures of 18°C with excellent visibility.
2	2	08/08/24	AD	11:30	14:30	03:00	A bright, dry day with overcast skies and light south westerly winds F2. Temperatures of 18°C with excellent visibility.
5	1	08/08/24	SN	07:35	10:35	03:00	A dry, dull day with light winds from the south F2. Temperatures of 17°C and good visibility.
5	2	08/08/24	SN	11:05	14:05	03:00	A dry, dull day with light winds from the south F2. Temperatures of 17°C and good visibility.
6	1	07/08/24	SN	07:40	10:40	03:00	A dry, dull day with light winds from the south-west F3. Scattered cloud cover with good visibility and temperatures of 14°C.
6	2	07/08/24	SN	11:10	14:10	03:00	A dry, dull day with light winds from the south-west F3. Scattered cloud cover with good visibility and temperatures of 14°C.
7	1	07/08/24	DC	07:50	10:50	03:00	A dry day with light to moderate south westerly winds F3-5. Scattered cloud good visibility and temperatures of 14°C.
7	2	07/08/24	DC	11:20	14:20	03:00	A dry day with light to moderate south westerly winds F3-5. Scattered cloud good visibility and temperatures of 14°C.
8	1	08/08/24	JH	07:30	10:30	03:00	An overcast day with light showers and light to moderate southerly winds F3-5. Temperatures of 16 to 18°C with good visibility.
8	2	08/08/24	JH	11:00	14:00	03:00	An overcast day with light showers and light to moderate southerly winds F3-5. Temperatures of 16 to 18°C with good visibility.
September							
1	1	09/09/24	JH	07:30	10:30	03:00	A dry day with light to moderate westerly wind F2-4. Overcast with temperatures of 8 to 15°C with good to moderate visibility.

VP	Watch no.	Date	Observer	Start time	End time	Duration (hours)	Weather
1	2	09/09/24	JH	11:00	14:00	03:00	A dry day with light to moderate westerly wind F2-4. Overcast with temperatures of 8 to 15 °C with good to moderate visibility.
2	1	06/09/24	AD	08:05	11:05	03:00	A dry bright day with north easterly winds F2-3. Overcast sky with excellent visibility and temperatures of 16°C.
2	2	06/09/24	AD	11:35	14:35	03:00	A dry bright day with north easterly winds F2-3. Overcast sky with excellent visibility and temperatures of 16°C.
5	1	06/09/24	SN	07:15	10:15	03:00	A dry, overcast day with light north easterly winds F3. Temperatures of 14°C with moderate visibility.
5	2	06/09/24	SN	10:45	13:45	03:00	A dry, overcast day with light north easterly winds F3. Temperatures of 14°C with moderate visibility.
6	1	09/09/24	SN	07:05	10:05	03:00	A dry overcast day, with light north westerly wind F2. Temperatures of 9°C with good visibility.
6	2	09/09/24	SN	10:35	13:35	03:00	A dry overcast day, with light north westerly wind F2. Temperatures of 9°C with good visibility.
7	1	09/09/24	AD	08:01	11:01	03:00	A bright, dry day with scattered cloud and north westerly winds F1-4. Temperatures of 14°C and excellent visibility.
7	2	09/09/24	AD	11:31	14:31	03:00	A bright, dry day with scattered cloud and north westerly winds F1-4. Temperatures of 14°C and excellent visibility.
8	1	06/09/24	JH	07:30	10:30	03:00	An overcast, dry day with light to moderate north easterly winds F2-4. Temperatures of 13 to 19°C with moderate visibility.
8	2	06/09/24	JH	11:00	14:00	03:00	An overcast, dry day with light to moderate north easterly winds F2-4. Temperatures of 13 to 19°C with moderate visibility.

Transect surveys

Table 43. Transect survey details

Date	Transect no.	Observer	Start time	Duration (hours)	Weather					
					Visibility	Cloud (oktas)	Rain	Wind (Beaufort)	Wind direction	Temp. (°C)
2023 breeding season										
17/05/23	A-D	TR	08:40	04:30	Good	2	Dry	3	N	18
17/07/23	A-D	JH	07:30	03:45	Good	6	Drizzle	2	W	16
06/09/23	A-D	JNM	11:05	04:15	Good	4	Dry	4	SE	24
04/12/23	A-D	JH	08:25	02:45	Good	0/8	Dry	2-3	NW	-1 to 3
12/02/24	A-D	JM	09:15	03:25	Good	3/8	Dry	4-5	SW	4
05/04/24	A-D	PD	07:50	03:20	Moderate	8	Some dry spells with heavy rain	5	SSW	10
10/05/24	A-D	SD	08:30	03:30	Good	0	Dry	3	S	14
12/07/24	A-D	RC	05:30	02:50	Good	6/9	Dry	2	NW	10

Additional surveys

Table 44. Hinterland survey details

Date	Location	Observer	Start time	Duration (hours)	Weather					
					Visibility	Cloud (oktas)	Rain	Wind (Beaufort)	Wind direction	Temp. (°C)
2022/23										

Date	Location	Observer	Start time	Duration (hours)	Weather					
					Visibility	Cloud (oktas)	Rain	Wind (Beaufort)	Wind direction	Temp. (°C)
17/10/2022	Within 5km of Site	JH	09:00	06:00	Good	3	Dry	6	SW	14
15/02/2023	Within 5km of Site	JD	08:55	06:05	Good	1	Dry	3	W	8
2023/24										
09/11/2023	Within 5km of Site	JH	08:30	05:55	Good	8	Heavy rainfall	4	W	8
04/01/2024	Within 5km of Site	AR	08:45	04:45	Good	3	Dry	2	S	6
2024										
09/04/2024	Within 5km of Site	JH	06:50	05:00	Good	5	Heavy rainfall	4	NW	7

Table 45. Raptor survey details

Date	Location	Observer	Start time	Duration (hours)	Weather					
					Visibility	Cloud (oktas)	Rain	Wind (Beaufort)	Wind direction	Temp. (°C)
2023										
26/05/23	Within 2km of Site	JH	07:45	05:00	Good	4	Dry	2	NE	17
16/06/23	Within 2km of Site	AD	07:13	04:02	Good	8	Dry	2	SE	16
17/07/23	Within 2km of Site	JD	09:30	04:30	Good	5	Light showers	3	SW	16
2024										
08/05/24	Within 2km of Site	JH	07:30	06:30	Good	8	Dry	2	SW	12

Table 46. Barn owl survey details

Date	Location	Observer	Start time	Duration (hours)	Weather					
					Visibility	Cloud (oktas)	Rain	Wind (Beaufort)	Wind direction	Temp. (°C)
2023										
30/04/23	1km barn owl survey area (7 sites - inspection)	MOC	10:50	03:30	Good	2	Dry	3	SW	13
25/05/23	1km barn owl survey area (Sites 1, 3, 6 and 7 – dusk visit)	MOC	21:50	02:35	Good	1	Dry	2	N	16
20/09/23	1km barn owl survey area (Site 4 - inspection)	MOC	11:00	01:00	Good	6	Occasional light showers	4	SW	16
20/09/23	1km barn owl survey area (Site 4 – dusk visit)	MOC	19:20	01:55	Good	6	Occasional light showers	4	SW	16

Table 47. Wader survey details

Date	Observer	Start time	Duration (hours)	Weather					
				Visibility	Cloud (oktas)	Rain	Wind (Beaufort)	Wind direction	Temp. (°C)
2023									
11/04/23	JD	08:00	04:30	Good	8	Light showers	3	SW	9
11/05/23	AD	07:05	04:57	Good	8	Heavy showers	4	NW	10
15/06/23	JD	07:50	03:25	Good	8	Dry	1	E	22

Table 48. Waterbird survey details

Date	Location	Observer	Start time	Duration (hours)	Weather					
					Visibility	Cloud (oktas)	Rain	Wind (Beaufort)	Wind direction	Temp. (°C)
2022/23										
20/03/23	Charleville Lagoons	JNM	11:00	02:00	Good	4	Dry	4	S	10
2023										
07/04/23	Charleville Lagoons	JNM	10:00	03:00	Good	8	Dry	4	W	12
13/04/23	Charleville Lagoons	JNM	13:00	03:00	Good	2	Dry	2	W	8
08/05/23	Charleville Lagoons	JNM	10:30	02:30	Good	6	Dry	4	W	14
30/08/23	Charleville Lagoons	JNM	10:30	02:00	Good	4	Dry	4	W	15
14/09/23	Charleville Lagoons	JNM	10:00	02:00	Good	8	Dry	3	SW	15
2023/24										
11/12/23	Charleville Lagoons	JNM	10:15	02:00	Good	1	Dry	4	S	9
12/01/24	Charleville Lagoons	JNM	11:30	02:00	Good	4	Dry	2	NE	0
16/02/24	Charleville Lagoons	JNM	10:00	02:00	Good	1	Dry	3	S	10
08/03/24	Charleville Lagoons	JNM	13:00	02:00	Good	3	Dry	3	E	8

Table 49. Whooper swan survey details

Date	Location	Observer	Start time	Duration (hours)	Weather					
					Visibility	Cloud (oktas)	Rain	Wind (Beaufort)	Wind direction	Temp. (°C)
2023/2024										

Date	Location	Observer	Start time	Duration (hours)	Weather					
					Visibility	Cloud (oktas)	Rain	Wind (Beaufort)	Wind direction	Temp. (°C)
27/10/23	Churchtown and Kilcolman Wildfowl Reserve	GM	07:30	06:50	Excellent	7	Occasional showers	4	SW	10
27/10/23	Within 5km of Site	JH	07:30	05:40	Good	7	Occasional showers	5	SE	11
16/11/23	Churchtown and Kilcolman Wildfowl Reserve	GM	08:45	07:45	Excellent	7	Light rain	1	SW	14
29/11/23	Churchtown and Kilcolman Wildfowl Reserve	GM	07:35	07:30	Excellent	4	Dry	1	SW	1
15/12/23	Churchtown and Kilcolman Wildfowl Reserve	GM	07:55	06:00	Excellent	4	Dry	1	N/A	11
19/12/23	Churchtown and Kilcolman Wildfowl Reserve	GM	07:55	06:50	Good	7	Dry	2	SE	8
19/12/23	Within 5km of Site	JH	08:15	05:45	Good	4	Light rain	3	W	10
15/01/24	Within 5km of Site	JH	08:00	05:30	Excellent	2	Dry	2	NW	-2
31/01/24	Churchtown and Kilcolman Wildfowl Reserve	GM	07:55	06:35	Good	6	Dry	4	W	9
13/02/24	Churchtown and Kilcolman Wildfowl Reserve	GM	07:20	05:40	Good	7	Light rain	1	SW	7
13/02/24	Within 5km of Site	JH	07:30	06:30	Good	7	Dry	2	SE	6

Date	Location	Observer	Start time	Duration (hours)	Weather					
					Visibility	Cloud (oktas)	Rain	Wind (Beaufort)	Wind direction	Temp. (°C)
27/02/24	Churchtown and Kilcolman Wildfowl Reserve	GM	07:00	06:00	Good	7	Light rain	2	SW	9
04/03/24	Churchtown and Kilcolman Wildfowl Reserve	GM	07:00	07:00	Good	7	Light rain	4	SE	6
13/03/24	Churchtown and Kilcolman Wildfowl Reserve	GM	06:30	05:55	Good	7	Rain	2	SW	11
13/03/24	Within 5km of Site	JH	06:15	06:00	Poor	7	Light rain	2	SW	10

APPENDIX C – SURVEY RESULTS

Vantage Point surveys

Table 50. VP survey flight activity results: barn owl

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2023/24 non-breeding season														
11/01/24	7	Unknown	Adult	Improved grassland	1	17:26	Flying	20-50	-	-	8	-	-	-
2024 breeding season														
06/09/24	2	Unknown	Unknown	Scrub	1	08:15	Flying	0-20	-	6	-	-	-	-

Table 51. VP survey flight activity results: black-headed gull

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2020/21 non-breeding season														
19/11/20	1	Unknown	Unknown	Improved grassland	7	12:38	Flying	40	-	-	240	-	-	-
20/11/20	3	Unknown	Unknown	Improved grassland	140	09:26	Flying	-	-	-	300	-	-	-
20/11/20	3	Unknown	Unknown	Improved grassland	120	10:43	Flying	60-80	-	-	-	120	-	-
20/11/20	3	Unknown	Unknown	Improved grassland	23	11:25	Flying	-	-	-	-	180	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
09/12/20	1	Unknown	Unknown	Rough grassland, improved grassland	12	09:52	Flying	3-5	-	55	-	-	-	-
11/12/20	3	Unknown	Unknown	Improved grassland	2	11:40	Flying	50	-	-	50	-	-	-
21/01/21	3	Unknown	Unknown	Rough grassland, improved grassland	41	14:40	Flying	200	-	-	-	-	-	60
15/02/21	3	Unknown	Adult	Improved grassland	1	10:16	Flying	3-5	-	50	-	-	-	-
17/02/21	2	Unknown	Unknown	Rough & improved grassland, grassland moorland	Mixed	13:42	Flying	80-100	-	-	-	600	-	-
2021 breeding season														
09/06/21	1	Unknown	Unknown	Rough & improved grassland, scrub, 2 nd rotation forest	5	19:42	Flying	80	-	-	-	70	-	-
2021/22 non-breeding season														
15/12/21	3	Unknown	Unknown	Improved grassland	8	09:16	Flying	0-20	-	35	-	-	-	-
15/12/21	3	Unknown	Adult	Improved grassland	17	09:45	Flying	50-100	-	-	-	50	-	-
15/12/21	3	Unknown	Adult	Improved grassland	42	10:17	Flying	50-100	-	-	-	60	-	-
15/12/21	3	Unknown	Adult	Improved grassland	8	10:19	Flying	0-20	-	25	-	-	-	-
06/01/22	4	Unknown	Unknown	Improved grassland	12	09:19	Flying	0-20	-	25	-	-	-	-
2022 breeding season														
20/07/22	3	Unknown	Adult, juvenile	Improved grassland	3	13:30	Flying	-	-	30	-	-	-	-
27/07/22	1	Unknown	Unknown	Improved grassland	1	09:10	Flying	50	-	-	80	-	-	-
17/08/22	3	Unknown	Unknown	Improved grassland	8	09:23	Flying	20-100	-	-	30	12	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
17/08/22	3	Unknown	Unknown	Improved grassland	3	11:14	Flying	20-50	-	-	55	-	-	-
19/08/22	4	Unknown	Adult	Improved grassland	12	11:25	Flying	25	-	-	13	-	-	-
19/08/22	4	Unknown	Adult	Improved grassland	15	12:15	Flying	33	-	-	25	-	-	-
2022/23 non-breeding season														
07/10/22	8	Unknown	Adult	Rough grassland, improved grassland	3	14:05	Flying	10-15	-	40	-	-	-	-
04/11/22	1	Unknown	Unknown	Improved grassland, rough grassland	40	10:20	Flying	20-50	-	-	30	-	-	-
04/11/22	1	Unknown	Unknown	Rough grassland	11	10:45	Flying	0-20	-	45	-	-	-	-
04/11/22	2	Unknown	Adult	Improved grassland	20	10:15	Flying	20-50	-	-	8	-	-	-
04/11/22	8	Unknown	Unknown	Improved grassland	21	10:51	Flying	20-40	-	-	50	-	-	-
07/12/22	7	Unknown	Unknown	Treeline	1	09:59	Flying	0-20	-	20	-	-	-	-
07/12/22	8	Unknown	Unknown	Improved grassland	14	09:06	Flying	0-20	-	10	-	-	-	-
07/12/22	8	Unknown	Unknown	Improved grassland	1	12:43	Flying	20-50	-	-	18	-	-	-
17/01/23	8	Unknown	Unknown	Improved grassland	40	12:13	Flying	0-20	-	30	-	-	-	-
17/01/23	8	Unknown	Unknown	Improved grassland	2	15:31	Flying	20-50	-	-	98	-	-	-
17/01/23	8	Unknown	Unknown	Improved grassland	28	15:51	Flying	50-100	-	-	-	166	-	-
17/01/23	1	Unknown	Unknown	Improved grassland	26	11:28	Flying	50-100	-	-	-	68	-	-
17/01/23	1	Unknown	Unknown	Improved grassland	24	13:34	Flying	20-50	-	-	196	-	-	-
17/01/23	1	Unknown	Unknown	Improved grassland	23	16:08	Flying	20-50	-	-	60	-	-	-
17/01/23	2	Unknown	Unknown	Rough grassland	1	15:55	Flying	50-100	-	-	-	60	-	-
17/01/23	2	Unknown	Unknown	Rough grassland	107	16:04	Flying	50-100	-	-	-	50	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
17/01/23	5	Unknown	Unknown	Improved grassland	3	13:21	Flying, circling	0-50	-	100	150	-	-	-
13/02/23	1	Unknown	Unknown	Improved grassland	20	09:54	Flying	100-200	-	-	-	-	136	-
13/02/23	1	Unknown	Unknown	Improved grassland	24	11:23	Flying	20-50	-	-	40	-	-	-
13/02/23	2	Unknown	Unknown	Rough grassland, improved grassland	13	09:23	Flying	20-50	-	-	60	-	-	-
13/02/23	2	Unknown	Unknown	Improved grassland, 1st rotation forest	4	09:37	Flying	20-50	-	-	69	-	-	-
13/02/23	2	Unknown	Unknown	Improved grassland, 1st rotation forest	2	11:10	Flying	0-20	-	48	-	-	-	-
13/02/23	2	Unknown	Unknown	Rough grassland, improved grassland	8	12:12	Flying	50-100	-	-	-	60	-	-
13/02/23	2	Unknown	Unknown	Rough & improved grassland, 1st rotation forest	16	13:20	Flying	20-50	-	-	66	-	-	-
13/02/23	6	Unknown	Adult	Improved grassland	13	09:23	Flying	0-20	-	-	15	-	-	-
13/02/23	7	Unknown	Unknown	Improved grassland	13	09:24	Flying	20-50	-	-	10	-	-	-
13/02/23	8	Unknown	Adult	Improved grassland	1	11:05	Flying	25	-	-	25	-	-	-
2023 breeding season														
13/04/23	8	Unknown	Adult	Improved grassland	3	19:51	Flying	20-50	-	-	60	-	-	-
13/06/23	8	Unknown	Unknown	Improved grassland	1	09:34	Flying	0-20	-	68	-	-	-	-
2023/24 non-breeding season														
14/11/23	2	Unknown	Adult	Improved grassland	1	11:25	Flying	20-50	-	-	14	-	-	-
14/11/23	2	Unknown	Unknown	Improved grassland	3	11:37	Flying	0-20	-	18	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
15/11/23	8	Unknown	Unknown	Improved grassland	120	11:06	Flying	20-100	-		40	10	-	-
12/12/23	2	Unknown	Unknown	Improved grassland	3	09:21	Flying	20-50	-	-	50	-	-	-
12/12/23	5	Unknown	Unknown	Improved grassland	2	09:25	Flying	50-100	-	-	-	46	-	-
12/12/23	5	Unknown	Unknown	Improved grassland	3	09:31	Flying	0-20	-	41	-	-	-	-
12/12/23	2	Unknown	Unknown	River	3	09:32	Flying	50-100	-	-	-	58	-	-
12/12/23	2	Unknown	Unknown	Improved grassland	1	09:47	Flying	0-20	-	58	-	-	-	-
12/12/23	8	Unknown	Adult	Improved grassland	5	09:57	Flying	20-50	-	-	40	-	-	-
12/12/23	2	Unknown	Unknown	River	2	09:59	Flying	20-50	-	-	55	-	-	-
12/12/23	8	Unknown	Unknown	Improved grassland	4	10:01	Flying	20-50	-	-	30	-	-	-
12/12/23	8	Unknown	Adult	Pond	5	10:26	Flying	0-20	-	20	-	-	-	-
12/12/23	8	Unknown	Unknown	Pond	2	12:06	Flying	20-50	-	-	40	-	-	-
12/12/23	8	Unknown	Unknown	Improved grassland	24	12:48	Flying	20-50	-	-	40	-	-	-
12/12/23	2	Unknown	Unknown	Improved grassland	4	13:44	Circling	100-180	-	-	-	-	222	-
13/12/23	6	Unknown	Unknown	Improved grassland	12	10:33	Flying	100-180	-	-	-	-	90	-
13/12/23	1	Unknown	Unknown	Improved grassland	3	10:56	Flying	50-100	-	-	-	65	-	-
13/12/23	6	Unknown	Unknown	Improved grassland	5	12:01	Flying	50-100	-	-	-	93	-	-
13/12/23	1	Unknown	Unknown	Improved grassland	1	13:27	Flying	50-100	-	-	-	60	-	-
10/01/24	8	Unknown	Adult	Pond	35	11:10	Circling	20-50	-	-	620	-	-	-
10/01/24	2	Unknown	Unknown	Improved grassland	6	11:16	Flying	20-50	-	-	80	-	-	-
10/01/24	2	Unknown	Unknown	Improved grassland	77	11:26	Flying	20-50	-	-	94	-	-	-
10/01/24	5	Unknown	Unknown	Improved grassland	7	11:29	Flying	20-50	-	-	117	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
10/01/24	8	Unknown	Adult	Improved grassland	8	12:33	Flying	20-50	-	-	40	-	-	-
10/01/24	8	Unknown	Adult	Improved grassland	7	15:29	Flying	20-50	-	-	30	-	-	-
11/01/24	1	Unknown	Unknown	Rough grassland	80	13:39	Flying	20-180	-	-	250	250	40	-
2024 breeding season														
08/04/24	2	Unknown	Unknown	Improved grassland	1	09:24	Flying	20-50	-	-	32	-	-	-
11/04/24	7	Unknown	Unknown	Improved grassland	2	08:10	Flying	0-20	-	6	-	-	-	-
09/05/24	8	Unknown	Unknown	Improved grassland	1	08:01	Flying	0-20	-	60	-	-	-	-
11/06/24	8	Unknown	Unknown	Pond	4	14:25	Flying	0-20	-	15	-	-	-	-
11/06/24	8	Unknown	Unknown	Improved grassland	1	15:37	Flying	0-20	-	25	-	-	-	-
11/06/24	2	Unknown	Unknown	Improved grassland	2	15:43	Flying	0-20	-	77	-	-	-	-
11/06/24	8	Unknown	Unknown	Improved grassland	1	19:27	Flying	0-20	-	30	-	-	-	-

Table 52. VP survey flight activity results: black-tailed godwit

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2023 breeding season														
10/08/23	8	Unknown	Mixed group	Lagoons	37	09:06	Flying	0-50	-	20	20	-	-	-
10/08/23	8	Unknown	Mixed group	Lagoons	37	09:12	Flying	0-50	-	35	35	-	-	-

Table 53. VP survey flight activity results: buzzard

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2020/21 non-breeding season														
23/10/20	2	Female	Adult	-	1	11:45	Flying	30	-	-	28	-	-	-
23/10/20	1	Unknown	Unknown	Rough grassland, grassland moorland, scrub	2	14:09	Soaring, circling	100-180, 200	-	-	-	-	-	-
14/12/20	3	Unknown	Unknown	Improved grassland	1	13:46	Flying	25	-	-	45	-	-	-
19/01/21	1	Unknown	Unknown	Rough grassland, improved grassland	1	13:33	Flying	25	-	-	55	-	-	-
20/01/21	3	Unknown	Unknown	Improved grassland	1	9.00	Perched	-	-	-	-	-	-	-
21/01/21	3	Unknown	Unknown	Improved grassland	1	13.30	Perched	-	-	-	-	-	-	-
15/02/21	4	Unknown	Unknown	Improved grassland	1	13:55	Flying, hunting, soaring, circling	50-60	-	-	-	180	-	-
15/02/21	4	Unknown	Unknown	Improved grassland	1	15:00	Hunting, flying	1-5	-	180	-	-	-	-
16/02/21	3	Unknown	Unknown	Improved grassland	1	13.30	perched	-	-	-	-	-	-	-
16/02/21	4	Unknown	Unknown	Improved grassland	1	10.24	perched	-	180	-	-	-	-	-
19/03/21	2	Male/female	Adult	Rough & improved grassland, moorland, scrub	2	12:10	Soaring, circling	180-300	-	-	-	-	-	1,200
19/03/21	3	Unknown	Unknown	Improved grassland	2	7.35-10.15	Flying, perched	-	-	-	-	-	-	-
19/03/21	4	Unknown	Unknown	Improved grassland	1	13.17	calling	-	-	-	-	-	-	-
22/03/21	1	Male	Adult	Rough & improved grassland.	2	12:42	Flying, soaring	100-300	-	-	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
				grassland moorland, scrub										
22/03/21	4	Unknown	Unknown	Improved grassland	2	9.30	Flying, perched	-	-	-	-	-	-	-
2021 breeding season														
22/04/21	3	Unknown	Unknown	Rough & improved grassland, 2 nd rotation forest	2	15:20	Soaring, circling	150	-	-	-	-	300	-
22/04/21	3	Unknown	Unknown	Rough & improved grassland, 2 nd rotation forest	1	16:48	Flying, commuting	100	-	-	-	85	-	-
28/04/21	4	Unknown	Unknown	Rough & improved grassland, grassland moorland	2	15:50	Soaring, circling	100 - 180	-	-	-	-	-	2,400
24/05/21	2	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	1	11:52	Flying	200	-	-	-	-	-	420
27/05/21	3	Unknown	Unknown	Rough & improved grassland, grassland moorland, 2 nd rotation forest	1	06:10	Flying, commuting	80	-	-	-	40	-	-
17/06/21	3	Unknown	Unknown	Rough & improved grassland, scrub, 2 nd rotation forest	1	17:20	Flying, soaring	200	-	-	-	-	-	180
12/07/21	2	Unknown	Unknown	Rough & improved grassland, scrub	1	08:22	Flying	40	-	-	36	-	-	-
13/07/21	2	Unknown	Unknown	Rough & improved grassland, scrub	1	10:23	Flying	40	-	-	35	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
23/08/21	3	Unknown	Unknown	Rough & improved grassland, grassland moorland	3	17:23	Soaring, circling	150-300	-	-	-	-	-	840
23/09/21	4	Unknown	Unknown	Rough & improved grassland, grassland moorland, 2 nd rotation forest	1	12:25	Flying	80	-	-	-	48	-	-
23/09/21	4	Unknown	Unknown	Rough & improved grassland, grassland moorland, 2 nd rotation forest	1	12:52	Soaring, drifting	150-200	-	-	-	-	-	360
28/09/21	3	Unknown	Unknown	Rough & improved grassland, grassland moorland, 2 nd rotation forest	1	12:50	Soaring, circling	100	-	-	-	360	-	-
2021/22 non-breeding season														
12/10/21	4	Unknown	Unknown	Tree	1	09:42	Flying	0-20	1	29	-	-	-	-
15/12/21	3	Unknown	Unknown	Grassland, moorland	1	0.45	Flying, circling	30-60	-	-	-	220	-	-
09/12/21	4	Unknown	Adult	Improved grassland	1	13:00	Flying	0-20	-	8	-	-	-	-
09/12/21	4	Unknown	Adult	Improved grassland	1	13:06	Flying	0-20	-	3	-	-	-	-
09/12/21	4	Unknown	Adult	Improved grassland	1	13:58	Flying	20-50	-	-	32	-	-	-
15/12/21	3	Unknown	Unknown	Tree	1	14:20	Flying	0-20	120	12	-	-	-	-
23/12/21	2	Unknown	Adult	Improved grassland	1	13:53	Perching, flying	1-10m	5	20	-	-	-	-
05/01/22	3	Unknown	Juvenile	Improved grassland	1	10:30	Flying	0-20	300	30	-	-	-	-
05/01/22	3	Unknown	Juvenile	Improved grassland	1	10:58	Flying	0-20	43	7	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
05/01/22	3	Unknown	Juvenile	Improved grassland	1	13:55	Flying	0-20	-	33	-	-	-	-
23/01/22	2	Unknown	Unknown	Improved grassland	1	10:00	Flying	20-50	-	-	5	-	-	-
03/02/22	4	Unknown	Unknown	Improved grassland	1	09:09	Flying	0-20	-	27	-	-	-	-
03/02/22	4	Unknown	Unknown	Improved grassland	1	10:20	Flying, hunting, mobbing	0-20	35	43	-	-	-	-
03/02/22	4	Unknown	Unknown	Improved grassland	1	12:44	Flying	0-20	31	-	-	-	-	-
10/02/22	3	Unknown	Unknown	Improved grassland	1	09:50	Flying	0-20	-	13	-	-	-	-
10/02/22	3	Unknown	Unknown	Improved grassland	1	09:56	Circling	50-100	-	-	-	90	-	-
10/02/22	3	Unknown	Unknown	Improved grassland	1	12:11	Flying	50-100	-	-	-	100	-	-
10/02/22	3	Unknown	Unknown	Improved grassland	1	13:29	Flying	20-50	-	-	35	-	-	-
02/03/22	3	Unknown	Unknown	Improved grassland	1	12:34	Perched	0-20	694	40	56	-	-	-
29/03/22	2	Unknown	Unknown	River	1	13:19	Flying, soaring, circling	60-80	-	-	-	300	-	-
29/03/22	2	Unknown	Adult	Improved grassland	1	14:20	Perching	30	120	-	-	-	-	-
29/03/22	2	Unknown	Adult	Improved grassland	1	14:30	Perching	20	240	-	-	-	-	-
29/03/22	2	Unknown	Adult	Improved grassland	1	14:34	Flying	40	-	-	30	-	-	-
29/03/22	2	Unknown	Adult	Improved grassland	1	14:05	Circling, soaring, flying	50	-	-	120	-	-	-
29/03/22	2	Unknown	Adult	Improved grassland	1	15:25	Perching, flying	0-20	180	10	-	-	-	-
29/03/22	2	Unknown	Adult	Improved grassland	1	15:26	Flying	100	-	-	-	120	-	-
29/03/22	2	Unknown	Adult	Improved grassland	1	15:52	Circling, soaring, flying	5	-	15	-	-	-	-
2022 breeding season														

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
20/04/22	2	Unknown	Unknown	Improved grassland	1	13:28	Flying, soaring circling	80-90	-	-	-	180	-	-
20/04/22	2	Unknown	Adult	Trees	1	14:20	Flying	25	-	-	2	-	-	-
20/04/22	2	Female	Adult	Improved grassland	1	15:06	Flying	0-20, 20, 30	-	1	6	3	-	-
20/04/22	2	Male	Adult	Improved grassland	1	15:53	Flying	40	-	-	4	-	-	-
20/04/22	2	Unknown	Unknown	Improved grassland	1	17:34	Flying, perched	35	-	-	35	-	-	-
20/04/22	2	Male	Adult	Improved grassland, trees	1	17:52	Flying	30-40	-	-	60	-	-	-
27/04/22	4	Unknown	Unknown	Improved grassland	1	14:25	Flying	60	-	-	-	30	-	-
28/04/22	3	Unknown	Unknown	Improved grassland	1	13:40	Flying	5	-	5	-	-	-	-
26/05/22	4	Unknown	Adult	Rough grassland, improved grassland	1	08:52	Flying	30	-	-	38	-	-	-
27/05/22	1	Unknown	Unknown	Improved grassland	1	15:30	Perched	-	50	-	-	-	-	-
27/05/22	1	Unknown	Unknown	Improved grassland	1	15:47	Circling	>180	-	-	-	-	-	180
27/05/22	1	Unknown	Unknown	Improved grassland	1	16:00	Circling	>180	-	-	-	-	-	50
27/05/22	1	Unknown	Unknown	Unknown	2	16:15	Circling	>180	-	-	-	-	-	60
16/06/22	4	Unknown	Unknown	Improved grassland	1	12:40	Flying	30	-	10	-	-	-	-
16/06/22	1	Unknown	Unknown	Improved grassland	1	17:05	Flying	40	-	60	-	-	-	-
15/07/22	4	Unknown	Unknown	Improved grassland	1	10:20	Flying	-	-	-	-	30	-	-
20/07/22	3	Unknown	Unknown	Improved grassland, hedgerow	1	09:33	Flying	15	-	7	-	-	-	-
20/07/22	3	Unknown	Adult	Improved grassland, scrub	1	10:47	Flying, circling, soaring	120	-	-	-	-	79	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
20/07/22	3	Unknown	Adult	Improved grassland, scrub	1	12:10	Flying, circling, hunting	-	-	-	-	28	50	-
20/07/22	3	Unknown	Adult	Improved grassland	1	13:56	Flying, circling	-	-	-	-	-	135	-
20/07/22	3	Unknown	Adult	Improved grassland	1	13:59	Flying	-	-	-	15	-	-	-
20/07/22	3	Unknown	Adult	Improved grassland	1	14:57	Flying, circling	-	-	-	-	-	105	-
19/08/22	4	Unknown	Adult	Improved grassland, scrub	1	10:18	Flying, hunting	30	-	-	15	-	-	-
19/08/22	4	Unknown	Unknown	Improved grassland, scrub	1	13:38	Flying, hunting	15	-	27	-	-	-	-
19/08/22	4	Unknown	Adult	Improved grassland	1	14:37	Flying, soaring	50-60	-	-	-	212	-	-
23/09/22	1	Unknown	Adult	Improved grassland	1	14:25	Perched	-	20	-	-	-	-	-
23/09/22	2	Unknown	Adult	Improved grassland, 1st rotation forest	1	09:34	Flying, perched	5-10	-	-	-	-	-	-
23/09/22	7	Unknown	Adult	Rough grassland	1	12:36	Soaring	120	-	-	-	-	80	-
2022/23 non-breeding season														
07/10/22	1	Unknown	Adult	Improved grassland	1	11:22	Soaring	80-100	-	-	-	7	-	-
07/10/22	1	Unknown	Adult	Improved grassland	1	14:35	Flying	20-50	-	-	5	-	-	-
07/10/22	2	Unknown	Adult	Trees	1	10:07	Circling	30	-	-	4	-	-	-
07/10/22	8	Unknown	Unknown	Improved grassland	1	13:48	Flying	40	-	-	130	-	-	-
07/10/22	5	Unknown	Unknown	Improved grassland	1	14:42	Flying, hunting	40	-	-	132	-	-	-
07/10/22	7	Unknown	Unknown	Rough grassland	1	15:03	Hunting	40-80	-	-	-	60	-	-
04/11/22	1	Unknown	Unknown	Rough grassland	1	12:46	Flying	0-50	-	45	45	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
04/11/22	1	Unknown	Unknown	Improved grassland, rough grassland	1	14:00	Flying	0-50	-	30	30	-	-	-
04/11/22	8	Unknown	Unknown	Improved grassland	1	12:53	Flying	30-60	-	-	34	10	-	-
07/12/22	2	Unknown	Unknown	Improved grassland	1	09:10	Perched	-	1,800	-	-	-	-	-
17/01/23	6	Unknown	Adult	Improved grassland	1	13:04	Flying, perched	20	-	-	65	-	-	-
17/01/23	8	Unknown	Unknown	River, improved grassland	1	11:09	Flying	0-20	-	51	-	-	-	-
17/01/23	8	Unknown	Unknown	Improved grassland	1	14:20	Flying, hunting	0-20	-	28	-	-	-	-
17/01/23	1	Unknown	Unknown	Hedgerow	1	15:56	Perched	0-20	1,260	-	-	-	-	-
17/01/23	2	Unknown	Unknown	Rough grassland	1	12:56	Flying	1-10	-	10	-	-	-	-
17/01/23	2	Unknown	Unknown	Rough grassland	1	13:37	Flying	50-100	-	-	-	15	-	-
17/01/23	2	Unknown	Unknown	Rough grassland	1	14:40	Flying	20-50	-	-	93	-	-	-
17/01/23	2	Unknown	Unknown	Rough grassland	1	15:03	Flying	2-20	-	23	-	-	-	-
17/01/23	2	Unknown	Unknown	Rough grassland	1	15:31	Flying	50-100	-	-	-	82	-	-
17/01/23	5	Unknown	Unknown	Improved grassland	1	15:25	Flying	0-20	-	40	-	-	-	-
17/01/23	5	Unknown	Unknown	Improved grassland	1	15:45	Flying, perched	0-20	-	60	-	-	-	-
13/02/23	1	Unknown	Unknown	River, improved grassland	1	12:15	Flying, soaring	100-200	-	-	-	-	393	-
13/02/23	2	Unknown	Unknown	Rough grassland	1	08:57	Flying	20-50	-	-	20	-	-	-
13/02/23	2	Unknown	Unknown	Rough grassland, improved grassland	1	12:34	Flying	20-50	-	-	45	-	-	-
13/02/23	6	Unknown	Unknown	Treeline	1	10:11	Perched	0-20	1,200	-	-	-	-	-
13/02/23	7	Unknown	Adult	Improved grassland	1	12:22	Flying	20-50	-	-	8	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13/03/23	1	Unknown	Adult	Rough grassland	1	12:25	Flying	40	-	-	40	-	-	-
2023 breeding season														
13/04/23	7	Unknown	Unknown	Rough grassland	1	14:04	Soaring	50-100	-	-	-	240	-	-
13/04/23	6	Unknown	Adult	Rough grassland	1	14:06	Soaring	100-180	-	-	-	-	168	-
13/04/23	7	Unknown	Unknown	Rough grassland	1	14:08	Soaring	50-100	-	-	-	104	-	-
13/04/23	2	Unknown	Adult	Rough grassland	1	14:13	Circling	20-50	-	-	50	-	-	-
13/04/23	7	Unknown	Unknown	Rough grassland	1	14:20	Soaring	20-50	-	-	71	-	-	-
13/04/23	6	1 male/1 female	Adult	Rough grassland	2	14:37	Soaring	100-180	-	-	-	-	202	-
13/04/23	7	Unknown	Unknown	Rough grassland	1	14:45	Flying	0-20	-	20	-	-	-	-
13/04/23	8	Unknown	Unknown	Rough grassland	1	15:32	Perching	0-20	-	400	-	-	-	-
13/04/23	7	Unknown	Unknown	Rough grassland	1	16:46	Soaring	50-180	-	-	-	300	224	-
13/04/23	7	Unknown	Unknown	Rough grassland	1	16:51	Soaring	50-100	-	-	-	120	-	-
13/04/23	8	Unknown	Adult	Improved grassland	1	17:25	Flying	20-50	-	-	110	-	-	-
09/05/23	8	Unknown	Unknown	Improved grassland	1	10:08	Soaring	20-100	-	-	8	262	-	-
09/05/23	7	Unknown	Unknown	Rough grassland	1	10:37	Flying	100-180	-	-	-	-	204	-
09/05/23	2	Unknown	Adult	Improved grassland	1	11:20	Flying	0-20	-	9	-	-	-	-
09/05/23	2	Unknown	Adult	Improved grassland	1	12:23	Soaring	0-20	-	56	-	-	-	-
09/05/23	2	Unknown	Adult	Improved grassland	1	12:23	Hunting	0-20	-	183	-	-	-	-
09/05/23	2	Unknown	Adult	Improved grassland	1	12:47	Flying	100-180	-	-	-	-	100	-
13/06/23	1	Unknown	Unknown	Improved grassland	1	08:40	Flying	0-20	-	5	-	-	-	-
13/06/23	1	Unknown	Unknown	Improved grassland	1	11:14	Soaring	50-100	-	-	-	300	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13/06/23	1	Unknown	Unknown	Improved grassland	1	11:31	Soaring	20-100	-	-	200	149	-	-
13/06/23	1	Unknown	Unknown	Improved grassland	1	12:28	Flying	20-100	-	-	420	120	-	-
13/06/23	1	Unknown	Unknown	Improved grassland	1	13:10	Soaring	20-50	-	-	328	-	-	-
13/06/23	1	Unknown	Unknown	Improved grassland	1	13:57	Soaring	20-180	-	-	20	80	100	-
13/07/23	6	Unknown	Unknown	Improved grassland	1	09:11	Flying	0-20	-	7	-	-	-	-
13/07/23	2	Unknown	Unknown	Rough grassland	1	09:25	Perching	0-20	-	174	-	-	-	-
13/07/23	2	Unknown	Unknown	Improved grassland	1	09:33	Flying	0-20	-	27	-	-	-	-
13/07/23	2	Unknown	Unknown	Improved grassland	1	12:42	Flying	0-20	-	69	-	-	-	-
13/07/23	7	Unknown	Unknown	Improved grassland	1	12:42	Flying	20-50	-	-	20	-	-	-
10/08/23	7	Unknown	Unknown	Improved grassland	1	06:58	Hunting	0-20	-	32	-	-	-	-
10/08/23	2	Unknown	Unknown	Rough grassland	1	07:01	Hunting	0-20	-	184	-	-	-	-
10/08/23	2	Unknown	Unknown	Rough grassland	1	07:55	Hunting	0-20	-	40	-	-	-	-
10/08/23	2	Unknown	Unknown	Rough grassland	1	09:15	Flying	0-20	-	124	-	-	-	-
10/08/23	2	Unknown	Unknown	Rough grassland	1	10:22	Flying	0-20	-	290	-	-	-	-
10/08/23	2	Unknown	Unknown	Rough grassland	1	10:51	Flying	20-50	-	-	88	-	-	-
10/08/23	2	Unknown	Juvenile	Rough grassland	1	12:16	Flying	0-50	-	89	55	-	-	-
10/08/23	5	Unknown	Unknown	Improved grassland	1	13:13	Flying	0-20	-	45	-	-	-	-
10/08/23	6	Unknown	Unknown	Improved grassland	1	13:13	Flying	20-100	-	-	10	50	-	-
10/08/23	5	Unknown	Unknown	Improved grassland	1	13:58	Soaring	50-100	-	-	-	88	-	-
14/09/23	8	Unknown	Unknown	Improved grassland	1	08:20	Hunting	0-20	-	12	-	-	-	-
14/09/23	7	Unknown	Unknown	Rough grassland	1	11:33	Flying	0-20	-	20	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
14/09/23	6	Unknown	Unknown	Improved grassland	1	12:50	Flying	50-100	-	-	-	120	-	-
2023/24 non-breeding season														
10/10/23	8	Unknown	Unknown	Improved grassland	1	11:41	Flying	0-20	-	22	-	-	-	-
14/11/23	2	Unknown	Adult	Improved grassland	1	15:09	Hunting	0-20	-	18	-	-	-	-
12/12/23	8	Unknown	Adult	Improved grassland	1	08:06	Flying	0-20	-	20	-	-	-	-
12/12/23	2	Unknown	Unknown	Improved grassland	1	09:01	Flying	0-50	-	20	52	-	-	-
13/12/23	6	Unknown	Unknown	Improved grassland	1	12:18	Hunting	20-50	-	-	48	-	-	-
13/12/23	1	Unknown	Unknown	Improved grassland	1	13:05	Soaring	50-100	-	-	-	70	-	-
10/01/24	8	Unknown	Adult	Improved grassland	1	12:55	Flying	0-20	-	50	-	-	-	-
10/01/24	7	Unknown	Adult	Improved grassland	1	12:06	Hunting	0-20	-	50	-	-	-	-
10/01/24	6	Unknown	Unknown	Improved grassland	1	18:02	Flying	0-20	-	48	-	-	-	-
15/02/24	8	Unknown	Unknown	Improved grassland	1	07:19	Flying	0-20	-	35	-	-	-	-
15/02/24	2	Unknown	Unknown	Improved grassland	1	07:57	Hunting	0-20	-	38	-	-	-	-
15/02/24	8	Unknown	Unknown	Improved grassland	1	09:32	Flying	0-20	-	28	-	-	-	-
15/02/24	2	Unknown	Adult	Improved grassland	1	12:05	Flying	0-20	-	15	-	-	-	-
15/02/24	2	Unknown	Adult	Improved grassland	1	13:06	Hunting	0-20	-	19	-	-	-	-
15/02/24	8	Unknown	Unknown	Improved grassland	1	13:08	Circling	0-50	-	35	63	-	-	-
15/02/24	2	Unknown	Adult	Improved grassland	1	13:11	Hunting	0-20	-	125	-	-	-	-
19/02/24	7	Unknown	Unknown	Rough grassland	1	09:31	Flying	20-50	-	-	5	-	-	-
19/02/24	6	Unknown	Unknown	Improved grassland	1	11:18	Flying	0-20	-	15	-	-	-	-
19/02/24	1	Unknown	Unknown	Rough grassland	1	11:55	Soaring	100-180	-	-	-	-	158	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
19/02/24	6	Unknown	Unknown	Improved grassland	2	11:59	Circling	20-50	-	-	45	-	-	-
19/02/24	1	Unknown	Unknown	Rough grassland	1	12:54	Soaring	100-180	-	-	-	-	311	-
19/02/24	6	Unknown	Unknown	Improved grassland	1	13:52	Flying	20-50	-	-	115	-	-	-
14/03/24	8	Unknown	Adult	Improved grassland	1	12:29	Flying	50-100	-	-	-	50	-	-
14/03/24	2	Unknown	Unknown	Improved grassland	1	12:54	Soaring	20-180	-	-	124	70	140	-
14/03/24	2	Unknown	Unknown	Rough grassland	1	16:16	Circling	50-100	-	-	-	124	-	-
14/03/24	2	Unknown	Unknown	Rough grassland	2	16:48	Circling	20-100	-	-	75	279	-	-
14/03/24	5	Unknown	Unknown	Improved grassland	2	17:26	Flying	0-20	-	177	-	-	-	-
18/03/24	7	Unknown	Unknown	Improved grassland	4	12:44	Flying	50-100	-	-	-	140	-	-
19/03/24	6	Unknown	Unknown	Improved grassland	2	12:10	Soaring	100-180	-	-	-	-	580	-
19/03/24	1	Unknown	Unknown	Rough grassland	1	14:53	Flying	50-100	-	-	-	180	-	-
19/03/24	1	Unknown	Adult	Rough grassland	1	15:01	Flying	20-100	-	-	60	15	-	-
19/03/24	1	Unknown	Unknown	Tree	1	16:54	Perched	-	-	-	-	-	-	-
2024 breeding season														
09/05/24	2	Unknown	Adult	Improved grassland	1	07:35	Flying	20-50	-	-	50	-	-	-
09/05/24	8	Unknown	Unknown	Improved grassland	1	08:01	Hunting	20-50	-	-	31	-	-	-
09/05/24	5	Unknown	Unknown	Improved grassland	1	10:31	Soaring	100-180	-	-	-	-	165	-
09/05/24	2	Unknown	Adult	Improved grassland	1	10:35	Flying	20-50	-	-	50	-	-	-
09/05/24	2	Unknown	Adult	Rough grassland	1	11:38	Flying	20-50	-	-	45	-	-	-
09/05/24	2	Unknown	Adult	Improved grassland	1	11:55	Flying	20-50	-	-	50	-	-	-
09/05/24	8	Unknown	Adult	Improved grassland	1	12:22	Soaring	20-50	-	-	420	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
09/05/24	8	Unknown	Adult	Improved grassland	1	12:46	Soaring	20-50	-	-	188	-	-	-
09/05/24	2	Unknown	Adult	Improved grassland	1	12:48	Flying	50-100	-	-	-	70	-	-
09/05/24	5	Unknown	Unknown	Improved grassland	1	12:52	Flying	0-20	-	30	-	-	-	-
11/06/24	8	Unknown	Unknown	Improved grassland	1	14:14	Flying	100-180	-	-	-	-	100	-
11/06/24	5	Unknown	Unknown	Improved grassland	1	14:15	Hunting	20-50	-	-	300	-	-	-
11/06/24	2	Unknown	Unknown	Improved grassland	1	14:24	Hunting	0-50	-	40	136	-	-	-
11/06/24	2	Unknown	Unknown	Improved grassland	1	14:31	Circling	20-50	-	-	275	-	-	-
11/06/24	2	Unknown	Unknown	Improved grassland	1	15:19	Soaring	0-180	-	10	30	134	284	-
11/06/24	8	Unknown	Adult	Improved grassland	1	15:38	Flying	20-50	-	-	50	-	-	-
11/06/24	8	Unknown	Adult	Improved grassland	2	15:38	Flying	50-100	-	-	-	15	-	-
11/06/24	2	Unknown	Unknown	Improved grassland	2	16:27	Flying	20-50	-	-	48	-	-	-
11/06/24	2	Unknown	Unknown	Improved grassland	1	17:46	Circling	50-180	-	-	-	140	335	-
12/06/24	6	Unknown	Unknown	Improved grassland	1	14:17	Soaring	50-180	-	-	-	50	186	-
12/06/24	7	Unknown	Unknown	Improved grassland	1	14:17	Mobbing	50-100	-	-	-	810	-	-
12/06/24	1	Unknown	Adult	Improved grassland	1	14:18	Hunting	20-100	-	-	70	50	-	-
12/06/24	1	Unknown	Unknown	Improved grassland	1	15:03	Flying	20-50	-	-	55	-	-	-
12/06/24	7	Unknown	Unknown	Improved grassland	1	15:09	Soaring	100-180	-	-	-	-	95	-
12/06/24	6	Unknown	Unknown	Improved grassland	2	15:11	Displaying	0-180	-	85	60	145	240	-
12/06/24	7	Unknown	Unknown	Improved grassland	3	15:25	-	-	-	-	-	-	-	-
12/06/24	6	Unknown	Unknown	River, improved grassland	2	15:50	Displaying	0-180	-	30	50	118	390	-
12/06/24	6	Unknown	Unknown	Improved grassland	2	16:39	Soaring	50-100	-	-	-	166	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
12/06/24	1	Unknown	Unknown	Improved grassland	2	16:41	Flying	100-180	-	-	-	-	210	-
12/06/24	1	Unknown	Unknown	Improved grassland	1	17:06	Flying	20-100	-	-	10	10	-	-
12/06/24	7	Unknown	Unknown	Improved grassland	1	18:00	Flying	20-50	-	-	25	-	-	-
12/06/24	1	Unknown	Unknown	Rough grassland	1	19:31	Flying	20-50	-	-	30	-	-	-
09/07/24	5	Unknown	Unknown	Improved grassland	1	10:06	Flying	0-20	-	7	-	-	-	-
10/07/24	7	Unknown	Unknown	Rough grassland	2	07:24	Flying	0-20	-	7	-	-	-	-
10/07/24	1	Unknown	Unknown	Improved grassland	1	12:22	Soaring	20-100	-	-	10	110	-	-
10/07/24	6	Unknown	Unknown	Improved grassland	1	12:50	Flying	20-50	-	-	30	-	-	-
07/08/24	7	Unknown	Adult	Improved grassland	1	09:20	Hunting	0-20	-	10	-	-	-	-
07/08/24	7	Unknown	Unknown	Improved grassland	2	10:30	Hunting	20-50	-	-	310	-	-	-
07/08/24	7	Unknown	Juvenile	Improved grassland	1	11:40	Hunting	0-20	-	46	-	-	-	-
07/08/24	7	Unknown	Adult	Improved grassland	1	12:06	Hunting	20-50	-	-	46	-	-	-
08/08/24	2	Unknown	Unknown	Rough grassland	1	10:54	Flying	20-100	-	-	10	110	-	-
08/08/24	8	Unknown	Unknown	Rough grassland	1	13:05	Flying	50-100	-	-	-	48	-	-

Table 54. VP survey flight activity results: cattle egret

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2023/34 non-breeding season														

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
15/11/23	8	Unknown	Unknown	Improved grassland	1	11:02	Flying	0-50	-	30	30	-	-	-
15/11/23	8	Unknown	Unknown	Improved grassland	1	14:06	Flying	0-50	-	30	30	-	-	-

Table 55. VP survey flight activity results: common gull

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2021/22 non-breeding season														
25/02/22	2	unknown	Unknown	Improved grassland	3	12:48	Flying	20-50	-	-	10	-	-	-
2022 breeding season														
20/04/22	2	Unknown	Unknown	Improved grassland	1	16:42	Flying	45	-	-	3	-	-	-
20/04/22	2	Unknown	Unknown	Improved grassland	1	16:46	Flying	40	-	-	2	-	-	-
20/04/22	2	Unknown	Unknown	Improved grassland	5	18:30	Flying	0-10	-	6	-	-	-	-
2022/23 non-breeding season														
17/01/23	2	Unknown	Immature	Rough grassland	7	15:55	Flying	50-100	-	-	-	60	-	-
17/01/23	2	Unknown	Unknown	Rough grassland	3	16:04	Flying	50-100	-	-	-	50	-	-
2023/24 non-breeding season														
10/01/24	8	Unknown	Adult	Pond	30	11:10	Circling	20-50	-	-	620	-	-	-
10/01/24	5	Unknown	Unknown	Improved grassland	28	11:29	Flying	20-50	-	-	117	-	-	-
12/12/23	2	Unknown	Unknown	Improved grassland	1	09:03	Flying	20-50	-	-	40	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
12/12/23	8	Unknown	Adult	Improved grassland	8	09:09	Flying	20-50	-	-	40	-	-	-
13/12/23	6	Unknown	Unknown	Improved grassland	3	11:40	Flying	50-100	-	-	-	104	-	-

Table 56. VP survey flight activity results: cormorant

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2020/21 non-breeding season														
23/10/20	2	Unknown	Unknown	Rough grassland	3	09:22	Flying	50	-	-	55	-	-	-
19/11/20	2	Unknown	Adult	Riverbanks, rough grassland	1	13:10	Flying	0-20	-	360	-	-	-	-
19/11/20	2	Unknown	Adult, immature	Riverbanks, rough grassland	2	15:20	Flying	0-20	-	180	-	-	-	-
22/03/21	2	Unknown	Adult	Rough & improved grassland, grassland moorland	2	11:50	Flying	60	-	-	-	38	-	-
2021 breeding season														
29/04/21	2	Unknown	Unknown	Rough grassland, improved grassland	2	16:40	Flying	20-50	-	-	48	-	-	-
02/06/21	1	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	2	17:13	Flying	30	-	-	54	-	-	-
17/07/21	2	Unknown	Unknown	Rough & improved grassland, scrub	2	08:50	Flying	40	-	-	30	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
21/07/21	2	Unknown	Unknown	Rough & improved grassland, scrub	1	10:50	Flying	30	-	-	40	-	-	-
17/08/21	2	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	1	18:56	Flying	40	-	-	35	-	-	-
20/09/21	2	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	3	09:48	Flying	80	-	-	-	54	-	-
2021/22 non-breeding season														
06/10/21	1	unknown	Unknown	Improved grassland	1	11:53	Flying	0-20	-	10	-	-	-	-
04/11/21	2	Unknown	Adult	River, improved grassland	1	10:25	Flying	20	-	5	-	-	-	-
04/11/21	2	Unknown	Adult	River, improved grassland	1	10:40	Flying	15	-	5	-	-	-	-
18/12/21	1	Unknown	Unknown	Improved grassland	6	15:30	Flying	20-50	-	-	110	-	-	-
23/12/21	2	Unknown	Adult	River, improved grassland	1	09:37	Flying	5-10	-	10	-	-	-	-
23/12/21	2	Unknown	Adult	River, improved grassland	1	09:49	Flying	5-10	-	5	-	-	-	-
23/12/21	2	Unknown	Adult	Improved grassland	1	13:45	Flying	1-15	-	10	-	-	-	-
23/01/22	2	Unknown	Adult	Improved grassland	1	09:45	Perched	-	600	-	-	-	-	-
23/01/22	2	Unknown	Adult	Improved grassland	1	10:15	Perched	-	3,600	-	-	-	-	-
23/01/22	2	Unknown	Adult	Improved grassland	1	11:35	Flying	0-20	-	10	-	-	-	-
23/01/22	2	Unknown	Adult	Improved grassland	1	12:20	Perched	0-20	600	5	-	-	-	-
23/01/22	2	Unknown	Adult	Improved grassland	1	14:58	Flying	0-20	-	5	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
21/02/22	2	Unknown	Unknown	Improved grassland	1	09:50	Flying	0-20	-	10	-	-	-	-
21/02/22	2	Unknown	Unknown	Improved grassland	2	10:15	Flying	0-20	9,000	5	-	-	-	-
21/02/22	2	Unknown	Unknown	Improved grassland	1	12:00	Flying	20-50	-	-	10	-	-	-
21/02/22	2	Unknown	Unknown	Improved grassland	2	12:50	Flying	0-20	2,700	5	-	-	-	-
2022 breeding season														
20/04/22	2	Unknown	Adult	River, improved grassland	1	14:43	Flying	20	-	25	-	-	-	-
24/05/22	2	Unknown	Adult	Rough grassland, improved grassland	1	11:25	Flying	20	-	25	-	-	-	-
19/08/22	4	Unknown	Adult	Improved grassland	1	10:44	Flying	45	-	-	17	-	-	-
23/09/22	1	Unknown	Adult	Improved grassland	1	09:40	Flying	60	-	-	-	25	-	-
23/09/22	2	Unknown	Adult	Improved grassland	1	10:04	Flying	15	-	50	-	-	-	-
23/09/22	2	Unknown	Adult	Improved grassland	1	10:34	Flying	15-20	-	45	-	-	-	-
23/09/22	2	Unknown	Adult	Improved grassland	1	11:39	Flying	20-25	-	75	-	-	-	-
23/09/22	2	Unknown	Adult	Improved grassland	1	14:32	Flying	25	-	-	67	-	-	-
23/09/22	6	Unknown	Adult	Rough grassland	2	11:43	Flying	10-20	-	15	-	-	-	-
23/09/22	7	Unknown	Adult	Rough grassland	1	10:46	Flying	20	-	25	-	-	-	-
2022/23 non-breeding season														
07/10/22	1	Unknown	Adult	Improved grassland	1	09:10	Flying	10-20	-	5	-	-	-	-
07/10/22	1	Unknown	Adult	Improved grassland	1	09:43	Flying	10-20	-	10	-	-	-	-
07/10/22	2	Unknown	Adult	River	1	14:28	Flying	5	-	300	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
07/10/22	8	Unknown	Unknown	Scrub (on telegraph pole)	5	10:40	Perched	-	600	-	-	-	-	-
07/10/22	6	Unknown	Adult	Improved grassland	1	09:35	Flying	35	-	-	20	-	-	-
07/10/22	6	Unknown	Adult	Improved grassland	1	11:13	Flying	40	-	-	35	-	-	-
07/10/22	6	Unknown	Adult	Improved grassland	1	14:25	Flying	50	-	-	-	50	-	-
07/10/22	7	Unknown	Adult	Improved grassland	1	09:54	Flying	20	-	4	-	-	-	-
07/10/22	7	Unknown	Adult	Improved grassland	1	14:25	Flying	10-20	-	10	-	-	-	-
04/11/22	1	Unknown	Unknown	River, rough grassland	1	09:10	Flying	0-20	-	50	-	-	-	-
04/11/22	1	Unknown	Unknown	Rough grassland	1	10:30	Flying	20-50	-	-	30	-	-	-
04/11/22	2	Unknown	Adult	Improved grassland	1	09:28	Flying	10-20	-	10	-	-	-	-
04/11/22	2	Unknown	Adult	Improved grassland	1	10:27	Flying	20-50	-	-	5	-	-	-
04/11/22	2	Unknown	Adult	Improved grassland	1	11:21	Flying	20-50	-	-	10	-	-	-
04/11/22	2	Unknown	Adult	Improved grassland	2	14:51	Flying	50-100	-	-	-	7	-	-
04/11/22	7	Unknown	Unknown	Rough grassland	1	09:58	Flying	15-20	-	20	-	-	-	-
04/11/22	7	Unknown	Unknown	Rough grassland	1	11:20	Flying	15-18	-	25	-	-	-	-
04/11/22	8	Unknown	Unknown	Improved grassland	1	12:42	Flying	10-30	-	10	10	-	-	-
04/11/22	8	Unknown	Unknown	Improved grassland	1	12:49	Flying	10-50	-	5	30	-	-	-
04/11/22	8	Unknown	Unknown	Improved grassland	1	13:00	Flying	30-50	-	-	30	-	-	-
07/12/22	2	Unknown	Unknown	River, improved grassland	1	09:04	Flying	20-50	-	-	110	-	-	-
07/12/22	2	Unknown	Unknown	River	1	13:12	Flying	20-50	-	-	40	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
07/12/22	7	Unknown	Unknown	Treeline	2	09:24	Flying	0-20	-	25	-	-	-	-
07/12/22	7	Unknown	Unknown	Treeline	1	09:26	Flying	0-20	-	20	-	-	-	-
07/12/22	8	Unknown	Unknown	Improved grassland	1	08:36	Flying	0-20	-	5	-	-	-	-
07/12/22	8	Unknown	Unknown	Improved grassland	1	09:01	Flying	0-20	-	6	-	-	-	-
07/12/22	8	Unknown	Unknown	Improved grassland	12	09:20	Flying	0-20	-	46	-	-	-	-
17/01/23	6	Unknown	Adult	Improved grassland	1	13:31	Flying	40	-	-	5	-	-	-
17/01/23	6	Unknown	Adult	Improved grassland	1	13:44	Flying	20-50	-	-	10	-	-	-
17/01/23	6	Unknown	Adult	Improved grassland	1	15:26	Flying	20-50	-	-	10	-	-	-
17/01/23	6	Unknown	Adult	Improved grassland	1	15:50	Flying	20-50	-	-	10	-	-	-
17/01/23	7	Unknown	Adult	Rough grassland	2	11:30	Flying	40	-	-	4	-	-	-
17/01/23	7	Unknown	Adult	River	1	15:54	Flying	15	-	3	-	-	-	-
17/01/23	8	Unknown	Unknown	Improved grassland	2	11:32	Flying	20-50	-	-	136	-	-	-
17/01/23	1	Unknown	Unknown	Improved grassland	1	12:06	Flying	20-50	-	-	31	-	-	-
17/01/23	1	Unknown	Unknown	Rough grassland, improved grassland	1	15:25	Flying	50-100	-	-	-	45	-	-
17/01/23	1	Unknown	Unknown	Rough grassland, improved grassland	1	15:48	Flying	20-50	-	-	120	-	-	-
17/01/23	2	Unknown	Immature	Rough grassland	2	11:32	Flying	20-50	-	-	34	-	-	-
17/01/23	2	Unknown	Adult	Rough grassland	5	11:44	Flying	20-50	-	-	20	-	-	-
17/01/23	2	Unknown	Unknown	Rough grassland	1	14:35	Flying	10-20	-	20	-	-	-	-
17/01/23	2	Unknown	Unknown	Rough grassland	11	16:12	Flying	20-50	-	-	25	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
17/01/23	5	Unknown	Unknown	River, improved grassland	1	11:50	Flying	0-20	-	10	-	-	-	-
17/01/23	5	Unknown	Unknown	River, improved grassland	1	13:15	Flying	0-20	-	50	-	-	-	-
17/01/23	5	Unknown	Unknown	Improved grassland	1	15:55	Flying	20-50	-	-	90	-	-	-
13/02/23	1	Unknown	Unknown	River, improved grassland	10	08:45	Flying	0-20	-	52	-	-	-	-
13/02/23	1	Unknown	Unknown	River, improved grassland	1	10:21	Flying	0-20	-	35	-	-	-	-
13/02/23	2	Unknown	Unknown	Improved grassland	2	08:25	Flying	0-20	-	-	85	-	-	-
13/02/23	2	Unknown	Unknown	Improved grassland	9	08:44	Flying	20-50	-	-	120	-	-	-
13/02/23	2	Unknown	Unknown	Improved grassland	2	08:44	Flying	20-50	-	-	30	-	-	-
13/02/23	2	Unknown	Unknown	River	1	11:04	Flying	0-20	-	18	-	-	-	-
13/02/23	2	Unknown	Unknown	River, improved grassland	1	11:25	Flying	0-20	-	15	-	-	-	-
13/02/23	5	Unknown	Unknown	Improved grassland	8	08:46	Flying	30-50	-	-	40	-	-	-
13/02/23	5	Unknown	Adult	Improved grassland	1	08:54	Flying	20-30	-	-	25	-	-	-
13/02/23	6	Unknown	Unknown	River, rough grassland	10	08:45	Flying	0-20	-	15	-	-	-	-
13/02/23	6	Unknown	Unknown	River, rough grassland	1	12:31	Flying	0-20	-	25	-	-	-	-
13/02/23	6	Unknown	Unknown	River	1	13:01	Flying	0-20	-	10	-	-	-	-
13/02/23	6	Unknown	Unknown	River	3	13:05	Perched, flying	0-20	-	10	-	-	-	-
13/02/23	7	Unknown	Adult	Improved grassland	1	11:06	Flying	0-20	-	5	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13/02/23	7	Unknown	Adult	Improved grassland	1	11:19	Flying	20-50	-	-	6	-	-	-
13/02/23	8	Unknown	Adult	Improved grassland	1	08:44	Flying	50-60	-	-	-	40	-	-
13/03/23	1	Unknown	Adult	Rough grassland	1	12:54	Flying	25	-	-	10	-	-	-
2023 breeding season														
13/04/23	7	Unknown	Unknown	River	1	14:46	Flying	0-20	-	30	-	-	-	-
13/04/23	1	Unknown	Adult	Rough grassland	1	14:47	Flying	20-50	-	-	25	-	-	-
13/04/23	7	Unknown	Unknown	River	1	15:02	Flying	0-20	-	24	-	-	-	-
13/04/23	6	Unknown	Adult	Rough grassland	1	16:40	Flying	0-20	-	44	-	-	-	-
13/04/23	1	Unknown	Adult	Improved grassland	1	16:54	Flying	20-50	-	-	14	-	-	-
13/04/23	7	Unknown	Unknown	Rough grassland	1	18:00	Flying	0-20	-	15	-	-	-	-
13/04/23	8	Unknown	Adult	Improved grassland	1	18:25	Flying	0-50	-	25	5	-	-	-
13/04/23	6	Unknown	Adult	Rough grassland	1	18:30	Flying	0-20	-	42	-	-	-	-
13/04/23	8	Unknown	Adult	Improved grassland	1	18:31	Flying	0-20	-	20	-	-	-	-
13/04/23	6	Unknown	Adult	Rough grassland	1	19:24	Flying	0-20	-	30	-	-	-	-
13/04/23	2	Unknown	Adult	Rough grassland	3	20:00	Flying	20-50	-	-	10	-	-	-
13/04/23	8	Unknown	Adult	Improved grassland	3	20:01	Flying	0-50	-	29	29	-	-	-
09/05/23	7	Unknown	Unknown	River	2	06:44	Flying	0-20	-	58	-	-	-	-
09/05/23	6	Unknown	Adult	Improved grassland	1	07:08	Flying	20-50	-	-	10	-	-	-
09/05/23	8	Unknown	Unknown	Lake	1	07:10	Flying	20-50	-	-	90	-	-	-
09/05/23	8	Unknown	Unknown	Lake	3	07:11	Flying	20-50	-	-	103	-	-	-
09/05/23	7	Unknown	Unknown	River	1	07:16	Flying	0-20	-	50	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
09/05/23	7	Unknown	Unknown	River	1	07:29	Flying	0-20	-	38	-	-	-	-
09/05/23	6	Unknown	Unknown	Improved grassland	2	07:44	Flying	20-50	-	-	5	-	-	-
09/05/23	7	Unknown	Unknown	River	1	07:58	Flying	0-20	-	35	-	-	-	-
09/05/23	7	Unknown	Unknown	River	1	08:21	Flying	0-20	-	43	-	-	-	-
09/05/23	5	Unknown	Unknown	Improved grassland	1	08:29	Flying	20-50	-	-	40	-	-	-
09/05/23	8	Unknown	Unknown	Lake	1	08:30	Flying	20-50	-	-	132	-	-	-
09/05/23	6	Unknown	Unknown	Improved grassland	1	08:31	Flying	20-50	-	-	7	-	-	-
09/05/23	7	Unknown	Unknown	River	1	08:31	Flying	0-20	-	40	-	-	-	-
09/05/23	2	Unknown	Unknown	Rough grassland	1	09:06	Flying	20-50	-	-	18	-	-	-
09/05/23	8	Unknown	Unknown	Improved grassland	2	09:06	Flying	0-20	-	135	-	-	-	-
09/05/23	6	Unknown	Unknown	Improved grassland	1	10:06	Flying	20-50	-	-	5	-	-	-
09/05/23	1	Unknown	Unknown	Rough grassland	1	10:18	Flying	20-50	-	-	29	-	-	-
09/05/23	6	Unknown	Juvenile	Improved grassland	1	10:55	Flying	20-50	-	-	8	-	-	-
09/05/23	1	Unknown	Unknown	Rough grassland	1	12:00	Flying	0-50	-	30	28	-	-	-
09/05/23	1	Unknown	Unknown	Rough grassland	1	12:57	Flying	50-180	-	-	-	25	15	-
13/06/23	7	Unknown	Unknown	Rough grassland	3	09:00	Flying	20-50	-	-	40	-	-	-
13/06/23	2	Unknown	Unknown	Improved grassland	3	09:04	Flying	20-50	-	-	20	-	-	-
13/06/23	7	Unknown	Unknown	Rough grassland	1	11:22	Flying	20-50	-	-	15	-	-	-
13/07/23	1	Unknown	Unknown	River	1	07:15	Flying	0-20	-	25	-	-	-	-
13/07/23	8	Unknown	Unknown	Improved grassland	1	08:49	Flying	20-50	-	-	70	-	-	-
13/07/23	2	Unknown	Unknown	Improved grassland	1	08:53	Flying	20-50	-	-	151	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13/07/23	1	Unknown	Unknown	River	1	08:55	Flying	20-50	-	-	55	-	-	-
13/07/23	5	Unknown	Unknown	Improved grassland	1	08:56	Flying	50-100	-	-	28	6	-	-
13/07/23	2	Unknown	Unknown	Improved grassland	3	10:15	Flying	0-20	-	62	-	-	-	-
13/07/23	8	Unknown	Unknown	Improved grassland	3	10:15	Flying	0-20	-	45	-	-	-	-
13/07/23	1	Unknown	Unknown	River	1	10:26	Flying	20-50	-	-	52	-	-	-
13/07/23	6	Unknown	Unknown	Improved grassland	1	10:35	Flying	20-50	-	-	85	-	-	-
13/07/23	7	Unknown	Unknown	River	1	11:04	Flying	0-20	-	230	-	-	-	-
13/07/23	7	Unknown	Unknown	River	1	11:30	Flying	0-20	-	70	-	-	-	-
13/07/23	2	Unknown	Unknown	River	1	11:32	Flying	20-50	-	-	74	-	-	-
13/07/23	8	Unknown	Unknown	Improved grassland	1	11:34	Flying	0-20	-	40	-	-	-	-
10/08/23	8	Unknown	Unknown	Rough grassland	1	07:52	Flying	0-50	-	10	60	-	-	-
10/08/23	1	Unknown	Unknown	Improved grassland	2	08:21	Flying	20-50	-	-	50	-	-	-
10/08/23	5	Unknown	Unknown	River	2	08:23	Flying	0-50	-	20	35	-	-	-
10/08/23	8	Unknown	Unknown	Lagoons	1	08:39	Flying	0-20	-	50	-	-	-	-
10/08/23	8	Unknown	Unknown	Lagoons	1	13:25	Flying	0-20	-	10	-	-	-	-
14/09/23	2	Unknown	Unknown	Improved grassland	1	08:35	Flying	20-50	-	-	65	-	-	-
14/09/23	8	Unknown	Unknown	Rough grassland	1	09:15	Flying	20-50	-	-	17	-	-	-
14/09/23	7	Unknown	Unknown	River	1	09:16	Flying	0-20	-	20	-	-	-	-
14/09/23	6	Unknown	Unknown	Improved grassland	1	10:05	Flying	20-50	-	-	63	-	-	-
14/09/23	8	Unknown	Unknown	Improved grassland	1	10:07	Flying	20-50	-	-	130	-	-	-
14/09/23	8	Unknown	Unknown	Improved grassland	5	10:23	Flying	20-50	-	-	20	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
14/09/23	7	Unknown	Unknown	River	4	10:26	Flying	0-20	-	58	-	-	-	-
14/09/23	8	Unknown	Unknown	Improved grassland	1	10:31	Flying	20-50	-	-	15	-	-	-
14/09/23	7	Unknown	Unknown	Rough grassland	1	11:51	Flying	0-20	-	44	-	-	-	-
14/09/23	7	Unknown	Unknown	River	1	12:33	Flying	0-20	-	42	-	-	-	-
14/09/23	2	Unknown	Unknown	Improved grassland	1	12:36	Flying	0-20	-	20	-	-	-	-
14/09/23	7	Unknown	Unknown	River	1	13:03	Flying	20-50	-	-	35	-	-	-
14/09/23	6	Unknown	Unknown	River	1	13:49	Flying	0-20	-	10	-	-	-	-
2023/24 non-breeding season														
10/10/23	8	Unknown	Unknown	Improved grassland	4	07:55	Flying	0-20	-	85	-	-	-	-
10/10/23	8	Unknown	Unknown	Improved grassland	7	08:00	Flying	0-20	-	40	-	-	-	-
10/10/23	8	Unknown	Unknown	Improved grassland	3	08:25	Flying	0-20	-	35	-	-	-	-
10/10/23	8	Unknown	Unknown	Improved grassland	1	13:44	Flying	20-50	-	-	93	-	-	-
11/10/23	2	Unknown	Unknown	Improved grassland	2	09:23	Flying	20-50	-	-	8	-	-	-
11/10/23	6	Unknown	Unknown	Improved grassland	5	09:57	Flying	0-20	-	30	-	-	-	-
11/10/23	6	Unknown	Unknown	Improved grassland	1	10:07	Flying	0-20	-	10	-	-	-	-
14/11/23	2	Unknown	Unknown	Improved grassland	1	11:04	Flying	0-20	-	16	-	-	-	-
14/11/23	2	Unknown	Unknown	Improved grassland	1	11:14	Flying	0-20	-	28	-	-	-	-
14/11/23	7	Unknown	Adult	Improved grassland	1	13:50	Flying	0-20	-	15	-	-	-	-
14/11/23	7	Unknown	Adult	Improved grassland	1	14:15	Flying	0-20	-	20	-	-	-	-
14/11/23	7	Unknown	Adult	Improved grassland	1	15:43	Flying	0-20	-	20	-	-	-	-
14/11/23	1	Unknown	Unknown	Rough grassland	1	16:11	Flying	0-20	-	55	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
14/11/23	2	Unknown	Unknown	Improved grassland	1	16:46	Flying	0-20	-	26	-	-	-	-
14/11/23	7	Unknown	Adult	Improved grassland	6	16:50	Flying	0-20	-	15	-	-	-	-
15/11/23	6	Unknown	Unknown	River	1	10:54	Flying	20-50	-	-	30	-	-	-
15/11/23	6	Unknown	Unknown	River	1	11:33	Flying	20-50	-	-	25	-	-	-
15/11/23	8	Unknown	Unknown	Improved grassland	1	12:49	Flying	20-50	-	-	60	-	-	-
15/11/23	5	Unknown	Unknown	Improved grassland	1	14:05	Flying	20-50	-	-	5	-	-	-
15/11/23	6	Unknown	Unknown	River	1	14:48	Flying	20-50	-	-	30	-	-	-
15/11/23	6	Unknown	Unknown	River	1	16:11	Flying	20-50	-	-	20	-	-	-
12/12/23	8	Unknown	Unknown	Improved grassland	1	08:30	Flying	20-50	-	-	40	-	-	-
12/12/23	8	Unknown	Unknown	Improved grassland	1	08:30	Flying	20-50	-	-	20	-	-	-
12/12/23	2	Unknown	Unknown	River	2	08:31	Flying	20-50	-	-	32	-	-	-
12/12/23	8	Unknown	Unknown	Improved grassland	1	09:11	Flying	20-50	-	-	20	-	-	-
12/12/23	5	Unknown	Unknown	Improved grassland	1	09:14	Flying	20-50	-	-	27	-	-	-
12/12/23	5	Unknown	Unknown	Improved grassland	1	09:18	Flying	20-50	-	-	21	-	-	-
12/12/23	5	Unknown	Unknown	Improved grassland	3	09:33	Flying	20-50	-	-	28	-	-	-
12/12/23	2	Unknown	Unknown	Improved grassland	1	09:36	Flying	0-20	-	44	-	-	-	-
12/12/23	2	Unknown	Unknown	River	1	09:53	Flying	0-20	-	45	-	-	-	-
12/12/23	8	Unknown	Unknown	Improved grassland	1	12:33	Flying	0-20	-	15	-	-	-	-
12/12/23	2	Unknown	Unknown	Improved grassland	1	12:42	Flying	0-20	-	40	-	-	-	-
12/12/23	5	Unknown	Unknown	Improved grassland	1	13:46	Flying	20-50	-	-	32	-	-	-
13/12/23	7	Unknown	Unknown	Improved grassland	1	08:22	Flying	0-20	-	30	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13/12/23	6	Unknown	Unknown	River	1	08:27	Flying	0-20	-	25	-	-	-	-
13/12/23	7	Unknown	Unknown	Improved grassland	1	08:47	Flying	0-20	-	50	-	-	-	-
13/12/23	1	Unknown	Unknown	Rough grassland	1	09:26	Flying	0-20	-	15	-	-	-	-
13/12/23	7	Unknown	Unknown	Improved grassland	1	10:00	Flying	0-20	-	20	-	-	-	-
13/12/23	1	Unknown	Unknown	Rough grassland	1	10:45	Flying	0-20	-	12	-	-	-	-
13/12/23	7	Unknown	Unknown	Improved grassland	1	13:29	Flying	20-50	-	-	30	-	-	-
10/01/24	2	Unknown	Unknown	River	1	11:07	Flying	0-20	-	33	-	-	-	-
10/01/24	8	Unknown	Adult	Pond	1	14:34	Flying	20-50	-	-	20	-	-	-
10/01/24	2	Unknown	Unknown	Improved grassland	1	14:42	Flying	20-50	-	-	67	-	-	-
10/01/24	8	Unknown	Adult	Improved grassland	1	15:24	Flying	20-50	-	-	40	-	-	-
10/01/24	2	Unknown	Unknown	Improved grassland	2	15:25	Flying	0-20	-	114	-	-	-	-
10/01/24	2	Unknown	Unknown	Improved grassland	1	16:09	Flying	20-50	-	-	52	-	-	-
10/01/24	5	Unknown	Unknown	Improved grassland	1	16:11	Flying	0-20	-	24	-	-	-	-
10/01/24	5	Unknown	Unknown	Improved grassland	1	16:28	Flying	0-20	-	48	-	-	-	-
11/01/24	7	Unknown	Adult	Improved grassland	1	12:01	Flying	0-20	-	40	-	-	-	-
11/01/24	7	Unknown	Adult	Improved grassland	1	12:02	Flying	50-100	-	-	-	30	-	-
11/01/24	7	Unknown	Adult	Improved grassland	1	12:39	Flying	20-50	-	-	20	-	-	-
11/01/24	1	Unknown	Unknown	Rough grassland	1	13:32	Flying	20-100	-	-	35	41	-	-
11/01/24	1	Unknown	Unknown	Improved grassland	2	15:51	Flying	20-50	-	-	29	-	-	-
11/01/24	7	Unknown	Adult	Improved grassland	1	16:16	Flying	20-50	-	-	25	-	-	-
11/01/24	1	Unknown	Unknown	Rough grassland	2	16:19	Flying	20-50	-	-	57	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
15/02/24	8	Unknown	Unknown	Improved grassland	5	08:23	Flying	0-20	-	62	-	-	-	-
15/02/24	5	Unknown	Unknown	Improved grassland	1	08:30	Flying	20-50	-	-	45	-	-	-
15/02/24	2	Unknown	Unknown	Improved grassland	1	08:35	Flying	0-20	-	18	-	-	-	-
15/02/24	5	Unknown	Unknown	Improved grassland	1	09:06	Flying	20-50	-	-	15	-	-	-
15/02/24	2	Unknown	Unknown	Improved grassland	1	09:10	Flying	20-50	-	-	186	-	-	-
15/02/24	2	Unknown	Unknown	Improved grassland	1	09:36	Flying	20-50	-	-	20	-	-	-
15/02/24	8	Unknown	Unknown	Improved grassland	1	11:10	Flying	0-20	-	77	-	-	-	-
15/02/24	2	Unknown	Unknown	Improved grassland	1	11:15	Flying	0-20	-	20	-	-	-	-
15/02/24	2	Unknown	Unknown	Improved grassland	1	12:46	Flying	0-20	-	21	-	-	-	-
15/02/24	2	Unknown	Unknown	Improved grassland	1	12:49	Flying	0-20	-	25	-	-	-	-
15/02/24	2	Unknown	Unknown	Improved grassland	1	13:24	Flying	0-20	-	32	-	-	-	-
15/02/24	8	Unknown	Unknown	Pond	1	13:25	Flying	0-20	-	74	-	-	-	-
19/02/24	7	Unknown	Unknown	Rough grassland	3	07:59	Flying	0-20	-	13	-	-	-	-
19/02/24	7	Unknown	Unknown	Rough grassland	2	08:45	Flying	50-100	-	-	-	10	-	-
19/02/24	1	Unknown	Unknown	Rough grassland	3	08:46	Flying	100-180	-	-	-	-	92	-
19/02/24	7	Unknown	Unknown	Improved grassland	1	12:10	Flying	20-50	-	-	7	-	-	-
19/02/24	7	Unknown	Unknown	Rough grassland	1	12:44	Flying	0-20	-	10	-	-	-	-
19/02/24	7	Unknown	Unknown	Rough grassland	1	13:47	Flying	20-50	-	-	20	-	-	-
14/03/24	2	Unknown	Unknown	Improved grassland	2	12:08	Flying	0-20	-	28	-	-	-	-
14/03/24	2	Unknown	Unknown	River	1	12:59	Flying	0-20	-	38	-	-	-	-
14/03/24	8	Unknown	Unknown	Improved grassland	1	13:24	Flying	0-20	-	80	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
14/03/24	2	Unknown	Unknown	River	1	13:48	Flying	0-20	-	50	-	-	-	-
14/03/24	8	Unknown	Unknown	Improved grassland	1	16:18	Flying	20-50	-	-	40	-	-	-
14/03/24	8	Unknown	Unknown	Improved grassland	1	17:37	Flying	20-50	-	-	40	-	-	-
18/03/24	7	Unknown	Unknown	Improved grassland	4	12:19	Flying	20-50	-	-	50	-	-	-
18/03/24	7	Unknown	Unknown	Improved grassland	1	15:49	Flying	20-50	-	-	35	-	-	-
18/03/24	7	Unknown	Unknown	Improved grassland	2	17:12	Flying	0-20	-	20	-	-	-	-
2024 breeding season														
08/04/24	8	Unknown	Unknown	River	3	07:43	Flying	0-20	-	50	-	-	-	-
08/04/24	2	Unknown	Adult	Improved grassland	4	08:05	Flying	20-50	-	-	44	-	-	-
08/04/24	2	Unknown	Unknown	Improved grassland	1	09:23	Flying	20-50	-	-	97	-	-	-
08/04/24	2	Unknown	Unknown	Improved grassland	1	09:24	Flying	20-50	-	-	12	-	-	-
08/04/24	2	Unknown	Unknown	Improved grassland	1	12:26	Flying	0-20	-	21	-	-	-	-
11/04/24	7	Unknown	Unknown	Improved grassland	1	09:01	Flying	20-50	-	-	8	-	-	-
11/04/24	1	Unknown	Unknown	Improved grassland	1	09:55	Flying	20-50	-	-	35	-	-	-
11/04/24	6	Unknown	Unknown	Rough grassland	1	10:03	Flying	20-50	-	-	20	-	-	-
09/05/24	8	Unknown	Unknown	Improved grassland	1	07:01	Flying	0-20	-	46	-	-	-	-
09/05/24	2	Unknown	Unknown	River	1	07:04	Flying	20-50	-	-	50	-	-	-
09/05/24	2	Unknown	Unknown	River	1	08:05	Flying	0-20	-	35	-	-	-	-
09/05/24	5	Unknown	Unknown	Improved grassland	1	09:24	Flying	20-50	-	-	73	-	-	-
09/05/24	5	Unknown	Unknown	Improved grassland	1	12:51	Flying	0-20	-	80	-	-	-	-
14/05/24	7	Unknown	Unknown	Improved grassland	1	07:15	Flying	0-20	-	3	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
14/05/24	6	Unknown	Unknown	Improved grassland	1	08:59	Flying	20-50	-	-	50	-	-	-
14/05/24	1	Unknown	Unknown	River	1	11:52	Flying	0-20	-	54	-	-	-	-
11/06/24	8	Unknown	Unknown	Improved grassland	2	15:26	Flying	50-100	-	-	-	120	-	-
11/06/24	8	Unknown	Unknown	Improved grassland	1	16:49	Flying	20-50	-	-	90	-	-	-
12/06/24	6	Unknown	Unknown	Improved grassland	2	19:25	Flying	20-50	-	-	50	-	-	-
12/06/24	7	Unknown	Unknown	Improved grassland	1	19:25	Flying	20-50	-	-	40	-	-	-
12/06/24	7	Unknown	Unknown	Improved grassland	1	19:27	Flying	0-20	-	10	-	-	-	-
09/07/24	5	Unknown	Unknown	Improved grassland	2	06:58	Flying	50-100	-	-	-	6	-	-
09/07/24	8	Unknown	Unknown	Improved grassland	1	09:23	Flying	20-50	-	-	42	-	-	-
09/07/24	2	Unknown	Unknown	Improved grassland	1	09:47	Flying	20-50	-	-	15	-	-	-
09/07/24	8	Unknown	Unknown	Improved grassland	1	10:55	Flying	0-50	-	56	8	-	-	-
09/07/24	2	Unknown	Unknown	Improved grassland	2	11:14	Flying	20-50	-	-	29	-	-	-
09/07/24	2	Unknown	Unknown	Improved grassland	1	11:15	Flying	20-50	-	-	28	-	-	-
09/07/24	2	Unknown	Unknown	Improved grassland	1	11:37	Flying	0-20	-	22	-	-	-	-
10/07/24	7	Unknown	Unknown	Rough grassland	1	07:03	Flying	20-50	-	-	8	-	-	-
10/07/24	6	Unknown	Unknown	Improved grassland	1	07:07	Flying	20-50	-	-	38	-	-	-
10/07/24	7	Unknown	Unknown	Rough grassland	2	09:25	Flying	20-50	-	-	8	-	-	-
10/07/24	1	Unknown	Unknown	Rough grassland	1	09:36	Flying	20-50	-	-	49	-	-	-
10/07/24	6	Unknown	Unknown	Improved grassland	2	09:37	Flying	20-50	-	-	130	-	-	-
10/07/24	7	Unknown	Unknown	Rough grassland	3	11:19	Flying	50-100	-	-	-	8	-	-
10/07/24	6	Unknown	Unknown	Improved grassland	1	12:27	Flying	0-20	-	32	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
07/08/24	6	Unknown	Unknown	Improved grassland	1	08:30	Flying	0-20	-	5	-	-	-	-
07/08/24	7	Unknown	Unknown	Improved grassland	1	08:54	Flying	20-50	-	-	28	-	-	-
07/08/24	1	Unknown	Unknown	Improved grassland	1	08:55	Flying	0-20	-	20	-	-	-	-
07/08/24	6	Unknown	Unknown	Improved grassland	2	09:00	Flying	0-20	-	4	-	-	-	-
07/08/24	7	Unknown	Unknown	Improved grassland	1	09:04	Flying	0-20	-	14	-	-	-	-
07/08/24	6	Unknown	Unknown	Improved grassland	1	09:06	Flying	0-20	-	7	-	-	-	-
07/08/24	6	Unknown	Unknown	Improved grassland	2	10:44	Flying	0-20	-	5	-	-	-	-
07/08/24	7	Unknown	Unknown	Improved grassland	1	11:20	Flying	20-50	-	-	24	-	-	-
07/08/24	1	Unknown	Unknown	River	2	12:24	Flying	0-20	-	25	-	-	-	-
07/08/24	6	Unknown	Unknown	Improved grassland	3	13:45	Flying	0-20	-	6	-	-	-	-
08/08/24	8	Unknown	Unknown	Improved grassland	1	07:35	Flying	0-20	-	75	-	-	-	-
08/08/24	2	Unknown	Unknown	Scrub	1	09:28	Flying	20-50	-	-	22	-	-	-
08/08/24	5	Unknown	Unknown	Improved grassland	1	09:40	Flying	20-50	-	-	6	-	-	-
08/08/24	8	Unknown	Unknown	Rough grassland	1	10:11	Flying	0-20	-	54	-	-	-	-
08/08/24	2	Unknown	Unknown	Rough grassland	1	10:13	Flying	0-50	-	10	15	-	-	-
06/09/24	5	Unknown	Unknown	Improved grassland	1	07:29	Flying	20-50	-	-	12	-	-	-
06/09/24	8	Unknown	Unknown	Pond	14	08:53	Flying	0-20	-	135	-	-	-	-
06/09/24	8	Unknown	Unknown	River	3	08:58	Flying	0-20	-	73	-	-	-	-
06/09/24	2	Unknown	Unknown	Rough grassland	1	09:22	Flying	0-50	-	9	10	-	-	-
06/09/24	2	Unknown	Unknown	Rough grassland	1	09:26	Flying	20-100	-	-	15	22	-	-
06/09/24	2	Unknown	Unknown	Improved grassland	1	10:27	Flying	20-50	-	-	18	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
06/09/24	8	Unknown	Unknown	River	1	11:25	Flying	20-50	-	-	52	-	-	-
06/09/24	5	Unknown	Unknown	Improved grassland	3	11:29	Flying	20-50	-	-	11	-	-	-
06/09/24	8	Unknown	Unknown	Improved grassland	1	12:15	Flying	0-20	-	57	-	-	-	-
09/09/24	1	Unknown	Unknown	Rough grassland	1	08:56	Flying	0-20	-	43	-	-	-	-
09/09/24	7	Unknown	Unknown	River	3	08:58	Flying	0-20	-	73	-	-	-	-
09/09/24	7	Unknown	Unknown	Scrub	3	09:20	Flying	20-50	-	-	10	-	-	-
09/09/24	7	Unknown	Unknown	Scrub	10	09:21	Flying	20-50	-	-	8	-	-	-
09/09/24	6	Unknown	Unknown	Improved grassland	1	10:38	Flying	20-50	-	-	6	-	-	-
09/09/24	1	Unknown	Unknown	River	1	11:02	Flying	0-50	-	25	42	-	-	-
09/09/24	1	Unknown	Unknown	Rough grassland	1	11:04	Flying	20-50	-	-	53	-	-	-
09/09/24	6	Unknown	Juvenile	Improved grassland	1	11:10	Flying	20-50	-	-	5	-	-	-
09/09/24	7	Unknown	Unknown	River	1	11:25	Flying	20-50	-	-	52	-	-	-
09/09/24	6	Unknown	Juvenile	Improved grassland	1	11:33	Flying	20-50	-	-	8	-	-	-
09/09/24	6	Unknown	Juvenile	Improved grassland	1	11:39	Flying	20-50	-	-	6	-	-	-
09/09/24	7	Unknown	Unknown	Scrub	1	12:45	Flying	0-20	-	57	-	-	-	-
09/09/24	6	Unknown	Unknown	Improved grassland	1	12:59	Flying	20-50	-	-	6	-	-	-

Table 57. VP survey flight activity results: curlew

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2020/21 non-breeding season														
23/10/20	2	Unknown	Unknown	-	5	10:50	Flying	50	-	-	48	-	-	-
2023 breeding season														
13/07/23	8	Unknown	Adult	Pond	1	08:43	Flying	0-20	-	15	-	-	-	-
13/07/23	2	Unknown	Unknown	Improved grassland	1	08:47	Flying	50-180	-	-	-	45	117	-
2023/24 non-breeding season														
15/02/24	5	Unknown	Unknown	Rough grassland	1	10:01	Flying	0-20	-	22	-	-	-	-

Table 58. VP survey flight activity results: gadwall

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2023 breeding season														
14/09/23	8	1 male/1 female	Adult	Rough grassland	2	11:00	Flying	0-20	-	12	-	-	-	-

Table 59. VP survey flight activity results: golden plover

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2020/21 non-breeding season														
18/02/21	2	Mixed flock	Adult	-	42	11:28	Circling, flying	150-200	-	-	-	-	180	-
2022 breeding season														
23/09/22	2	Unknown	Adult	Improved grassland	2	11:32	Flying	30	-	-	14	-	-	-
2022/23 non-breeding season														
07/10/22	1	Unknown	Unknown	Improved grassland	26	14:25	Flying	50-80	-	-	-	10	-	-
07/10/22	8	Unknown	Unknown	Improved grassland	16	13:50	Flying	80	-	-	-	90	-	-
07/10/22	8	Unknown	Unknown	Rough grassland, improved grassland	32	13:57	Flying, circling	1-50	-	50	150	-	-	-
07/10/22	5	Unknown	Unknown	Improved grassland	4	15:19	Flying	150	-	-	-	-	44	-
07/10/22	6	Unknown	Adult	Improved grassland	8	13:52	Flying	40	-	-	10	-	-	-
07/10/22	6	Unknown	Adult	Rough grassland, improved grassland	34	13:55	Flying	50	-	-	-	360	-	-
07/10/22	6	Unknown	Adult	Improved grassland	29	14:21	Flying	100	-	-	-	-	120	
04/11/22	8	Unknown	Unknown	Bog	47	09:30	Flying	80-100	-	-	-	160	-	-
2023 breeding season														
14/09/23	8	Unknown	Unknown	Improved grassland	1	07:35	Flying	20-50	-	-	17	-	-	-
14/09/23	8	Unknown	Unknown	Improved grassland	6	08:35	Flying	20-50	-	-	25	-	-	-
14/09/23	8	Unknown	Unknown	Improved grassland	3	09:26	Flying	0-20	-	10	-	-	-	-
2023/24 non-breeding season														

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
10/10/23	8	Unknown	Unknown	Improved grassland	14	09:06	Flying	0-50	-	20	30	-	-	-
10/10/23	1	Unknown	Unknown	Improved grassland	12	11:27	Flying	0-20	-	7	-	-	-	-
11/10/23	6	Unknown	Unknown	Improved grassland	6	09:17	Flying	20-50	-	-	40	-	-	-
11/10/23	5	Unknown	Adult	Improved grassland	1	12:13	Flying	20-50	-	-	25	-	-	-
11/10/23	5	Unknown	Adult	Improved grassland	1	12:26	Flying	20-50	-	-	20	-	-	-
10/01/24	8	Unknown	Adult	Improved grassland	1	11:01	Flying	20-50	-	-	15	-	-	-
10/01/24	8	Unknown	Adult	Improved grassland	3	11:38	Flying	0-20	-	20	-	-	-	-
18/03/24	7	Unknown	Unknown	Improved grassland	4	14:35	Flying	0-20	-	1,500	-	-	-	-

Table 60. VP survey flight activity results: great black-backed gull

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2021/22 non-breeding season														
23/01/22	2	Unknown	Adult	Improved grassland	1	11:45	Flying	50-100	-	-	-	60	-	-
28/02/22	1	Unknown	Unknown	Improved grassland	2	15:29	Flying, soaring, circling	100-180	-	-	-	-	30	-
2023 breeding season														
10/08/23	1	Unknown	Adult	Improved grassland	1	10:48	Flying	20-50	-	-	40	-	-	-

Table 61. VP survey flight activity results: grey heron

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2020/21 non-breeding season														
19/03/21	3	Unknown	Adult	Improved grassland	2	08:29	Flying	20-30	-	-	60	-	-	-
2021 breeding season														
28/04/21	3	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	2	18:55	Flying	40	-	-	64	-	-	-
29/04/21	2	Unknown	Unknown	Rough grassland, improved grassland	1	16:35	Flying	40	-	-	55	-	-	-
02/06/21	2	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	1	21:38	Flying	30	-	-	45	-	-	-
13/07/21	2	Unknown	Unknown	Rough & improved grassland, scrub	1	09:58	Flying	30	-	-	54	-	-	-
15/09/21	2	Unknown	Unknown	Rough & improved grassland, grassland moorland, 2 nd rotation forest	1	12:47	Flying	30	-	-	45	-	-	-
2021/22 non-breeding season														
29/03/22	2	Unknown	Unknown	River	1	10:35	Flying	15	-	10	-	-	-	-
2022 breeding season														
20/04/22	2	Unknown	Unknown	River	1	14:36	Flying	1	-	1	-	-	-	-
20/04/22	2	Unknown	Juvenile	River	1	14:39	Flying	1-2	-	5	-	-	-	-
20/04/22	2	Unknown	Juvenile	River, improved grassland, trees	1	14:43	Flying	0-20	-	34	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
20/04/22	2	Unknown	Adult	Improved grassland	1	14:46	Flying	1	-	8	-	-	-	-
20/04/22	2	Unknown	Adult	Improved grassland	1	15:07	Flying	3	-	3	-	-	-	-
20/04/22	2	Unknown	Adult	Improved grassland	1	16:36	flying	4	-	5	-	-	-	-
20/04/22	2	Unknown	Adult	Improved grassland	1	17:12	flying	30	-	-	2	-	-	-
23/09/22	2	Unknown	Adult	Improved grassland	1	10:44	Flying	5	-	28	-	-	-	-
2022/23 non-breeding season														
13/02/23	1	Unknown	Unknown	Improved grassland	1	11:29	Flying	0-20	-	38	-	-	-	-
13/02/23	6	Unknown	Unknown	Improved grassland	1	12:18	Flying	20-50	-	-	30	-	-	-
13/02/23	7	Unknown	Unknown	Improved grassland	1	08:44	Flying	0-20	-	5	-	-	-	-
13/02/23	7	Female	Adult	Improved grassland	2	12:01	Flying	0-20	-	7	-	-	-	-
13/02/23	8	Unknown	Adult	Rough grassland	1	11:20	Flying	40	-	-	12	-	-	-
2023 breeding season														
13/04/23	2	Unknown	Adult	Rough grassland	1	15:03	Flying	0-20	-	12	-	-	-	-
13/04/23	7	Unknown	Unknown	Rough grassland	1	15:23	Flying	0-20	-	5	-	-	-	-
13/04/23	8	Unknown	Unknown	Improved grassland	1	16:03	Flying	0-20	-	20	-	-	-	-
09/05/23	7	Unknown	Unknown	River	2	06:44	Flying	0-20	-	58	-	-	-	-
09/05/23	5	Unknown	Unknown	Improved grassland	1	07:57	Flying	50-100	-	-	-	70	-	-
09/05/23	2	Unknown	Unknown	Rough grassland	1	08:22	Flying	0-20	-	10	-	-	-	-
09/05/23	8	Unknown	Unknown	Improved grassland	1	08:25	Flying	20-50	-	-	59	-	-	-
09/05/23	6	Unknown	Unknown	Improved grassland	1	08:26	Flying	20-50	-	-	5	-	-	-
13/06/23	8	Unknown	Unknown	Improved grassland	1	07:25	Flying	0-20	-	52	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13/06/23	7	Unknown	Unknown	Rough grassland	1	10:30	Flying	0-20	-	50	-	-	-	-
13/06/23	2	Unknown	Unknown	Scrub	1	11:57	Flying	0-20	-	45	-	-	-	-
13/06/23	2	Unknown	Unknown	Scrub	1	13:51	Flying	0-50	-	10	15	-	-	-
13/07/23	8	Unknown	Unknown	Pond	1	07:44	Flying	0-20	-	10	-	-	-	-
13/07/23	7	Unknown	Unknown	River	1	08:56	Flying	0-20	-	30	-	-	-	-
13/07/23	8	Unknown	Unknown	Improved grassland	2	09:33	Flying	0-20	-	20	-	-	-	-
13/07/23	6	Unknown	Unknown	Improved grassland	1	10:33	Flying	0-20	-	11	-	-	-	-
13/07/23	1	Unknown	Unknown	River	2	12:31	Flying	0-20	-	46	-	-	-	-
13/07/23	7	Unknown	Unknown	River	2	12:32	Flying	20-50	-	-	120	-	-	-
13/07/23	2	Unknown	Unknown	Improved grassland	2	12:33	Flying	20-50	-	-	10	-	-	-
10/08/23	8	Unknown	Unknown	Lagoons	2	12:31	Flying	0-20	-	35	-	-	-	-
14/09/23	8	Unknown	Unknown	Improved grassland	1	07:04	Flying	0-20	-	7	-	-	-	-
14/09/23	7	Unknown	Unknown	River	1	07:30	Flying	0-20	-	27	-	-	-	-
14/09/23	8	Unknown	Juvenile	Improved grassland	2	09:09	Flying	0-20	-	32	-	-	-	-
14/09/23	5	Unknown	Unknown	Improved grassland	1	11:45	Flying	0-20	-	42	-	-	-	-
14/09/23	8	Unknown	Unknown	Rough grassland	1	11:45	Flying	0-20	-	50	-	-	-	-
14/09/23	2	Unknown	Unknown	Improved grassland	1	11:46	Flying	0-20	-	30	-	-	-	-
2023/24 non-breeding season														
10/10/23	8	Unknown	Unknown	Improved grassland	2	08:56	Flying	0-20	-	28	-	-	-	-
15/11/23	8	Unknown	Unknown	Improved grassland	1	14:25	Flying	0-20	-	40	-	-	-	-
12/12/23	2	Unknown	Unknown	River	1	10:37	Flying	0-20	-	30	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
12/12/23	2	Unknown	Unknown	Improved grassland	1	12:15	Flying	0-20	-	25	-	-	-	-
12/12/23	8	Unknown	Unknown	Improved grassland	1	12:56	Flying	0-20	-	20	-	-	-	-
13/12/23	7	Unknown	Unknown	Improved grassland	1	11:51	Flying	0-20	-	20	-	-	-	-
10/01/24	2	Unknown	Unknown	Improved grassland	2	13:56	Flying	0-20	-	20	-	-	-	-
11/01/24	1	Unknown	Unknown	Rough grassland	1	16:19	Flying	0-50	-	8	4	-	-	-
11/01/24	7	Unknown	Adult	Improved grassland	1	16:20	Flying	20-50	-	-	20	-	-	-
15/02/24	2	Unknown	Unknown	Improved grassland	1	08:01	Flying	0-20	-	10	-	-	-	-
15/02/24	8	Unknown	Unknown	Improved grassland	2	08:21	Flying	20-50	-	-	34	-	-	-
19/02/24	6	Unknown	Unknown	River	1	07:41	Flying	20-50	-	-	50	-	-	-
19/02/24	7	Unknown	Unknown	Rough grassland	1	09:30	Flying	0-20	-	22	-	-	-	-
14/03/24	2	Unknown	Unknown	Improved grassland	1	12:16	Flying	0-20	-	20	-	-	-	-
14/03/24	8	Unknown	Unknown	Improved grassland	1	16:23	Flying	0-20	-	15	-	-	-	-
19/03/24	6	Unknown	Unknown	Rough grassland	1	13:47	Flying	0-20	-	24	-	-	-	-
19/03/24	6	Unknown	Unknown	Rough grassland	1	16:24	Flying	20-50	-	-	38	-	-	-
2024 breeding season														
08/04/24	8	Unknown	Unknown	River	1	13:10	Flying	0-20	-	42	-	-	-	-
09/05/24	2	Unknown	Unknown	Improved grassland	1	07:24	Flying	0-20	-	35	-	-	-	-
09/05/24	8	Unknown	Unknown	Improved grassland	1	08:14	Flying	20-50	-	-	51	-	-	-
09/05/24	2	Unknown	Unknown	Improved grassland	1	08:50	Flying	0-20	-	30	-	-	-	-
09/05/24	2	Unknown	Unknown	Improved grassland	1	08:55	Flying	20-50	-	-	25	-	-	-
10/06/24	2	Unknown	Unknown	Improved grassland	1	14:16	Flying	0-20	-	37	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
11/06/24	8	Unknown	Unknown	Improved grassland	1	14:17	Flying	0-20	-	20	-	-	-	-
11/06/24	8	Unknown	Unknown	Improved grassland	1	18:25	Flying	0-20	-	40	-	-	-	-
12/06/24	7	Unknown	Unknown	Improved grassland	1	16:41	Flying	20-50	-	-	50	-	-	-
12/06/24	6	Unknown	Unknown	Improved grassland	1	19:27	Flying	0-20	-	20	-	-	-	-
12/06/24	1	Unknown	Unknown	Rough grassland	1	19:29	Flying	0-50	-	20	10	-	-	-
12/06/24	7	Unknown	Unknown	Improved grassland	1	20:04	Flying	20-50	-	-	35	-	-	-
12/06/24	6	Unknown	Unknown	Improved grassland	2	20:28	Flying	20-50	-	-	80	-	-	-
09/07/24	8	Unknown	Unknown	Rough grassland	1	08:26	Flying	0-20	-	80	-	-	-	-
09/07/24	2	Unknown	Unknown	Improved grassland	1	08:28	Flying	0-20	-	42	-	-	-	-
09/07/24	2	Unknown	Unknown	Improved grassland	1	10:26	Flying	0-20	-	39	-	-	-	-
10/07/24	6	Unknown	Unknown	Improved grassland	1	07:45	Flying	0-20	-	30	-	-	-	-
10/07/24	7	Unknown	Unknown	Rough grassland	1	08:09	Flying	20-50	-	-	12	-	-	-
10/07/24	6	Unknown	Unknown	Improved grassland	1	08:10	Flying	0-20	-	72	-	-	-	-
10/07/24	1	Unknown	Unknown	Scrub	1	08:43	Flying	0-50	-	25	33	-	-	-
10/07/24	6	Unknown	Unknown	Improved grassland	1	11:10	Flying	0-20	-	20	-	-	-	-
08/08/24	2	Unknown	Unknown	Scrub	1	08:59	Flying	0-20	-	13	-	-	-	-
08/08/24	8	Unknown	Unknown	Rough grassland	1	09:15	Flying	0-20	-	58	-	-	-	-
08/08/24	8	Unknown	Unknown	Rough grassland	1	12:57	Flying	0-20	-	26	-	-	-	-
08/08/24	2	Unknown	Unknown	Rough grassland	1	13:36	Flying	20-50	-	-	28	-	-	-
06/09/24	8	Unknown	Unknown	Pond	2	08:44	Flying	0-20	-	20	-	-	-	-
06/09/24	8	Unknown	Unknown	Pond	2	09:01	Flying	0-20	-	32	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
06/09/24	2	Unknown	Unknown	Scrub	1	09:12	Flying	0-50	-	7	6	-	-	-
06/09/24	2	Unknown	Unknown	Scrub	1	09:43	Flying	0-20	-	12	-	-	-	-
06/09/24	5	Unknown	Unknown	Improved grassland	1	10:07	Flying	0-20	-	9	-	-	-	-
09/09/24	7	Unknown	Unknown	Scrub	1	08:19	Flying	0-20	-	5	-	-	-	-
09/09/24	7	Unknown	Unknown	Scrub	1	08:24	Flying	0-20	-	12	-	-	-	-
09/09/24	7	Unknown	Unknown	Pond	2	09:01	Flying	0-20	-	32	-	-	-	-
09/09/24	6	Unknown	Unknown	Improved grassland	1	10:48	Flying	20-50	-	-	4	-	-	-

Table 62. VP survey flight activity results: greylag goose

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2022/23 non-breeding season														
04/11/22	1	Unknown	Unknown	Rough grassland	2	09:50	Flying	20-50	-	-	30	-	-	-
04/11/22	5	Unknown	Adult	Improved grassland	11	14:38	Flying	120	-	-	-	-	70	-
04/11/22	8	Unknown	Unknown	Improved grassland	2	09:29	Flying	50-80	-	-	-	150	-	-
04/11/22	8	Unknown	Unknown	Improved grassland	11	14:39	Flying	60-80	-	-	-	50	-	-
2023 breeding season														
13/06/23	7	Unknown	Unknown	Rough grassland	1	11:38	Flying	20-50	-	-	40	-	-	-
13/06/23	2	Unknown	Unknown	Scrub	7	11:41	Flying	50-100	-	-	-	70	-	-
13/06/23	8	Unknown	Unknown	Improved grassland	7	11:41	Flying	20-50	-	-	54	-	-	-
13/06/23	1	Unknown	Unknown	Improved grassland	7	11:42	Flying	20-50	-	-	268	-	-	-
2023/24 non-breeding season														
10/10/23	8	Unknown	Unknown	Improved grassland	1	12:18	Flying	20-50	-	-	50	-	-	-

Table 63. VP survey flight activity results: hen harrier

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2022/23 non-breeding season														
13/02/23	2	Unknown	Unknown	Rough grassland	1	08:54	Hunting	0-20	-	44	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13/02/23	2	Unknown	Unknown	1st rotation forest	1	09:13	Hunting	0-20	-	31	-	-	-	-
13/02/23	7	Unknown	Unknown	Rough grassland	1	09:21	Flying	0-20	-	5	-	-	-	-
13/02/23	8	Unknown	Immature	Track, scrub	1	09:00	Perched on ground	-	840	-	-	-	-	-
2023/24 non-breeding season														
14/11/23	2	Male	Adult	Rough grassland	1	11:11	Hunting	0-20	-	15	-	-	-	-
14/11/23	1	Male	Adult	Rough grassland	1	11:15	Hunting	0-20	-	54	-	-	-	-
14/11/23	7	Male	Adult	Rough grassland	1	11:35	Flying	0-20	-	20	-	-	-	-
11/01/24	7	Female	Adult	Rough grassland	1	11:32	Flying	0-20	-	45	-	-	-	-

Table 64. VP survey flight activity results: herring gull

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2021/22 non-breeding season														
05/12/21	3	Unknown	Unknown	Improved grassland	13	09:16	Flying	0-10	-	35	-	-	-	-
03/02/22	4	Unknown	Unknown	Improved grassland	7	10:47	On ground	-	3,480	-	-	-	-	-
03/02/22	4	Unknown	Unknown	Improved grassland	30	12:40	Flying	20-50	-	-	540	420	-	-
03/02/22	4	Unknown	Unknown	Improved grassland	20	13:25	Flying	20-50	-	-	67	-	-	-
03/02/22	4	Unknown	Unknown	Improved grassland	7	14:18	Flying	0-20	23	-	-	-	-	-
2022/23 non-breeding season														

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
07/10/22	1	Unknown	Juvenile	Improved grassland	1	10:47	Flying	20-30	-	-	7	-	-	-
07/10/22	8	Unknown	Adult	Improved grassland	1	13:00	Flying	20	-	90	-	-	-	-

Table 65. VP survey flight activity results: kestrel

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2020/21 non-breeding season														
23/10/20	2	Male	Adult	Rough grassland, scrub	1	11:03	Hunting	30	-	-	1,200	-	-	-
23/10/20	1	Unknown	Unknown	-	1	13:42	Hunting, flying	40	-	2,280	-	-	-	-
23/10/20	2	Unknown	Unknown	Rough & improved grassland, scrub	1	14:46	Hunting, flying	60-70	-	-	-	300	-	-
19/11/20	2	Female	Adult	Rough grassland, scrub	1	09:55	Flying	-	-	-	45	-	-	-
19/11/20	1	Male	Adult	Improved grassland	1	10:32	Flying	-	-	-	180	-	-	-
19/11/20	2	Male	Adult	Rough grassland	1	13:08	Flying	-	-	360	-	-	-	-
19/11/20	2	Male	Adult	Rough grassland	1	15:35	Flying	-	-	240	-	-	-	-
20/11/20	4	Male	Adult	Rough grassland	1	13:10	Hovering, flying	-	-	300	-	-	-	-
09/12/20	1	Unknown	Unknown	Rough grassland, improved grassland	1	11:50	Flying, circling, hovering	30-40	-	-	60	-	-	-
19/01/21	2	Unknown	Unknown	Rough grassland	1	-	Flying	20	-	35	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
20/01/21	3	Female	Adult	Improved grassland	1	09:29	Flying	-	-	50	-	-	-	-
20/01/21	4	Unknown	Unknown	Improved grassland	1	14:10	Flying, hunting	80-100	-	-	-	61	-	-
17/02/21	2	Female	Adult	Rough grassland, scrub	1	12:50	Hunting	30-40	-	-	-	-	-	-
2021 breeding season														
26/04/21	1	Unknown	Unknown	Rough grassland, improved grassland	1	15:35	Hunting, hovering	35	-	-	420	-	-	-
26/04/21	1	Unknown	Unknown	Rough grassland, improved grassland	1	16:09	Hunting, hovering	-	-	-	300	-	-	-
28/04/21	3	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	1	19:25	Hunting, hovering	30	-	-	600	-	-	-
27/05/21	4	Unknown	Unknown	Rough & improved grassland, grassland moorland	1	11:09	Hunting	20	-	240	-	-	-	-
02/06/21	1	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	1	16:10	Huntin, flying	20	-	78	-	-	-	-
02/06/21	1	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	1	18:50	Huntin, flying	25	-	-	180	-	-	-
12/07/21	1	Unknown	Unknown	Rough & improved grassland, scrub	1	09:38	Huntin, flying	20	-	240	-	-	-	-
28/07/21	3	Unknown	Unknown	Rough & improved grassland, grassland moorland	1	07:33	Flying	10	-	14	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
17/08/21	1	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	1	15:09	Hunting, hovering	20	-	360	-	-	-	-
17/08/21	1	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	1	16:34	Travelling/Perching	20	-	54	-	-	-	-
17/08/21	2	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	1	18:42	Huntin, flying	20	-	240	-	-	-	-
17/08/21	2	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	1	19:50	Huntin, flying	30	-	-	20	-	-	-
19/08/21	2	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	1	15:08	Hunting	25	-	-	180	-	-	-
19/08/21	2	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	1	16:15	Hunting	25	-	-	70	-	-	-
25/08/21	3	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	1	14:28	Huntin, flying	20	-	180	-	-	-	-
20/09/21	1	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	1	13:25	Huntin, flying	20	-	240	-	-	-	-
2021/22 non-breeding season														
06/10/21	2	Female	Adult	Improved grassland	1	12:38	Flying	20-50	-	-	5	-	-	-
06/10/21	2	Female	Adult	Improved grassland	1	13:09	Flying	0-20	20	250	-	-	-	-
06/10/21	2	Female	Adult	Improved grassland	1	16:20	Flying	0-20	-	60	360	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
06/10/21	2	Female	Adult	Improved grassland	1	16:41	Flying	0-20	2	180	-	-	-	-
03/11/21	1	Male	Adult	Improved grassland	1	13:12	Flying	0-20	-	15	45	180	-	-
04/11/21	2	Female	Adult	River, improved grassland	1	11:44	Hunting	0-40	-	120	120	-	-	-
04/11/21	2	Unknown	Unknown	Improved grassland	1	12:39	Flying, hovering	0-30	-	10	30	-	-	-
04/11/21	2	Unknown	Unknown	River, improved grassland	1	13:40	Flying, hovering	20-40	-	30	-	-	-	-
10/11/21	4	Male	Unknown	Improved grassland	1	16:27	Hovering	20-50	-	-	20	-	-	-
10/11/21	4	Unknown	Unknown	Improved grassland	1	17:13	Flying	50-100	-	-	-	35	-	-
17/11/21	3	Male	Adult	Hedgerow	1	10:22	Perched	-	15	-	-	-	-	-
25/11/21	1	Unknown	Unknown	Improved grassland	1	11:37	Flying	0-20	-	5	25	-	-	-
09/12/21	4	Unknown	Unknown	Improved grassland	1	11:33	Flying	0-20	-	3	-	-	-	-
18/12/21	1	Female	Adult	Improved grassland	1	13:31	Flying	20-50	-	-	330	-	-	-
18/12/21	1	Female	Adult	Improved grassland	1	15:10	Flying	20-50	-	-	20	-	-	-
06/01/22	1	Unknown	Unknown	Improved grassland	1	12:53	Flying	20-50	-	-	7	-	-	-
23/01/22	2	Unknown	Unknown	Improved grassland	1	14:00	Flying	50-100	-	-	-	20	-	-
03/02/22	4	Male	Adult	Improved grassland	1	13:37	Hunting	0-20	38	-	-	-	-	-
03/02/22	4	Male	Adult	Improved grassland	1	13:54	Hunting	0-20	468	-	-	-	-	-
10/02/22	3	Male	Unknown	Improved grassland	1	09:41	Flying	20-50	-	-	15	-	-	-
21/02/22	2	Female	Adult	Improved grassland	1	11:25	Flying	20-50	-	-	300	-	-	-
21/02/22	2	Female	Adult	Improved grassland	1	11:57	Flying	20-50	-	-	60	-	-	-
21/02/22	2	Female	Adult	Improved grassland	1	12:20	Flying	50-100	-	-	-	180	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
25/02/22	2	Unknown	Unknown	Improved grassland	1	12:37	Flying	50-100	-	-	-	120	-	-
25/02/22	2	Female	Adult	Improved grassland	1	14:22	Flying	0-20	-	30	-	-	-	-
25/02/22	2	Female	Adult	Improved grassland	1	14:53	Flying	0-20	900	120	-	-	-	-
28/02/22	1	Unknown	Unknown	Improved grassland	1	14:10	Flying	20-50	95	-	24	-	-	-
28/02/22	1	Male	Adult	Improved grassland	1	15:00	Flying	0-20	-	17	-	-	-	-
28/02/22	1	Female	Unknown	Improved grassland	1	15:58	Flying	20-50	-	-	33	172	-	-
02/03/22	3	Unknown	Unknown	Improved grassland	1	13:24	Flying	0-20	-	18	-	-	-	-
2022 breeding season														
20/04/22	2	Unknown	Unknown	Improved grassland, trees	1	14:10	Hovering	35	-	-	7	-	-	-
27/04/22	3	Male	Adult	Improved grassland	1	16:50	Flying	1	-	60	-	-	-	-
23/05/22	3	Male	Adult	Unknown	1	08:58	-	10	-	24	-	-	-	-
23/05/22	4	Male	Adult	Rough grassland, improved grassland	1	12:09	Hunting	15	-	360	-	-	-	-
24/05/22	2	Male	Adult	Improved grassland, scrub	1	12:09	Hunting	20	-	300	-	-	-	-
24/05/22	2	Male	Adult	Rough grassland, improved grassland	1	12:47	Hunting	20	-	420	-	-	-	-
21/07/22	2	Unknown	Unknown	Rough grassland	1	09:40	Flying	10	-	20	-	-	-	-
17/08/22	3	Male	Adult	Improved grassland	1	14:12	Flying	25	-	-	37	-	-	-
19/08/22	4	Male	Adult	Improved grassland	1	13:44	Perched	1.5	27	-	-	-	-	-
23/09/22	1	Female	Adult	Improved grassland	1	11:49	Hunting	100	-	-	-	240	-	-
23/09/22	2	Male	Adult	Improved grassland	1	09:56	-	10	-	-	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
23/09/22	2	Male	Adult	Improved grassland	1	12:32	Flying, hunting	20-80	-	-	100	50	20	57
23/09/22	2	Unknown	Adult	Improved grassland	1	12:59	Flying	50	-	50	-	-	-	-
23/09/22	6	Female	Immature	Rough grassland	1	13:40	Flying	12-15	-	40	-	-	-	-
23/09/22	7	Male	Adult	Rough grassland	1	11:46	Hunting	15	-	90	-	-	-	-
23/09/22	7	1 male/1 female	Adult	Rough grassland	1	12:56	Flying, hunting	5-20	-	390	-	-	-	-
23/09/22	7	Unknown	Adult	Rough grassland	2	14:26	Hunting	15-40	-	150	150	-	-	-
2022/23 non-breeding season														
07/10/22	1	Female	Adult	Improved grassland	1	10:09	Hunting	40-60	-	-	-	10	-	-
07/10/22	2	Female	Adult	Improved grassland	1	10:34	Flying	30	-	-	11	-	-	-
07/10/22	8	Male	Adult	Improved grassland, scrub, hedgerow	1	09:30	Hunting, flying	10	-	60	-	-	-	-
07/10/22	8	Female	Adult	Improved grassland	1	13:40	Hunting	15-25	-	-	100	-	-	-
07/10/22	5	Male	Adult	Improved grassland	1	11:29	Flying, hunting	10	-	68	-	-	-	-
07/10/22	5	Female	Adult	Improved grassland	1	12:39	Flying, hunting	10	-	87	-	-	-	-
07/10/22	5	Female	Adult	Improved grassland	1	13:33	Flying, hunting	10	-	42	-	-	-	-
07/10/22	7	Unknown	Unknown	Rough grassland	1	12:44	Hunting	20-50	-	-	28	-	-	-
07/10/22	7	Unknown	Unknown	Rough grassland	1	14:04	Hunting	10-50	-	120	120	-	-	-
04/11/22	1	Male	Adult	Rough grassland	1	09:36	Flying	0-20	-	40	-	-	-	-
04/11/22	1	Female	Adult	Rough grassland	1	10:32	Hunting, perched	0-20	-	240	-	-	-	-
04/11/22	1	Unknown	Unknown	Rough grassland	1	12:46	Hunting, perched	0-20	-	80	-	-	-	-
04/11/22	2	Female	Adult	Improved grassland	1	13:28	Hunting	50-100	-	-	-	10	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
04/11/22	5	Female	Adult	Improved grassland	1	13:50	Hunting	50-100	-	-	-	120	-	-
04/11/22	6	Female	Adult	Improved grassland	1	12:46	Flying, hunting	10	-	30	-	-	-	-
17/01/23	6	Female	Juvenile	Improved grassland	1	11:57	Flying, perched	20	-	-	210	-	-	-
17/01/23	7	Female	Adult	Improved grassland	1	13:04	Flying	7	-	240	-	-	-	-
17/01/23	8	Unknown	Unknown	Improved grassland	1	11:49	Flying, hunting	0-20	-	38	-	-	-	-
17/01/23	1	Unknown	Unknown	Rough grassland	1	13:45	Flying	0-20	-	14	-	-	-	-
17/01/23	1	Unknown	Unknown	Improved grassland	1	14:59	Hunting	20-50	-	-	152	-	-	-
17/01/23	1	Unknown	Unknown	Improved grassland	1	15:16	Hunting	20-50	-	-	46	-	-	-
17/01/23	1	Unknown	Unknown	Rough grassland	1	15:23	Hunting	0-20	-	52	-	-	-	-
17/01/23	1	Unknown	Unknown	Rough grassland, improved grassland	1	15:49	Hunting	0-20	-	30	-	-	-	-
17/01/23	1	Unknown	Unknown	Rough grassland, improved grassland	1	16:00	Hunting	20-50	-	-	240	-	-	-
17/01/23	1	Unknown	Unknown	Rough grassland	1	16:38	Hunting	0-20	-	99	-	-	-	-
13/02/23	1	Unknown	Unknown	Improved grassland	1	07:50	Hunting, circling	0-20	-	244	-	-	-	-
13/02/23	1	Unknown	Unknown	Improved grassland	1	08:08	Hunting, circling	0-20	-	176	-	-	-	-
13/02/23	1	Unknown	Unknown	Improved grassland	1	10:00	Flying, hunting	0-20	-	92	-	-	-	-
13/02/23	1	Unknown	Unknown	Improved grassland	1	11:17	Flying, hunting	0-20	-	129	-	-	-	-
13/02/23	1	Female	Adult	Improved grassland, scrub	1	11:51	Flying, hunting	0-100	-	25	10	180	-	-
13/02/23	1	Female	Adult	Improved grassland	1	13:50	Flying, hunting	0-20	-	78	80	-	-	-
13/02/23	2	Unknown	Unknown	1st rotation forest	1	07:34	Flying, hunting	0-20	-	171	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13/02/23	2	Unknown	Unknown	Rough grassland	1	11:34	Perched	0-20	703	-	-	-	-	-
13/02/23	2	Unknown	Unknown	Rough grassland	1	11:56	Hunting	0-20	-	30	-	-	-	-
13/02/23	2	Unknown	Unknown	Improved grassland, 1st rotation forest	1	12:45	Hunting, flying	0-20	-	25	-	-	-	-
13/02/23	2	Unknown	Unknown	Rough grassland	1	12:59	Hunting	0-20	-	554	-	-	-	-
13/02/23	2	Unknown	Unknown	1st rotation forest	1	13:52	Hunting	0-20	-	251	-	-	-	-
13/02/23	6	Male	Adult	Improved grassland	1	07:50	Hunting	0-20	-	180	-	-	-	-
13/02/23	6	Male	Adult	Improved grassland	1	08:10	Perched, flying	0-20	400	40	-	-	-	-
13/02/23	7	Unknown	Unknown	Improved grassland	1	08:00	Hunting	0-20	-	7	-	-	-	-
13/02/23	7	Female	Adult	Improved grassland	1	10:12	Flying	0-20	-	5	-	-	-	-
2023 breeding season														
13/04/23	7	Unknown	Unknown	Rough grassland	1	14:00	Flying	0-20	-	5	-	-	-	-
13/04/23	7	Unknown	Unknown	Rough grassland	1	14:08	Hunting	20-50	-	-	40	-	-	-
13/04/23	5	Male	Adult	Improved grassland	1	14:15	Hunting	50-180	-	-	-	8	4	-
13/04/23	7	Unknown	Unknown	Rough grassland	1	14:43	Hunting	0-20	-	108	-	-	-	-
13/04/23	1	Female	Adult	Rough grassland	1	15:11	Hunting	20-50	-	-	45	-	-	-
13/04/23	8	Unknown	Female	Improved grassland	1	15:32	Flying	0-20	-	5	-	-	-	-
13/04/23	7	Unknown	Unknown	Rough grassland	1	16:29	Flying	20-50	-	-	220	-	-	-
13/04/23	1	Unknown	Adult	Rough grassland	1	18:34	Flying	50-100	-	-	-	35	-	-
13/04/23	6	Unknown	Female	Rough grassland	1	19:31	Flying	0-20	-	88	-	-	-	-
09/05/23	8	Male	Adult	Lake	1	08:42	Perching	-	600	-	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
09/05/23	2	Mixed group	Adult	Improved grassland	3	13:00	Hunting	0-20	-	120	-	-	-	-
10/05/23	1	Unknown	Unknown	Rough grassland	1	08:43	Flying	0-20	-	15	-	-	-	-
11/05/23	1	Unknown	Unknown	Improved grassland	1	09:01	Hunting	0-50	-	10	15	-	-	-
12/05/23	2	Female	Adult	Rough grassland	1	09:09	Hunting	0-20	-	156	-	-	-	-
13/05/23	1	Unknown	Unknown	Improved grassland	2	09:12	Hunting	0-50	-	20	10	-	-	-
14/05/23	2	Female	Adult	Rough grassland	1	09:30	Perching	0-20	-	120	-	-	-	-
15/05/23	2	Unknown	Unknown	Improved grassland	1	10:14	Hunting	20-50	-	-	28	-	-	-
16/05/23	7	Male	Adult	Rough grassland	1	10:20	Flying	0-20	-	22	-	-	-	-
17/05/23	1	Unknown	Unknown	Rough grassland	1	10:28	Hunting	20-50	-	-	50	-	-	-
18/05/23	5	Female	Adult	Improved grassland	1	11:12	Flying	20-50	-	-	12	-	-	-
19/05/23	2	Female	Adult	Rough grassland	1	11:28	Flying	0-20	-	5	-	-	-	-
20/05/23	7	Male	Adult	Rough grassland	1	11:42	Flying	0-20	-	15	-	-	-	-
21/05/23	2	Female	Adult	Improved grassland	1	11:43	Flying	0-20	-	20	-	-	-	-
22/05/23	2	Male	Adult	Improved grassland	1	11:48	Flying	0-20	-	47	-	-	-	-
23/05/23	2	Male	Adult	Improved grassland	1	11:48	Flying	0-20	-	12	-	-	-	-
24/05/23	8	Male	Adult	Rough grassland	1	11:54	Hunting	20-50	-	-	115	-	-	-
25/05/23	8	Male	Adult	Rough grassland	1	12:00	Hunting	0-50	-	100	46	-	-	-
26/05/23	8	Male	Adult	Improved grassland	1	12:06	Hunting	20-50	-	-	60	-	-	-
27/05/23	1	Unknown	Unknown	Rough grassland	1	12:40	Flying	0-20	-	12	-	-	-	-
28/05/23	8	Unknown	Unknown	Lake	1	12:41	Hunting	0-20	-	120	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13/06/23	8	1 male/1 female	Adult	Improved grassland	2	09:05	Hunting	-	-	-	-	-	-	-
13/06/23	6	Male	Adult	Improved grassland	1	09:52	Flying	0-50	-	20	10	-	-	-
13/06/23	6	Male	Adult	Improved grassland	1	10:10	Hunting	0-50	-	25	20	-	-	-
13/06/23	7	Unknown	Adult	Rough grassland	1	11:26	Hunting	20-50	-	-	30	-	-	-
13/06/23	1	Female	Adult	Improved grassland	1	13:10	Mobbing	0-50	-	8	320	-	-	-
13/06/23	8	Female	Adult	Improved grassland	1	13:12	Hunting	20-180	-	-	133	148	151	-
13/06/23	1	Unknown	Unknown	Tree	1	14:00	Perching	0-20	-	60	-	-	-	-
13/07/23	8	Male	Adult	Improved grassland	1	08:49	Hunting	20-50	-	-	100	-	-	-
13/07/23	7	Male	Adult	Rough grassland	1	09:14	Flying	0-50	-	40	30	-	-	-
13/07/23	2	Unknown	Unknown	Improved grassland	1	10:05	Hunting	20-50	-	-	116	-	-	-
13/07/23	5	Unknown	Unknown	Improved grassland	1	10:54	Hunting	20-100	-	-	70	10	-	-
13/07/23	5	Unknown	Unknown	Rough grassland	1	11:08	Hunting	20-50	-	-	60	-	-	-
13/07/23	2	Unknown	Unknown	Improved grassland	1	11:14	Hunting	0-20	-	115	-	-	-	-
13/07/23	8	Female	Adult	Improved grassland	1	11:19	Hunting	20-50	-	-	135	-	-	-
13/07/23	7	Unknown	Unknown	River	1	11:51	Hunting	20-50	-	-	280	-	-	-
13/07/23	7	Female	Adult	Rough grassland	1	12:05	Hunting	0-50	-	30	350	-	-	-
13/07/23	2	Unknown	Unknown	Improved grassland	1	12:06	Hunting	20-50	-	-	209	-	-	-
13/07/23	5	Unknown	Unknown	Rough grassland	1	12:18	Flying	20-50	-	-	20	-	-	-
10/08/23	8	Male	Adult	Rough grassland	1	07:27	Hunting	0-50	-	130	60	-	-	-
10/08/23	5	Unknown	Unknown	Rough grassland	1	07:30	Hunting	0-20	-	30	-	-	-	-
10/08/23	1	Unknown	Adult	Improved grassland	1	07:52	Hunting	20-50	-	-	20	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
10/08/23	5	Unknown	Unknown	Improved grassland	1	08:03	Flying	20-50	-	-	40	-	-	-
10/08/23	5	Unknown	Unknown	Rough grassland	1	08:05	Hunting	0-20	-	275	-	-	-	-
10/08/23	5	Unknown	Unknown	Rough grassland	2	08:17	Hunting	0-20	-	176	-	-	-	-
10/08/23	8	Unknown	Unknown	Rough grassland	2	08:20	Hunting	0-20	-	380	-	-	-	-
10/08/23	1	Unknown	Adult	Improved grassland	1	08:22	Hunting	20-50	-	-	30	-	-	-
10/08/23	2	Female	Adult	Rough grassland	1	08:30	Hunting	0-20	-	588	-	-	-	-
10/08/23	7	Unknown	Unknown	-	1	08:51	-	-	-	-	-	-	-	-
10/08/23	5	Unknown	Unknown	Improved grassland	1	09:01	Hunting	0-20	-	180	-	-	-	-
10/08/23	2	Female	Adult	Rough grassland	1	09:02	Hunting	0-20	-	116	-	-	-	-
10/08/23	8	Male	Adult	Rough grassland	1	09:45	Hunting	0-20	-	350	-	-	-	-
10/08/23	8	Male	Adult	Rough grassland	1	10:40	Hunting	0-50	-	410	255	-	-	-
10/08/23	6	Unknown	Unknown	Improved grassland	1	11:05	Hunting	20-50	-	-	50	-	-	-
10/08/23	5	Unknown	Unknown	Rough grassland	1	11:10	Hunting	0-20	-	196	-	-	-	-
10/08/23	2	Unknown	Unknown	Rough grassland	1	11:28	Hunting	0-20	-	172	-	-	-	-
10/08/23	5	Unknown	Unknown	Rough grassland	1	11:57	Hunting	0-20	-	150	-	-	-	-
10/08/23	7	Unknown	Unknown	Rough grassland	1	12:16	Hunting	0-20	-	20	-	-	-	-
10/08/23	6	Unknown	Unknown	Improved grassland	1	12:25	Hunting	20-100	-	-	35	15	-	-
10/08/23	2	Unknown	Unknown	Rough grassland	1	12:31	Hunting	0-20	-	110	-	-	-	-
10/08/23	2	Male	Adult	Rough grassland	1	12:56	Hunting	0-20	-	102	-	-	-	-
10/08/23	6	Unknown	Unknown	Improved grassland	1	13:26	Flying	20-50	-	-	25	-	-	-
10/08/23	5	Unknown	Unknown	Rough grassland	1	13:33	Hunting	0-50	-	419	145	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
14/09/23	2	Unknown	Unknown	Improved grassland	1	08:01	Flying	0-20	-	40	-	-	-	-
14/09/23	8	Male	Adult	Rough grassland	1	11:29	Flying	0-20	-	35	-	-	-	-
14/09/23	5	Unknown	Unknown	Rough grassland	1	12:06	Hunting	0-50	-	30	30	-	-	-
2023/24 non-breeding season														
10/10/23	1	Male	Adult	Improved grassland	1	11:37	Hunting	0-20	-	127	-	-	-	-
10/10/23	8	Unknown	Unknown	Rough grassland	1	11:51	Hunting	0-20	-	135	-	-	-	-
10/10/23	1	Unknown	Unknown	Improved grassland	1	12:30	Hunting	0-20	-	15	-	-	-	-
11/10/23	5	Unknown	Adult	Improved grassland	1	10:25	Flying	0-20	-	20	-	-	-	-
11/10/23	5	Unknown	Adult	Improved grassland	1	11:18	Flying	-	-	-	-	-	-	-
11/10/23	6	Unknown	Unknown	Improved grassland	1	11:28	Flying	20-50	-	-	40	-	-	-
11/10/23	6	Unknown	Unknown	Improved grassland	1	13:23	Flying	20-50	-	-	20	-	-	-
14/11/23	2	Male	Adult	Improved grassland	1	11:25	Hunting	0-20	-	8	-	-	-	-
14/11/23	1	Unknown	Unknown	Rough grassland	1	11:43	Hunting	0-50	-	36	70	-	-	-
14/11/23	1	Unknown	Unknown	Rough grassland	1	12:14	Hunting	0-50	-	92	240	-	-	-
14/11/23	7	Unknown	Adult	Rough grassland	1	12:26	Flying	20-50	-	-	35	-	-	-
14/11/23	2	Female	Adult	Improved grassland	1	12:27	Hunting	0-20	-	17	-	-	-	-
14/11/23	1	Unknown	Unknown	Rough grassland	1	12:28	Hunting	20-50	-	-	135	-	-	-
14/11/23	2	Female	Adult	Improved grassland	1	13:26	Hunting	0-20	-	104	-	-	-	-
14/11/23	2	Unknown	Unknown	Improved grassland	1	15:09	Hunting	0-20	-	18	-	-	-	-
14/11/23	2	Male	Adult	Improved grassland	1	15:42	Hunting	0-20	-	2,880	-	-	-	-
14/11/23	7	Unknown	Adult	Improved grassland	1	17:05	Hunting	0-20	-	40	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
15/11/23	5	Unknown	Juvenile	Improved grassland	1	11:14	Hunting	20-50	-	-	7	-	-	-
15/11/23	8	Unknown	Unknown	Rough grassland	1	12:06	Hunting	20-50	-	-	25	-	-	-
15/11/23	6	Unknown	Adult	Improved grassland	1	12:50	Hunting	20-50	-	-	50	-	-	-
15/11/23	5	Unknown	Juvenile	Improved grassland	1	13:45	Hunting	20-50	-	-	22	-	-	-
15/11/23	8	Unknown	Unknown	Improved grassland	1	14:22	Hunting	20-50	-	-	25	-	-	-
15/11/23	6	Unknown	Adult	Improved grassland	1	15:41	Flying	0-20	-	40	-	-	-	-
15/11/23	6	Unknown	Adult	Improved grassland	1	16:33	Hunting	0-20	-	35	-	-	-	-
12/12/23	8	Unknown	Adult	Improved grassland	1	10:41	Flying	0-20	-	20	-	-	-	-
12/12/23	5	Unknown	Juvenile	Improved grassland	1	10:53	Hunting	0-20	-	34	-	-	-	-
12/12/23	5	Male	Adult	Improved grassland	1	12:28	Hunting	0-20	-	53	-	-	-	-
13/12/23	7	Unknown	Adult	Improved grassland	1	08:26	Flying	20-50	-	-	40	-	-	-
13/12/23	6	Unknown	Unknown	Improved grassland	1	10:07	Flying	0-20	-	30	-	-	-	-
13/12/23	6	Unknown	Unknown	Improved grassland	1	14:12	Flying	0-20	-	15	-	-	-	-
10/01/24	5	Female	Adult	Improved grassland	1	13:20	Hunting	0-20	-	24	-	-	-	-
10/01/24	2	Female	Adult	Improved grassland	1	13:52	Hunting	0-20	-	25	-	-	-	-
10/01/24	2	Unknown	Unknown	Improved grassland	1	16:05	Flying	0-20	-	30	-	-	-	-
11/01/24	1	Female	Unknown	Rough grassland	1	11:36	Flying	20-50	-	-	30	-	-	-
11/01/24	6	Unknown	Unknown	Improved grassland	1	12:12	Flying	0-20	-	38	-	-	-	-
11/01/24	1	Female	Unknown	Rough grassland	1	17:01	Flying	20-50	-	-	30	-	-	-
11/01/24	6	Unknown	Unknown	Improved grassland	1		Flying	0-20	-	30	-	-	-	-
15/02/24	5	Unknown	Adult	Improved grassland	1	08:50	Flying	50-100	-	-	-	90	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
15/02/24	2	Female	Adult	Improved grassland	1	11:00	Hunting	-	-	-	-	-	-	-
15/02/24	8	Male	Adult	Improved grassland	1	11:44	Hunting	0-20	-	30	-	-	-	-
15/02/24	8	Male	Adult	Improved grassland	1	12:20	Hunting	20-50	-	-	127	-	-	-
15/02/24	2	Male	Adult	Improved grassland	1	12:53	Hunting	0-20	-	36	-	-	-	-
15/02/24	5	Unknown	Unknown	Rough grassland	1	13:25	Flying	20-50	-	-	40	-	-	-
19/02/24	1	Unknown	Unknown	Rough grassland	1	07:39	Hunting	0-20	-	45	-	-	-	-
19/02/24	1	Unknown	Unknown	Rough grassland	1	11:06	Hunting	0-20	-	31	-	-	-	-
19/02/24	1	Unknown	Unknown	Rough grassland	1	11:12	Hunting	20-50	-	-	147	-	-	-
19/02/24	7	Unknown	Unknown	Improved grassland	1	11:55	Flying	20-50	-	-	5	-	-	-
19/02/24	1	Unknown	Unknown	Rough grassland	1	12:05	Hunting	0-50	-	20	115	-	-	-
19/02/24	1	Unknown	Unknown	Rough grassland	1	12:54	Hunting	0-50	-	200	140	-	-	-
19/02/24	7	Unknown	Unknown	Rough grassland	1	13:36	Hunting	20-100	-	-	160	80	-	-
14/03/24	8	Unknown	Adult	Improved grassland	1	12:16	Hunting	20-50	-	-	25	-	-	-
14/03/24	8	Male	Adult	Improved grassland	1	13:13	Hunting	20-50	-	-	105	-	-	-
14/03/24	2	Unknown	Unknown	Rough grassland	1	13:44	Hunting	0-50	-	40	236	-	-	-
14/03/24	2	Unknown	Unknown	Improved grassland	1	13:48	Hunting	0-20	-	270	-	-	-	-
14/03/24	2	Unknown	Unknown	Rough grassland	1	13:48	Hunting	0-50	-	30	97	-	-	-
14/03/24	5	Unknown	Unknown	Improved grassland	1	14:36	Hunting	0-20	-	10	-	-	-	-
14/03/24	2	Unknown	Unknown	Rough grassland	1	15:37	Flying	0-20	-	98	-	-	-	-
14/03/24	5	Male	Adult	Improved grassland	1	17:45	Hunting	0-20	-	182	-	-	-	-
18/03/24	7	Unknown	Unknown	Improved grassland	1	12:43	Hunting	20-50	-	-	20	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
18/03/24	7	Unknown	Adult	Improved grassland	1	13:36	Hunting	20-50	-	-	145	-	-	-
19/03/24	1	Female	Adult	Rough grassland	1	14:36	Hunting	20-100	-	-	100	20	-	-
19/03/24	1	Female	Adult	Rough grassland	1	15:05	Hunting	20-100	-	-	90	20	-	-
2024 breeding season														
11/04/24	1	Unknown	Adult	Improved grassland	1	07:39	Flying	0-20	-	40	-	-	-	-
09/05/24	5	Male	Adult	Improved grassland	1	10:13	Hunting	20-50	-	-	20	-	-	-
09/05/24	2	Male	Adult	Improved grassland	1	10:27	Flying	50-100	-	-	-	150	-	-
09/05/24	8	Male	Adult	Improved grassland	1	12:56	Hunting	0-20	-	177	-	-	-	-
14/05/24	1	Unknown	Unknown	Improved grassland	1	07:22	Hunting	0-50	-	45	105	-	-	-
11/06/24	8	Unknown	Adult	Improved grassland	1	14:16	Flying	20-50	-	-	65	-	-	-
11/06/24	2	Unknown	Unknown	Improved grassland	1	16:47	Flying	0-20	-	109	-	-	-	-
11/06/24	2	Unknown	Unknown	Improved grassland	1	18:15	Hunting	20-50	-	-	115	-	-	-
11/06/24	8	Unknown	Adult	Improved grassland	1	18:20	Flying	20-50	-	-	45	-	-	-
11/06/24	2	Unknown	Unknown	Rough grassland	1	19:42	Hunting	0-50	-	20	194	-	-	-
11/06/24	2	Unknown	Unknown	Rough grassland	1	20:04	Hunting	20-50	-	-	147	-	-	-
12/06/24	7	Unknown	Unknown	Improved grassland	1	14:11	Flying	20-50	-	-	75	-	-	-
12/06/24	6	Unknown	Unknown	Improved grassland	1	14:17	Flying	50-180	-	-	-	40	180	-
12/06/24	7	Unknown	Unknown	Improved grassland	1	14:17	Mobbing	50-100	-	-	-	810	-	-
12/06/24	6	Unknown	Unknown	Improved grassland	1	18:20	Flying	0-20	-	37	-	-	-	-
09/07/24	8	1 male/1 female	Mixed group	Improved grassland	2	10:29	Hunting	20-50	-	-	155	-	-	-
09/07/24	5	Male	Adult	Improved grassland	1	10:38	Hunting	0-20	-	10	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
09/07/24	2	Unknown	Unknown	Improved grassland	1	10:48	Hunting	0-50	-	96	30	-	-	-
10/07/24	6	Unknown	Unknown	Improved grassland	1	12:50	Flying	20-50	-	-	38	-	-	-
10/07/24	1	Female	Adult	Rough grassland	1	12:58	Flying	20-50	-	-	26	-	-	-
07/08/24	1	Male	Adult	Rough grassland	1	08:15	Hunting	0-20	-	126	-	-	-	-
07/08/24	1	Male	Adult	Improved grassland	1	08:34	Hunting	0-20	-	175	-	-	-	-
07/08/24	1	Unknown	Juvenile	Rough grassland	1	09:32	Hunting	0-20	-	216	-	-	-	-
07/08/24	1	Unknown	Juvenile	Rough grassland	1	09:32	Hunting	0-20	-	244	-	-	-	-
07/08/24	6	Unknown	Unknown	Improved grassland	1	09:32	Hunting	0-20	-	4	-	-	-	-
07/08/24	7	Unknown	Unknown	Improved grassland	1	09:46	Hunting	0-20	-	130	-	-	-	-
07/08/24	7	Male	Adult	Improved grassland	1	10:02	Hunting	0-20	-	10	-	-	-	-
07/08/24	1	Unknown	Unknown	Improved grassland	1	11:27	Hunting	0-20	-	230	-	-	-	-
07/08/24	7	Unknown	Unknown	Improved grassland	1	11:39	Mobbing	0-20	-	10	-	-	-	-
07/08/24	1	Unknown	Juvenile	Rough grassland	1	12:31	Hunting	0-20	-	66	-	-	-	-
07/08/24	7	Unknown	Juvenile	Improved grassland	2	12:40	Hunting	0-20	-	15	-	-	-	-
07/08/24	1	Unknown	Juvenile	Rough grassland	1	12:58	Hunting	0-20	-	72	-	-	-	-
07/08/24	7	Unknown	Juvenile	Improved grassland	1	13:09	Hunting	0-20	-	10	-	-	-	-
07/08/24	7	Male	Adult	Improved grassland	1	13:09	Mobbing	0-20	-	10	-	-	-	-
08/08/24	8	Unknown	Unknown	Rough grassland	1	08:31	Hunting	0-20	-	74	-	-	-	-
08/08/24	2	Female	Adult	Rough grassland	1	10:02	Hunting	50-100	-	-	-	360	-	-
08/08/24	8	Unknown	Unknown	Rough grassland	1	10:25	Hunting	0-20	-	45	-	-	-	-
08/08/24	5	Unknown	Unknown	Improved grassland	1	10:34	Hunting	0-20	-	5	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
08/08/24	8	Unknown	Unknown	Rough grassland	1	11:18	Flying	0-20	-	53	-	-	-	-
08/08/24	8	Unknown	Unknown	Rough grassland	1	12:54	Hunting	0-50	-	30	178	-	-	-
08/08/24	8	Unknown	Unknown	Rough grassland	1	13:05	Hunting	20-50	-	-	212	-	-	-
08/08/24	2	Unknown	Unknown	Rough grassland	1	13:17	Hunting	20-100	-	-	500	100	-	-
06/09/24	5	Unknown	Juvenile	Improved grassland	1	13:25	Hunting	20-50	-	-	12	-	-	-
09/09/24	1	Unknown	Unknown	Rough grassland	1	10:23	Hunting	0-20	-	64	-	-	-	-
09/09/24	1	Unknown	Unknown	Rough grassland	1	12:13	Hunting	0-20	-	102	-	-	-	-
09/09/24	1	Unknown	Unknown	Rough grassland	1	13:46	Hunting	50-100	-	-	-	50	-	-
09/09/24	7	Unknown	Unknown	Scrub	1	13:47	Hunting	20-50	-	-	30	-	-	-

Table 66. VP survey flight activity results: lapwing

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2020/21 non-breeding season														
11/12/20	4	Male	Adult	Rough grassland, improved grassland	1	14:43	Flying	30-40	-	-	30	-	-	-
2022/23 breeding season														
04/11/22	6	Unknown	Unknown	Improved grassland	1	14:31	Flying	30	-	48	-	-	-	-
07/12/22	2	Unknown	Unknown	Improved grassland	2	13:00	Flying, perched	0-10	-	10	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
07/12/22	2	Unknown	Unknown	Improved grassland	24	13:08	Flying	0-60	-	70	80	30	-	-
07/12/22	7	Unknown	Unknown	Treeline	24	13:08	Flying	20-50	-	-	78	-	-	-
2023 breeding season														
10/08/23	8	Unknown	Juvenile	Lagoons	4	08:20	Flying	0-20	-	120	-	-	-	-
2023/24 non-breeding season														
14/11/23	2	Unknown	Unknown	Improved grassland	24	12:17	Flying	20-50	-	-	24	-	-	-
15/11/23	5	Unknown	Adult	Improved grassland	1	12:24	Flying	50-100	-	-	-	15	-	-
10/01/24	5	Unknown	Unknown	Improved grassland	2	13:12	Flying	20-50	-	-	41	-	-	-
10/01/24	2	Unknown	Unknown	Improved grassland	2	15:07	Flying	20-50	-	-	56	-	-	-

Table 67. VP survey flight activity results: lesser black-backed gull

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2020/21 non-breeding season														
20/11/20	3	Unknown	Unknown	Improved grassland	30	9.26	Flying	20-50	-	300	-	-	-	-
20/11/20	3	Unknown	Unknown	Improved grassland	30	10.23	Flying	60-80	-	-	-	120	-	-
17/02/21	2	Unknown	Unknown	Rough & improved grassland, grassland moorland	1	13:42	Flying	80-100	-	-	-	600	-	-
2021 breeding season														

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
27/05/21	3	Unknown	Unknown	Rough & improved grassland, grassland moorland	3	06:10	Flying	150	-	-	-	-	75	-
17/06/21	4	Unknown	Unknown	Rough & improved grassland, scrub	22	21:50	Flying, commuting	100	-	-	-	85	-	-
22/07/21	4	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	8	07:22	Flying	150	-	-	-	-	54	-
23/08/21	4	Unknown	Unknown	Rough grassland, improved grassland	15	13:35	Flying, commuting	100	-	-	-	54	-	-
23/08/21	3	Unknown	Unknown	Rough & improved grassland, grassland moorland	5	17:55	Flying, commuting	80	-	-	-	75	-	-
23/08/21	4	Unknown	Unknown	Improved grassland	30	14:10	Soaring, circling	100	-	-	-	300	-	-
25/08/21	4	Unknown	Unknown	Rough & improved grassland, grassland moorland	3	18:07	Flying	80	-	-	-	45	-	-
15/09/21	2	Unknown	Unknown	Rough & improved grassland, grassland moorland, 2 nd rotation forest	25	13:40	Soaring, circling	80-300	-	-	-	160	160	160
20/09/21	1	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	7	12:52	Flying	100	-	-	-	75	-	-
2021/22 non-breeding season														
06/10/21	2	Unknown	Unknown	Improved grassland	1	10:48	Flying	20-50	-	-	30	-	-	-
06/10/21	1	Unknown	Unknown	Improved grassland	7	12:39	Flying	0-20	-	40	80	20	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
06/10/21	1	Unknown	Unknown	Improved grassland	5	13:48	Flying	20-50	-	-	60	-	-	-
06/10/21	1	Unknown	Unknown	Improved grassland	7	13:52	Flying	20-50	-	-	25	-	-	-
06/10/21	1	Unknown	Unknown	Improved grassland	1	14:12	Flying	20-50	-	-	10	-	-	-
06/10/21	1	Unknown	Unknown	Improved grassland	1	15:16	Flying	20-50	-	-	12	-	-	-
12/10/21	3	Unknown	Unknown	Improved grassland	60	13:10	Flying	20-50	-	-	60	180	-	-
12/10/21	4	Unknown	Unknown	Improved grassland	60	13:10	Flying	0-20	-	240	240	135	25	-
12/10/21	3	Unknown	Adult	Improved grassland	2	13:45	Flying	0-20	-	10	-	-	-	-
03/11/21	1	Unknown	Unknown	Improved grassland	1	13:39	Flying	100-180	-	-	-	-	55	-
03/11/21	1	Unknown	Unknown	Improved grassland	1	15:16	Flying	100-180	-	-	-	-	35	-
17/11/21	3	Unknown	Unknown	Improved grassland	19	13:45	Flying	20-50	-	-	65	180	-	-
25/11/21	1	Unknown	Unknown	Improved grassland	11	11:24	Flying	100-180	-	-	-	-	15	-
25/11/21	1	Unknown	Unknown	Improved grassland	14	12:32	Flying	>180	-	-	-	-	-	15
09/12/21	4	Unknown	Unknown	Improved grassland	2	11:40	Flying	20-50	-	-	5	25	-	-
09/12/21	4	Unknown	Unknown	Improved grassland	6	12:33	Flying	0-20	-	10	-	-	-	-
09/12/21	4	Unknown	Unknown	Improved grassland	3	12:40	Circling	0-20	-	6	-	-	-	-
09/12/21	4	Unknown	Unknown	Improved grassland	1	14:15	Flying	20-50	-	-	3	-	-	-
09/12/21	4	Unknown	Unknown	Improved grassland	1	14:05	Flying	20-50	-	-	4	-	-	-
09/12/21	4	Unknown	Unknown	Improved grassland	2	14:59	Flying	50-100	-	-	-	6	-	-
18/12/21	1	Unknown	Unknown	Improved grassland	1	09:50	Flying	50-100	-	-	-	15	-	-
18/12/21	1	Unknown	Unknown	Improved grassland	21	10:33	Flying	50-100	-	-	-	34	-	-
18/12/21	1	Unknown	Unknown	Improved grassland	25	11:21	Flying	20-50	-	-	25	70	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
18/12/21	1	Unknown	Unknown	Improved grassland	1	12:59	Flying	20-50	-	-	15	-	-	-
03/02/22	4	Unknown	Unknown	Improved grassland	21	10:47	Perched on ground	-	3,480	-	-	-	-	-
03/02/22	4	Unknown	Unknown	Improved grassland	40	12:40	Flying	20-50	-	-	540	420	-	-
03/02/22	4	Unknown	Unknown	Improved grassland	30	13:25	Flying	20-50	-	-	67	-	-	-
03/02/22	4	Unknown	Unknown	Improved grassland	10	14:18	Flying	0-20	23	-	-	-	-	-
25/02/22	2	Unknown	Unknown	Improved grassland	8	14:42	Flying	50-100	-	-	-	30	-	-
28/02/22	1	Unknown	Unknown	Improved grassland	8	14:40	Flying	50-100	-	-	-	15	-	-
28/02/22	1	Unknown	Unknown	Improved grassland	2	15:38	Flying	50-100	-	-	-	12	-	-
18/03/22	4	Unknown	Unknown	Improved grassland	24	07:50	Flying	40	-	-	50	-	-	-
18/03/22	4	Unknown	Unknown	Improved grassland	19	9.38	Flying	30-60	-	-	110	125	-	-
2022 breeding season														
24/05/22	3	Unknown	Adult	Improved grassland	1	12 07	Flying, circling	30	-	-	120	-	-	-
20/07/22	3	Unknown	Juvenile	Improved grassland	1	12:26	Flying, circling, hunting	-	-	-	-	73	-	-
17/08/22	3	Unknown	Unknown	Improved grassland	48	12.48	Flying, circling, soaring	150	-	-	-	-	72	-
19/08/22	4	Unknown	Adult	Improved grassland	1	09 14	Flying	70	-	-	-	12	-	-
19/08/22	4	Unknown	Adult	Improved grassland	6	10 56	Flying	15-20	-	30	-	-	-	-
19/08/22	4	Unknown	Adult	Improved grassland	7	14 07	Flying	30	-	-	17	-	-	-
23/09/22	2	Unknown	Adult	Improved grassland	1	13:54	Flying	20	-	48	-	-	-	-
23/09/22	2	Unknown	Adult	Improved grassland	4	13:56	Flying	30-40	-	-	110	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
23/09/22	6	Unknown	Adult	Rough grassland	1	14:48	Flying	30	-	-	10	-	-	-
23/09/22	7	Unknown	Immature	Rough grassland	4	14:28	Flying	30	-	-	230	-	-	-
2022/23 non-breeding season														
07/10/22	8	Unknown	Adult	Improved grassland, scrub	1	13:33	Circling, soaring	20-80	-	50	50	90	-	-
07/10/22	5	Unknown	Juvenile	Improved grassland	1	13:28	Flying	25	-	-	63	-	-	-
07/10/22	5	Unknown	Unknown	Improved grassland	4	14:31	Flying	20-30	-	-	202	-	-	-
07/10/22	6	Unknown	Adult	Improved grassland	3	14:16	Flying	50-100	-	-	-	240	-	-
07/10/22	6	Unknown	Adult	Improved grassland	14	14:24	Flying	80	-	-	-	180	-	-
07/10/22	7	Unknown	Immature	Rough grassland	1	12:31	Flying	20-40	-	-	43	-	-	-
07/10/22	7	Unknown	Immature	Rough grassland	1	14:15	Flying	30-60	-	-	25	25	-	-
04/11/22	2	Unknown	Juvenile	Improved grassland	6	12:42	Flying	50-100	-	-	-	7	-	-
04/11/22	6	Unknown	Unknown	Improved grassland	2	11:56	Flying	40-50	-	-	-	152	-	-
04/11/22	6	Unknown	Unknown	Improved grassland	3	12:39	Flying	30-40	-	-	76	-	-	-
04/11/22	6	Unknown	Unknown	Improved grassland	2	12:50	Flying	20-25	-	53	-	-	-	-
17/01/23	8	Unknown	Juvenile	Improved grassland	1	12:22	Flying	50-100	-	-	-	65	-	-
17/01/23	8	Unknown	Unknown	Improved grassland	2	15:51	Flying	50-100	-	-	-	166	-	-
17/01/23	8	Unknown	Unknown	Improved grassland	2	16:08	Flying	20-50	-	-	84	-	-	-
17/01/23	1	Unknown	Immature	Improved grassland	1	12:20	Flying	20-50	-	-	109	-	-	-
17/01/23	1	Unknown	Immature	Improved grassland	2	13:34	Flying	20-50	-	-	196	-	-	-
17/01/23	1	Unknown	Adult	Improved grassland	1	16:08	Flying	20-50	-	-	60	-	-	-
17/01/23	1	Unknown	Unknown	Improved grassland	11	16:18	Flying	20-50	-	-	54	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
17/01/23	2	Unknown	Adult	Rough grassland	1	15:55	Flying	50-100	-	-	-	60	-	-
17/01/23	2	Unknown	Unknown	Rough grassland	3	16:04	Flying	50-100	-	-	-	50	-	-
17/01/23	2	Unknown	Unknown	Rough grassland	11	16:17	Flying	20-50	-	-	40	-	-	-
17/01/23	5	Unknown	Unknown	Improved grassland	2	12:20	Flying	0-20	-	20	-	-	-	-
17/01/23	5	Unknown	Unknown	Improved grassland	1	14:46	Flying	20-50	-	-	30	-	-	-
13/02/23	1	Unknown	Unknown	River, improved grassland	1	09:11	Flying	100-200	-	-	-	-	125	-
13/02/23	5	Unknown	Adult	Improved grassland	1	09:11	Flying	100-130	-	-	-	-	70	-
2023 breeding season														
09/05/23	2	Unknown	Unknown	Improved grassland	1	08:27	Flying	50-100	-	-	-	132	-	-
09/05/23	8	Unknown	Unknown	Lake	1	11:12	Flying	0-50	-	126	20	-	-	-
13/06/23	8	Unknown	Mixed group	Improved grassland	2	07:46	Flying	0-20	-	107	-	-	-	-
13/06/23	7	Unknown	Unknown	Rough grassland	1	08:50	Flying	0-20	-	10	-	-	-	-
13/06/23	1	Unknown	Unknown	Improved grassland	1	10:06	Soaring	50-100	-	-	-	333	-	-
13/06/23	1	Unknown	Unknown	Improved grassland	6	10:08	Flying	20-50	-	-	213	-	-	-
13/06/23	2	Unknown	Unknown	Improved grassland	4	10:14	Flying	0-50	-	20	50	-	-	-
13/06/23	8	Unknown	Adult	Improved grassland	2	10:49	Flying	0-50	-	30	109	-	-	-
13/06/23	1	Unknown	Unknown	Improved grassland	1	11:14	Flying	50-100	-	-	-	196	-	-
13/06/23	8	Unknown	Unknown	Improved grassland	3	12:04	Flying	20-50	-	-	85	-	-	-
13/06/23	2	Unknown	Unknown	Improved grassland	34	12:06	Flying	-	-	-	-	-	-	-
13/06/23	1	Unknown	Unknown	Improved grassland	2	12:09	Flying	0-20	-	77	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13/07/23	2	Unknown	Juvenile	Improved grassland	1	13:22	Flying	0-50	-	109	480	-	-	-
14/09/23	5	Unknown	Unknown	Improved grassland	1	08:24	Flying	20-100	-	-	35	41	-	-
14/09/23	7	Unknown	Unknown	River	1	09:03	Flying	50-100	-	-	-	38	-	-
14/09/23	2	Unknown	Unknown	Improved grassland	4	09:17	Circling	20-50	-	-	50	-	-	-
14/09/23	6	Unknown	Unknown	Improved grassland	1	09:19	Flying	20-50	-	-	86	-	-	-
14/09/23	7	Unknown	Unknown	River	2	09:32	Flying	20-50	-	-	52	-	-	-
14/09/23	8	Unknown	Unknown	Improved grassland	2	09:35	Flying	0-20	-	10	-	-	-	-
14/09/23	5	Unknown	Mixed group	Improved grassland	11	09:38	Flying	20-50	-	-	50	-	-	-
14/09/23	6	Unknown	Unknown	River	11	09:40	Flying	20-100	-	-	145	133	-	-
14/09/23	8	Unknown	Unknown	Improved grassland	11	09:40	Flying	20-100	-	-	80	90	-	-
14/09/23	6	Unknown	Unknown	Improved grassland	7	09:48	Flying	20-50	-	-	92	-	-	-
14/09/23	8	Unknown	Unknown	Improved grassland	7	09:51	Flying	20-50	-	-	130	-	-	-
14/09/23	5	Unknown	Mixed group	Improved grassland	10	10:37	Flying	50-100	-	-	-	130	-	-
14/09/23	8	Unknown	Unknown	Improved grassland	1	10:48	Flying	20-50	-	-	18	-	-	-
14/09/23	2	Unknown	Unknown	Improved grassland	1	10:53	Flying	20-50	-	-	15	-	-	-
14/09/23	6	Unknown	Unknown	Improved grassland	3	12:49	Flying	20-50	-	-	267	-	-	-
14/09/23	2	Unknown	Unknown	Improved grassland	6	12:53	Circling	100-180	-	-	-	-	50	-
2023/24 non-breeding season														
10/01/24	2	Unknown	Unknown	Improved grassland	1	11:05	Flying	20-50	-	-	42	-	-	-
10/01/24	2	Unknown	Unknown	Improved grassland	8	12:28	Flying	100-180	-	-	-	-	230	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
10/01/24	2	Unknown	Unknown	Improved grassland	1	16:49	Flying	50-100	-	-	-	83	-	-
10/10/23	8	Unknown	Unknown	Improved grassland	44	13:07	Flying	20-50	-	-	264	-	-	-
12/12/23	2	Unknown	Unknown	Improved grassland	6	08:51	Flying	50-100	-	-	-	95	-	-
12/12/23	8	Unknown	Unknown	Improved grassland	1	09:02	Flying	20-50	-	-	50	-	-	-
12/12/23	5	Unknown	Unknown	Improved grassland	22	09:07	Flying	20-50	-	-	166	-	-	-
12/12/23	2	Unknown	Unknown	Improved grassland	28	09:12	Flying	50-100	-	-	-	94	-	-
12/12/23	8	Unknown	Adult	Improved grassland	30	09:15	Flying	20-50	-	-	90	-	-	-
12/12/23	5	Unknown	Unknown	Improved grassland	1	09:51	Flying	20-50	-	-	68	-	-	-
12/12/23	8	Unknown	Adult	Pond	3	10:26	Flying	0-20	-	20	-	-	-	-
12/12/23	2	Unknown	Unknown	River	1	11:47	Flying	0-20	-	50	-	-	-	-
12/12/23	8	Unknown	Unknown	Improved grassland	1	12:25	Flying	20-50	-	-	30	-	-	-
12/12/23	2	Unknown	Unknown	Improved grassland	17	12:51	Flying	50-100	-	-	-	90	-	-
12/12/23	2	Unknown	Unknown	Improved grassland	5	13:44	Circling	100-180	-	-	-	-	222	-
12/12/23	5	Unknown	Unknown	Improved grassland	1	13:53	Flying	20-50	-	-	26	-	-	-
12/12/23	5	Unknown	Unknown	Improved grassland	1	13:54	Flying	20-50	-	-	41	-	-	-
12/12/23	8	Unknown	Unknown	Improved grassland	1	14:27	Flying	20-50	-	-	30	-	-	-
13/12/23	6	Unknown	Unknown	River	4	09:48	Flying	100-180	-	-	-	-	82	-
14/11/23	1	Unknown	Unknown	Rough grassland	9	13:13	Flying	20-50	-	-	53	-	-	-
14/11/23	7	Unknown	Adult	Improved grassland	7	15:54	Flying	50-100	-	-	-	95	-	-
14/11/23	7	Unknown	Adult	Improved grassland	2	16:40	Flying	50-100	-	-	-	40	-	-
15/11/23	8	Unknown	Adult	Improved grassland	1	11:09	Flying	20-50	-	-	20	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
18/03/24	7	Unknown	Unknown	Improved grassland	3	13:01	Flying	20-50	-	-	95	-	-	-
19/03/24	6	Unknown	Unknown	Improved grassland	4	14:28	Flying	100-180	-	-	-	-	128	-
2024 breeding season														
11/06/24	2	Unknown	Unknown	Improved grassland	3	16:00	Flying	0-20	-	86	-	-	-	-
11/06/24	5	Unknown	Unknown	Improved grassland	1	19:32	Flying	0-20	-	40	-	-	-	-
11/06/24	5	Unknown	Mixed group	Improved grassland	8	19:34	Flying	0-20	-	36	-	-	-	-
09/07/24	8	Unknown	Unknown	Improved grassland	1	08:41	Flying	20-50	-	-	77	-	-	-
09/07/24	2	Unknown	Juvenile	Improved grassland	1	08:44	Flying	0-20	-	31	-	-	-	-
10/07/24	8	Unknown	Juvenile	Improved grassland	1	11:21	Flying	0-20	-	65	-	-	-	-
10/07/24	1	Unknown	Unknown	Rough grassland	1	07:34	Flying	0-20	-	15	-	-	-	-
10/07/24	1	Unknown	Unknown	Rough grassland	2	07:58	Flying	20-100	-	-	10	52	-	-
10/07/24	7	Unknown	Unknown	Rough grassland	1	08:16	Flying	50-100	-	-	-	6	-	-
10/07/24	6	Unknown	Unknown	Improved grassland	1	08:17	Flying	0-20	-	35	-	-	-	-
10/07/24	6	Unknown	Unknown	Improved grassland	2	08:17	Flying	20-50	-	-	75	-	-	-
10/07/24	6	Unknown	Unknown	Improved grassland	1	13:08	Flying	20-50	-	-	68	-	-	-
07/08/24	6	Unknown	Unknown	Improved grassland	1	08:47	Flying	0-20	-	7	-	-	-	-
07/08/24	1	Unknown	Unknown	Improved grassland	1	09:02	Flying	20-50	-	-	104	-	-	-
07/08/24	6	Unknown	Unknown	Improved grassland	1	09:28	Flying	0-20	-	5	-	-	-	-
08/08/24	8	Unknown	Unknown	Rough grassland	6	09:27	Flying	20-50	-	-	82	-	-	-
08/08/24	2	Unknown	Juvenile	Scrub	5	09:28	Flying	50-100	-	-	-	50	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
06/09/24	5	Unknown	Mixed group	Improved grassland	3	07:15	Flying	20-50	-	-	8	-	-	-
06/09/24	8	Unknown	Unknown	Improved grassland	1	07:43	Flying	0-50	-	60	108	-	-	-
06/09/24	5	Unknown	Juvenile	Improved grassland	1	12:44	Flying	20-50	-	-	6	-	-	-

Table 68. VP survey flight activity results: little egret

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2020/21 non-breeding season														
19/11/20	1	Unknown	Adult	Improved grassland	1	12:20	Flying	-	-	180	-	-	-	-
2021 breeding season														
24/05/21	1	Unknown	Unknown	Rough grassland, scrub	1	07:48	Flying	15-20	-	45	-	-	-	-
2021/22 non-breeding season														
06/10/21	2	Unknown	Unknown	Improved grassland	1	10:52	Flying	0-20	-	20	-	-	-	-
25/02/22	2	Unknown	Unknown	Improved grassland	1	13:22	Flying	0-20	-	5	-	-	-	-
2022 breeding season														
20/04/22	2	Unknown	Unknown	Improved grassland	1	16:22	Flying	0-1	3	2	-	-	-	-
20/04/22	2	Unknown	Unknown	Improved grassland	1	16:24	Flying	0-1	60	1	-	-	-	-
20/04/22	2	Unknown	Unknown	Improved grassland, trees	2	16:47	Flying	0-20	-	2	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
20/04/22	2	Unknown	Unknown	Improved grassland	2	18:35	Flying	20	-	15	-	-	-	-
20/04/22	2	Unknown	Unknown	Improved grassland	1	18:47	Flying	0-20	-	6	-	-	-	-
2022/23 non-breeding season														
04/11/22	1	Unknown	Unknown	River, rough grassland	1	-	Flying, perched	0-50	-	30	30	-	-	-
17/01/23	8	Unknown	Unknown	Improved grassland	2	11:36	Flying	0-20	-	32	-	-	-	-
17/01/23	8	Unknown	Unknown	Improved grassland	1	12:13	Flying	0-20	-	78	-	-	-	-
17/01/23	8	Unknown	Unknown	Improved grassland	1	13:38	Flying	0-20	-	80	-	-	-	-
17/01/23	8	Unknown	Unknown	Improved grassland	1	15:16	Flying	0-20	-	62	-	-	-	-
17/01/23	1	Unknown	Unknown	Improved grassland, trees	1	14:40	Flying	0-20	-	10	-	-	-	-
17/01/23	2	Unknown	Adult	Scrub	1	11:41	Perched	0-20	-	-	-	-	-	-
17/01/23	2	Unknown	Unknown	Rough grassland	3	12:58	Flying	0-20	-	10	-	-	-	-
17/01/23	2	Unknown	Unknown	Rough grassland	4	13:35	Flying	5	-	-	5	-	-	-
13/02/23	2	Unknown	Unknown	Rough grassland, 1st rotation forest	1	12:24	Flying	0-50	-	35	106	-	-	-
13/02/23	2	Unknown	Adult	Improved grassland, 1st rotation forest	1	13:31	Flying	0-20	-	112	-	-	-	-
2023 breeding season														
13/04/23	8	Unknown	Adult	Rough grassland	2	15:41	Flying	0-50	-	40	11	-	-	-
13/04/23	7	Unknown	Unknown	Rough grassland	1	15:53	Flying	0-20	-	7	-	-	-	-
13/04/23	7	Unknown	Unknown	River	1	16:07	Flying	0-20	-	49	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13/04/23	2	Unknown	Adult	Rough grassland	1	16:14	Flying	0-20	-	40	-	-	-	-
13/04/23	8	Unknown	Adult	Rough grassland	2	17:18	Flying	0-50	-	20	110	-	-	-
09/05/23	2	Unknown	Unknown	Improved grassland	1	11:29	Flying	0-20	-	3	-	-	-	-
09/05/23	2	Unknown	Unknown	Improved grassland	1	11:40	Flying	0-20	-	48	-	-	-	-
09/05/23	7	Unknown	Unknown	River	1	12:02	Flying	0-20	-	10	-	-	-	-
09/05/23	1	Unknown	Unknown	Rough grassland	1	12:20	Flying	0-20	-	8	-	-	-	-
09/05/23	8	Unknown	Unknown	Lake	1	12:44	Flying	0-20	-	117	-	-	-	-
13/06/23	6	Unknown	Unknown	Improved grassland	1	07:56	Flying	20-50	-	-	15	-	-	-
13/06/23	1	Unknown	Unknown	Improved grassland	1	07:57	Flying	0-20	-	17	-	-	-	-
13/06/23	1	Unknown	Unknown	Improved grassland	1	09:39	Flying	20-50	-	-	129	-	-	-
13/07/23	8	Unknown	Unknown	Pond	1	07:16	Flying	0-20	-	15	-	-	-	-
13/07/23	7	Unknown	Unknown	Woodland	2	13:15	Perching	-	-	-	-	-	-	-
2023/24 non-breeding season														
10/10/23	8	Unknown	Unknown	Improved grassland	1	13:30	Flying	0-20	-	54	-	-	-	-
11/10/23	6	Unknown	Unknown	Improved grassland	1	13:35	Flying	0-20	-	30	-	-	-	-
15/11/23	8	Unknown	Unknown	Rough grassland	1	11:33	Flying	0-20	-	20	-	-	-	-
15/11/23	5	Unknown	Unknown	Improved grassland	1	16:05	Flying	50-100	-	-	-	18	-	-
12/12/23	8	Unknown	Unknown	Pond	1	08:49	Flying	0-20	-	25	-	-	-	-
12/12/23	2	Unknown	Unknown	River	1	10:42	Flying	0-20	-	36	-	-	-	-
12/12/23	5	Unknown	Unknown	Improved grassland	1	12:19	Flying	0-20	-	45	-	-	-	-
13/12/23	7	Unknown	Unknown	Improved grassland	2	08:52	Flying	0-20	-	75	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13/12/23	1	Unknown	Unknown	Rough grassland	1	09:02	Flying	0-20	-	21	-	-	-	-
13/12/23	7	Unknown	Unknown	Improved grassland	1	13:18	Flying	0-20	-	26	-	-	-	-
10/01/24	2	Unknown	Unknown	River	3	11:46	Flying	0-50	-	228	45	-	-	-
10/01/24	2	Unknown	Unknown	River	2	12:01	Flying	0-20	-	48	-	-	-	-
10/01/24	2	Unknown	Unknown	Improved grassland	2	12:58	Flying	0-20	-	73	-	-	-	-
10/01/24	8	Unknown	Adult	Improved grassland	1	13:07	Flying	20-50	-	-	25	-	-	-
11/01/24	7	Unknown	Adult	Improved grassland	1	12:59	Flying	0-20	-	30	-	-	-	-
11/01/24	7	Unknown	Adult	Improved grassland	2	15:54	Flying	20-50	-	-	35	-	-	-
11/01/24	1	Unknown	Unknown	Rough grassland	2	16:01	Flying	0-20	-	25	-	-	-	-
15/02/24	5	Unknown	Unknown	Improved grassland	1	11:45	Flying	0-20	-	18	-	-	-	-
14/03/24	8	Unknown	Unknown	Improved grassland	1	13:49	Flying	0-20	-	25	-	-	-	-
14/03/24	8	Unknown	Unknown	Improved grassland	1	15:36	Flying	0-20	-	35	-	-	-	-
14/03/24	2	Unknown	Unknown	Rough grassland	4	17:42	Flying	0-20	-	82	-	-	-	-
19/03/24	6	Unknown	Unknown	Rough grassland	4	15:45	Flying	0-20	-	20	-	-	-	-
2024 breeding season														
08/04/24	2	Unknown	Unknown	-	1	07:37	Flying	-	-	-	-	-	-	-
08/04/24	8	Unknown	Unknown	Pond	2	07:50	Flying	0-20	-	56	-	-	-	-
08/04/24	2	Unknown	Adult	Improved grassland	1	07:52	Flying	0-20	-	11	-	-	-	-
08/04/24	2	Unknown	Unknown	Improved grassland	1	08:25	Flying	0-20	-	9	-	-	-	-
08/04/24	2	Unknown	Unknown	Improved grassland	1	08:32	Flying	0-20	-	6	-	-	-	-
08/04/24	2	Unknown	Unknown	Improved grassland	1	11:49	Flying	0-20	-	11	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
08/04/24	2	Unknown	Unknown	Improved grassland	1	12:46	Flying	0-20	-	7	-	-	-	-
08/04/24	5	Unknown	Unknown	Improved grassland	1	13:20	Flying	0-20	-	40	-	-	-	-
09/05/24	8	Unknown	Unknown	Improved grassland	1	06:32	Flying	0-20	-	30	-	-	-	-
09/07/24	8	Unknown	Unknown	Improved grassland	1	10:59	Flying	0-20	-	37	-	-	-	-
11/04/24	7	Unknown	Unknown	Improved grassland	1	08:54	Flying	0-20	-	3	-	-	-	-
11/06/24	8	Unknown	Unknown	Pond	1	14:27	Flying	0-20	-	10	-	-	-	-
12/06/24	6	Unknown	Unknown	Improved grassland	1	20:25	Flying	0-20	-	30	-	-	-	-
14/05/24	7	Unknown	Unknown	Improved grassland	1	10:02	Flying	20-50	-	-	5	-	-	-

Table 69. VP survey flight activity results: mallard

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2020/21 non-breeding season														
23/10/20	4	Unknown	Unknown	Improved grassland	4	12.30	Swimming	-	-	-	-	-	-	-
19/11/20	1	Unknown	Unknown	Rough grassland, improved grassland	5	13:40	Flying	25	-	-	50	-	-	-
19/11/20	2	Unknown	Unknown	Rough grassland, improved grassland	7	9.30	Swimming	-	-	-	-	-	-	-
20/11/20	4	2 male/1 female	Adult	Rough grassland	3	-	Flying	20-50	-	-	300	-	-	-
19/01/21	2	Unknown	Unknown	Rough grassland	3	9.00	Swimming	-	-	-	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
21/01/21	3	Unknown	Unknown	Improved grassland	2	13:30	In drain	-	-	-	-	-	-	-
22/03/21	3	Unknown	Unknown	Improved grassland	3	13:00	In drain	-	-	-	-	-	-	-
2021 breeding season														
26/04/21	2	Unknown	Unknown	Rough grassland, improved grassland	1	19:22	Flying	50	-	-	-	28	-	-
29/04/21	2	Unknown	Unknown	Rough grassland, improved grassland	4	-	-	-	-	-	-	-	-	-
09/06/21	2	Unknown	Unknown	Rough & improved grassland, scrub, 2 nd rotation forest	2	18:20	Flying	60	-	-	-	35	-	-
21/07/21	2	Unknown	Unknown	Rough & improved grassland, scrub	3	07:32	Flying	50	-	-	24	-	-	-
17/08/21	2	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	3	19:50	Flying	20	-	20	-	-	-	-
20/09/21	2	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	4	10:12	Flying	80	-	-	-	38	-	-
2021/22 non-breeding season														
06/10/21	2	1 male/1 female	Adult	Improved grassland	2	11:06	Flying	0-20	-	10	10	20	-	-
04/11/21	2	1 male/1 female	Adult	River	2	09:25	On river	-	5	-	-	-	-	-
04/11/21	2	1 male/1 female	Adult	River	2	12:37	On river	-	10,800	-	-	-	-	-
04/11/21	2	1 male/1 female	Adult	River	5	13:30	On river	-	-	-	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
17/11/21	3	Unknown	Unknown	Scrub	4	12:58	Flying	0-20	-	35	-	-	-	-
23/12/21	2	1 male/1 female	Adult	Improved grassland	2	01:53	Flying	1-5	-	10	-	-	-	-
23/12/21	2	1 male/1 female	Adult	Improved grassland, river	2	09:28	Flying	0.5	-	30	-	-	-	-
23/12/21	2	3 male/3 female	Adult	River	6	12:23	On river	-	9,600	-	-	-	-	-
21/02/22	2	1 male/1 female	Adult	Improved grassland	4	10:58	Perched on ground	0-20	120	3	-	-	-	-
28/02/22	1	1 male/1 female	Adult	Improved grassland	2	11:41	Flying	0-20	-	5	-	-	-	-
02/03/22	3	1 male/1 female	Adult	2 nd rotation forest	2	10:45	Flying	20-50	-	-	56	-	-	-
02/03/22	3	1 male/1 female	Adult	Improved grassland	2	15:18	Flying	0-20	-	36	-	-	-	-
29/03/22	2	Female	Adult	Improved grassland, river	1	15:50	Flying	5	-	15	-	-	-	-
2022 breeding season														
20/04/22	2	Male	Adult	Improved grassland, trees	1	13:49	Flying	25-30	-	-	40	-	-	-
20/04/22	2	Male	Adult	None	1	14:54	Flying, circling, perched	7	-	6	-	-	-	-
20/04/22	2	Male	Adult	Improved grassland	2	17:00	Flying	15	-	3	-	-	-	-
20/04/22	2	2 male/1 female	Adult	Improved grassland	3	17:18	Flying	25	-	-	9	-	-	-
20/04/22	2	Unknown	Unknown	Improved grassland	3	17:22	Flying	60-80	-	-	-	35	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
20/04/22	2	Unknown	Unknown	Improved grassland	3	17:42	Flying	40	-	-	120	-	-	-
20/04/22	2	Unknown	Unknown	Improved grassland	1	17:43	Flying	35	-	-	20	-	-	-
20/04/22	2	Unknown	Unknown	Improved grassland	3	18:18	Flying	35	-	-	50	-	-	-
20/04/22	2	Unknown	Unknown	Improved grassland	3	18:18	Flying	30	-	-	60	-	-	-
20/04/22	2	Unknown	Unknown	Improved grassland	1	18:19	Flying	25-30	-	-	60	-	-	-
24/05/22	2	1 male/1 female	Adult	Unknown	2	09:06	Flying	15	-	18	-	-	-	-
21/07/22	2	Unknown	Unknown	Rough grassland	1	08:35	Flying	60	-	30	-	-	-	-
23/09/22	2	Unknown	Adult	Improved grassland	3	10:44	Flying	10-30	-	-	64	-	-	-
2022/23 non-breeding season														
07/10/22	8	Male	Adult	Rough grassland	1	09:25	Flying	5	-	10	-	-	-	-
07/10/22	8	Male, female	Adult	Improved grassland, scrub	9	09:45	Flying	10-20	-	45	-	-	-	-
07/10/22	8	Male, female	Adult	Rough grassland, improved grassland	3	13:25	Flying	15	-	50	-	-	-	-
07/10/22	6	Female	Adult	Improved grassland	1	11:34	Flying	30	-	10	-	-	-	-
04/11/22	2	Unknown	Adult	Improved grassland	6	15:15	Flying	50-100	-	-	-	7	-	-
17/01/23	8	Unknown	Unknown	Improved grassland	2	13:19	Flying	0-100	-	10	15	25	-	-
17/01/23	8	Unknown	Unknown	Improved grassland	8	15:47	Flying, perched	0-20	-	34	-	-	-	-
17/01/23	2	Unknown	Unknown	Rough grassland	2	13:19	Flying	0-80	-	15	15	17	-	-
13/02/23	1	Unknown	Unknown	River, improved grassland	2	11:17	Flying	50-100	-	-	-	55	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13/02/23	2	Male, female	Adult	Rough grassland	2	09:00	Flying	0-20	-	23	-	-	-	-
2023 breeding season														
13/04/23	8	Unknown	Unknown	Rough grassland	4	13:48	Flying	0-20	-	20	-	-	-	-
13/04/23	1	Unknown	Adult	Rough grassland	1	14:00	Flying	0-50	-	4	15	-	-	-
13/04/23	7	Unknown	Unknown	Rough grassland	7	14:05	Flying	20-50	-	-	30	-	-	-
13/04/23	2	1 male/1 female	Adult	Rough grassland	2	15:39	Flying	0-20	-	6	-	-	-	-
13/04/23	8	Unknown	Unknown	Improved grassland	1	15:42	Flying	50-100	-	-	-	25	-	-
13/04/23	7	Unknown	Unknown	Rough grassland	2	16:11	Flying	0-20	-	12	-	-	-	-
13/04/23	1	Unknown	Adult	Rough grassland	1	16:17	Flying	0-20	-	10	-	-	-	-
13/04/23	1	Unknown	Adult	Improved grassland	1	16:24	Flying	0-20	-	13	-	-	-	-
13/04/23	5	Unknown	Adult	Improved grassland	1	17:39	Flying	20-50	-	-	7	-	-	-
13/04/23	6	Unknown	Adult	Rough grassland	2	17:59	Flying	0-20	-	32	-	-	-	-
13/04/23	6	Unknown	Adult	Rough grassland	1	18:13	Flying	0-20	-	88	-	-	-	-
13/04/23	6	Unknown	Adult	Rough grassland	1	18:33	Flying	20-50	-	-	93	-	-	-
13/04/23	1	Unknown	Adult	Rough grassland	3	18:44	Flying	0-50	-	20	35	-	-	-
13/04/23	8	Unknown	Adult	Improved grassland	1	18:45	Flying	20-100	-	-	30	10	-	-
13/04/23	1	Unknown	Adult	Rough grassland	3	18:52	Flying	20-50	-	-	15	-	-	-
13/04/23	7	Unknown	Unknown	Improved grassland	1	19:11	Flying	20-50	-	-	7	-	-	-
13/04/23	6	Mixed group	Adult	Rough grassland	3	19:25	Flying	-	-	-	-	-	-	-
13/04/23	7	Unknown	Unknown	Improved grassland	1	19:25	Flying	20-50	-	-	8	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13/04/23	7	Unknown	Unknown	Rough grassland	1	19:59	Flying	0-20	-	17	-	-	-	-
13/04/23	6	Unknown	Adult	Rough grassland	1	20:00	Flying	0-20	-	94	-	-	-	-
09/05/23	8	Unknown	Unknown	Lake	1	07:06	Flying	0-20	-	45	-	-	-	-
09/05/23	2	Unknown	Unknown	Rough grassland	1	07:07	Flying	0-20	-	6	-	-	-	-
09/05/23	6	Unknown	Unknown	Improved grassland	1	07:20	Flying	20-50	-	-	10	-	-	-
09/05/23	8	Unknown	Unknown	Lake	1	07:20	Flying	20-50	-	-	93	-	-	-
09/05/23	2	Unknown	Unknown	Rough grassland	1	07:22	Flying	20-50	-	-	25	-	-	-
09/05/23	7	Unknown	Unknown	River	1	07:23	Flying	0-20	-	20	-	-	-	-
09/05/23	1	Unknown	Unknown	Rough grassland	1	07:24	Flying	0-20	-	23	-	-	-	-
09/05/23	8	Unknown	Unknown	Lake	1	07:30	Flying	20-50	-	-	76	-	-	-
09/05/23	6	Male	Adult	Improved grassland	3	07:44	Flying	20-50	-	-	3	-	-	-
09/05/23	2	Unknown	Unknown	Rough grassland	3	08:03	Flying	0-20	-	12	-	-	-	-
09/05/23	7	Unknown	Unknown	River	1	08:23	Flying	50-100	-	-	-	30	-	-
09/05/23	8	Unknown	Unknown	Lake	3	11:44	Flying	0-20	-	20	-	-	-	-
09/05/23	1	Unknown	Unknown	Rough grassland	1	12:25	Flying	0-20	-	28	-	-	-	-
13/06/23	2	Unknown	Unknown	Scrub	2	08:59	Flying	0-20	-	20	-	-	-	-
13/06/23	7	Unknown	Unknown	Rough grassland	2	09:16	Flying	20-50	-	-	30	-	-	-
13/06/23	1	Unknown	Unknown	Improved grassland	2	09:18	Flying	20-50	-	-	117	-	-	-
13/07/23	1	Unknown	Unknown	River	1	07:23	Flying	20-50	-	-	42	-	-	-
13/07/23	8	Unknown	Unknown	Pond	1	07:24	Flying	20-50	-	-	40	-	-	-
13/07/23	7	Unknown	Unknown	Rough grassland	1	07:25	Flying	20-50	-	-	55	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13/07/23	8	Unknown	Unknown	Pond	1	07:39	Flying	0-20	-	10	-	-	-	-
13/07/23	8	Unknown	Unknown	Improved grassland	1	08:42	Flying	20-50	-	-	70	-	-	-
13/07/23	8	Unknown	Unknown	Improved grassland	1	09:17	Flying	20-50	-	-	40	-	-	-
13/07/23	8	Unknown	Unknown	Improved grassland	1	09:25	Flying	20-50	-	-	20	-	-	-
13/07/23	8	Unknown	Unknown	Pond	7	09:29	Flying	0-20	-	40	-	-	-	-
13/07/23	8	Unknown	Unknown	Improved grassland	1	09:36	Flying	0-20	-	30	-	-	-	-
13/07/23	2	Unknown	Unknown	Improved grassland	1	09:41	Flying	20-50	-	-	90	-	-	-
13/07/23	2	Unknown	Unknown	River	1	10:56	Flying	0-20	-	15	-	-	-	-
13/07/23	2	Unknown	Unknown	River	6	13:26	Flying	0-20	-	71	-	-	-	-
10/08/23	2	Unknown	Unknown	River	1	08:07	Flying	50-100	-	-	-	58	-	-
10/08/23	8	Unknown	Unknown	Improved grassland	1	08:07	Flying	0-20	-	18	-	-	-	-
10/08/23	8	Unknown	Unknown	Lagoons	1	11:18	Flying	0-50	-	10	30	-	-	-
10/08/23	2	Unknown	Unknown	River	1	11:22	Flying	0-20	-	56	-	-	-	-
14/09/23	8	Unknown	Unknown	Improved grassland	2	06:52	Flying	0-20	-	18	-	-	-	-
14/09/23	8	Unknown	Unknown	Improved grassland	1	07:15	Flying	20-50	-	-	10	-	-	-
14/09/23	6	Unknown	Unknown	Improved grassland	2	12:05	Flying	20-50	-	-	91	-	-	-
14/09/23	8	Unknown	Unknown	Rough grassland	2	15:37	Circling	20-50	-	-	40	-	-	-
2023/24 non-breeding season														
10/10/23	8	Unknown	Unknown	Improved grassland	2	10:02	Flying	0-20	-	38	-	-	-	-
11/10/23	7	Unknown	Unknown	Rough grassland	6	10:42	Flying	20-100	-	-	25	10	-	-
11/10/23	2	Unknown	Unknown	Improved grassland	5	11:15	Flying	50-100	-	-	-	9	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
11/10/23	2	Unknown	Unknown	Improved grassland	4	11:40	Flying	50-100	-	-	-	6	-	-
14/11/23	2	Unknown	Unknown	Improved grassland	2	11:32	Flying	0-20	-	12	-	-	-	-
14/11/23	2	Unknown	Unknown	Improved grassland	2	12:32	Flying	0-20	-	11	-	-	-	-
15/11/23	8	Unknown	Unknown	Improved grassland	2	14:09	Flying	0-50	-	20	15	-	-	-
15/11/23	8	Unknown	Unknown	Improved grassland	7	14:27	Flying	0-50	-	15	5	-	-	-
12/12/23	8	Mixed group	Adult	Pond	20	08:37	Flying	20-50	-	-	25	-	-	-
12/12/23	2	Unknown	Unknown	River	1	09:19	Flying	0-20	-	30	-	-	-	-
12/12/23	2	Unknown	Unknown	River	2	09:19	Flying	0-20	-	30	32	-	-	-
12/12/23	8	7 male/2 female	Adult	Pond	9	10:25	Flying	20-50	-	-	40	-	-	-
12/12/23	8	Unknown	Adult	Improved grassland	3	11:42	Flying	20-50	-	-	30	-	-	-
12/12/23	8	Unknown	Adult	Pond	2	11:47	Flying	20-50	-	-	15	-	-	-
13/12/23	7	Unknown	Unknown	Improved grassland	2	09:16	Flying	20-50	-	-	20	-	-	-
10/01/24	8	Unknown	Adult	Pond	2	11:15	Flying	20-50	-	-	15	-	-	-
15/02/24	2	Unknown	Unknown	Improved grassland	1	07:58	Flying	0-20	-	31	-	-	-	-
15/02/24	2	Unknown	Unknown	Improved grassland	1	08:10	Flying	-	-	-	-	-	-	-
15/02/24	2	Unknown	Unknown	Improved grassland	2	08:16	Flying	0-20	-	12	-	-	-	-
15/02/24	2	Unknown	Unknown	Improved grassland	1	09:17	Flying	0-20	-	9	-	-	-	-
15/02/24	2	Unknown	Unknown	Improved grassland	2	09:24	Flying	0-20	-	10	-	-	-	-
15/02/24	8	Unknown	Unknown	Pond	3	10:02	Flying	0-20	-	38	-	-	-	-
14/03/24	8	Unknown	Unknown	Improved grassland	1	12:21	Flying	0-20	-	40	-	-	-	-
14/03/24	2	Unknown	Unknown	Improved grassland	1	12:38	Flying	0-20	-	35	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
14/03/24	8	Unknown	Adult	Improved grassland	3	13:15	Flying	0-20	-	35	-	-	-	-
14/03/24	2	Unknown	Unknown	River	4	13:23	Flying	50-100	-	-	-	72	-	-
14/03/24	2	Unknown	Unknown	Improved grassland	2	15:36	Flying	0-20	-	35	-	-	-	-
14/03/24	5	Unknown	Unknown	Improved grassland	1	15:50	Flying	20-50	-	-	14	-	-	-
14/03/24	5	Unknown	Unknown	Improved grassland	1	16:32	Flying	0-20	-	32	-	-	-	-
14/03/24	8	Unknown	Unknown	Improved grassland	1	17:45	Flying	0-20	-	30	-	-	-	-
14/03/24	8	Unknown	Unknown	Improved grassland	5	17:54	Flying	0-20	-	25	-	-	-	-
18/03/24	7	Unknown	Unknown	Improved grassland	1	12:25	Flying	0-20	-	15	-	-	-	-
18/03/24	7	Mixed group	Unknown	Improved grassland	3	13:05	Flying	20-50	-	-	40	-	-	-
18/03/24	7	Unknown	Unknown	Improved grassland	1	14:10	Flying	0-20	-	30	-	-	-	-
18/03/24	7	Unknown	Unknown	Improved grassland	1	16:01	Flying	20-50	-	-	15	-	-	-
18/03/24	7	Unknown	Unknown	Improved grassland	3	17:31	Flying	0-20	-	20	-	-	-	-
18/03/24	7	Unknown	Unknown	Improved grassland	6	17:50	Flying	0-20	-	25	-	-	-	-
19/03/24	6	Unknown	Unknown	Improved grassland	1	16:29	Flying	0-20	-	45	-	-	-	-
19/03/24	1	Unknown	Unknown	Rough grassland	1	17:25	Flying	20-50	-	-	60	-	-	-
2024 breeding season														
08/04/24	8	Unknown	Unknown	Pond	6	07:48	Flying	20-50	-	-	68	-	-	-
08/04/24	2	Male	Adult	Improved grassland	1	07:52	Flying	0-20	-	21	-	-	-	-
08/04/24	2	Unknown	Unknown	Improved grassland	1	08:04	Flying	20-50	-	-	26	-	-	-
08/04/24	5	Unknown	Unknown	Improved grassland	1	08:04	Flying	0-20	-	26	-	-	-	-
08/04/24	8	Unknown	Unknown	Pond	1	08:10	Flying	0-20	-	37	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
08/04/24	2	Unknown	Unknown	Improved grassland	2	09:05	Flying	0-20	-	18	-	-	-	-
08/04/24	2	Unknown	Unknown	Improved grassland	2	11:08	Flying	0-20	-	12	-	-	-	-
08/04/24	2	Unknown	Unknown	Improved grassland	1	11:12	Flying	0-20	-	17	-	-	-	-
11/04/24	6	Unknown	Unknown	Improved grassland	1	07:42	Flying	20-50	-	-	13	-	-	-
11/04/24	1	Unknown	Unknown	Improved grassland	1	08:29	Flying	0-20	-	25	-	-	-	-
11/04/24	1	Unknown	Unknown	Improved grassland	1	09:07	Flying	0-20	-	15	-	-	-	-
11/04/24	1	Unknown	Unknown	Improved grassland	1	11:22	Flying	0-20	-	20	-	-	-	-
11/04/24	1	Unknown	Unknown	Improved grassland	1	12:00	Flying	0-20	-	25	-	-	-	-
11/04/24	6	Unknown	Unknown	Rough grassland	4	12:13	Flying	0-50	-	10	18	-	-	-
11/04/24	7	Unknown	Unknown	Improved grassland	3	12:26	Flying	0-20	-	5	-	-	-	-
09/05/24	2	Unknown	Unknown	Rough grassland	1	06:34	Flying	0-20	-	20	-	-	-	-
09/05/24	8	Unknown	Unknown	Pond	1	06:37	Flying	20-50	-	-	36	-	-	-
09/05/24	2	Unknown	Unknown	Improved grassland	1	06:39	Flying	20-50	-	-	15	-	-	-
09/05/24	8	Unknown	Unknown	Improved grassland	1	07:08	Flying	0-20	-	15	-	-	-	-
09/05/24	2	Unknown	Unknown	Improved grassland	2	08:40	Flying	0-20	-	45	-	-	-	-
09/05/24	8	Unknown	Unknown	Improved grassland	3	11:14	Flying	20-50	-	-	100	-	-	-
14/05/24	6	Unknown	Unknown	Improved grassland	1	06:54	Flying	0-20	-	20	-	-	-	-
14/05/24	7	Unknown	Unknown	Improved grassland	1	08:50	Flying	0-20	-	4	-	-	-	-
14/05/24	7	Unknown	Unknown	Improved grassland	3	10:04	Flying	0-50	-	15	5	-	-	-
14/05/24	1	Unknown	Unknown	River	1	10:19	Flying	0-20	-	20	-	-	-	-
14/05/24	6	Unknown	Unknown	Improved grassland	1	11:43	Flying	0-20	-	15	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
14/05/24	1	Unknown	Unknown	River	1	12:21	Flying	0-20	-	37	-	-	-	-
11/06/24	8	Unknown	Unknown	Pond	1	14:15	Flying	0-20	-	15	-	-	-	-
11/06/24	8	Unknown	Unknown	Improved grassland	1	15:38	Flying	20-50	-	-	30	-	-	-
12/06/24	6	Unknown	Unknown	Improved grassland	2	16:52	Flying	100-180	-	-	-	-	54	-
12/06/24	7	Unknown	Unknown	River	1	19:16	Flying	0-20	-	15	-	-	-	-
09/07/24	5	Unknown	Unknown	Improved grassland	1	06:54	Flying	50-100	-	-	-	7	-	-
09/07/24	8	Unknown	Unknown	Improved grassland	3	07:32	Flying	0-20	-	38	-	-	-	-
10/07/24	7	Unknown	Unknown	Rough grassland	1	06:56	Flying	0-20	-	5	-	-	-	-
10/07/24	7	Unknown	Unknown	Rough grassland	1	07:44	Flying	0-20	-	8	-	-	-	-
10/07/24	7	Unknown	Unknown	Rough grassland	2	08:42	Flying	20-50	-	-	10	-	-	-
10/07/24	6	Unknown	Unknown	River	2	08:43	Flying	0-20	-	22	-	-	-	-
10/07/24	6	Unknown	Unknown	River	1	09:21	Flying	20-50	-	-	40	-	-	-
06/09/24	8	Unknown	Unknown	Improved grassland	1	08:21	Flying	0-20	-	50	-	-	-	-
06/09/24	8	Unknown	Unknown	Pond	3	09:12	Flying	0-20	-	56	-	-	-	-
09/09/24	1	Unknown	Unknown	River	2	07:37	Flying	20-50	-	-	46	-	-	-
09/09/24	6	Unknown	Unknown	Improved grassland	1	08:02	Flying	20-50	-	-	5	-	-	-
09/09/24	7	Unknown	Unknown	Pond	3	09:12	Flying	0-20	-	56	-	-	-	-

Table 70. VP survey flight activity results: Mediterranean gull

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2022/23 non-breeding season														
17/01/23	2	Unknown	Adult	Rough grassland	1	15:55	Flying	50-100	-	-	-	60	-	-

Table 71. VP survey flight activity results: merlin

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2020/21 non-breeding season														
20/01/21	3	Male	Adult	-	1	11:54	Flying	1	-	50	-	-	-	-
21/01/21	3	Male	Adult	Improved grassland	1	14:25-15:13	Flying, mobbing	30-40	-	-	180	-	-	-
2022/23 non-breeding season														
07/12/22	2	Unknown	Unknown	River, improved grassland	1	09:24	Flying, perched	0-20	90	25	-	-	-	-

Table 72. VP survey flight activity results: moorhen

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2024 breeding season														
09/07/24	2	Unknown	Unknown	Improved grassland	1	08:54	Flying	0-20	-	9	-	-	-	-

Table 73. VP survey flight activity results: mute swan

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2021/22 non-breeding season														
18/01/21	2	Unknown	Unknown	Improved grassland	2	13.00	Swimming	-	-	-	-	-	-	-
19/01/21	2	Unknown	Unknown	Improved grassland	2	9.00	Swimming	-	-	-	-	-	-	-
2022/23 non-breeding season														
04/11/22	8	Unknown	Unknown	Improved grassland	2	10:22	Flying	5-30	-	10	15	-	-	-
17/01/23	8	Unknown	Unknown	Improved grassland	2	16:29	Flying, perched	0-20	-	22	-	-	-	-
2023 breeding season														
13/04/23	2	Unknown	Adult	Rough grassland	2	14:08	Flying	0-20	-	60	-	-	-	-
13/04/23	8	Unknown	Adult	Improved grassland	2	14:11	Flying	0-50	-	20	16	-	-	-
09/05/23	8	Unknown	Unknown	Lake	2	10:31	Flying	0-20	-	25	-	-	-	-
09/05/23	8	Unknown	Unknown	Lake	1	12:18	Flying	0-20	-	17	-	-	-	-
13/07/23	7	Unknown	Unknown	River	2	07:15	Perching	-	-	-	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2023/24 non-breeding season														
14/11/23	2	Unknown	Mixed group	Improved grassland	12	11:23	Flying	0-20	-	38	-	-	-	-
14/11/23	7	Unknown	Unknown	Rough grassland	1	11:30	Flying	0-20	-	25	-	-	-	-
14/11/23	7	Unknown	Unknown	Rough grassland	1	11:31	Flying	0-20	-	15	-	-	-	-
14/11/23	2	Unknown	Unknown	Improved grassland	1	13:39	Flying	0-20	-	24	-	-	-	-
12/12/23	8	Unknown	Unknown	Pond	2	09:17	Flying	0-20	-	30	-	-	-	-
12/12/23	8	Unknown	Adult	Pond	2	09:50	Flying	20-50	-	-	30	-	-	-
12/12/23	8	Unknown	Mixed group	Pond	3	10:20	Flying	0-20	-	25	-	-	-	-
12/12/23	2	Unknown	Mixed group	River	3	10:22	Flying	20-50	-	-	98	-	-	-
10/01/24	5	Unknown	Unknown	Rough grassland	1	11:31	Flying	20-50	-	-	27	-	-	-
10/01/24	8	Unknown	Adult	Pond	1	12:22	Flying	0-20	-	30	-	-	-	-
2024 breeding season														
09/05/24	8	Unknown	Unknown	Pond	1	06:43	Flying	0-20	-	26	-	-	-	-
09/05/24	6	Unknown	Unknown	Improved grassland	1	20:02	Flying	0-20	-	40	-	-	-	-

Table 74. VP survey flight activity results: peregrine

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2020/21 non-breeding season														
29/10/20	4	Male/female	Adult	Improved grassland	2	15:15	Mobbing, flying, circling	20-80	-	-	180	-	-	-
11/12/20	4	Male	Adult	Improved grassland, rough grassland	1	14:43	Flying	30-40	-	-	30	-	-	-
18/01/21	2	Unknown	Adult	Improved grassland, rough grassland	1	13.00	Perched	-	-	-	-	-	-	-
21/01/21	3	Male	Adult	Improved grassland	1	15:13	Flying, hovering	2-5	-	35	-	-	-	-
21/01/21	3	Male	Adult	Improved grassland	1	14:25-15:13	Flying, mobbing	30-40	-	-	180	-	-	-
2021 breeding season														
22/07/21	4	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	2	07:15	Flying	80	-	-	-	35	-	-
2022/23 non-breeding season														
07/10/22	8	Unknown	Adult	Improved grassland, scrub	1	09:45	Hunting	20	-	-	30	-	-	-
07/10/22	8	Unknown	Unknown	Rough grassland	1	11:25	Circling	10-20	-	40	-	-	-	-
07/10/22	7	Unknown	Unknown	Rough grassland	1	15:01	Flying	20-60	-	-	180	-	-	-
07/12/22	8	Unknown	Unknown	-	1	12:53	Flying	20-50	-	-	85	-	-	-
17/01/23	1	Unknown	Adult	Improved grassland	1	16:15	Hunting	0-20	-	103	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13/02/23	2	Unknown	Unknown	Rough grassland, improved grassland	1	10:06	Hunting	20-50	-	-	39	-	-	-
2023 breeding season														
09/05/23	8	Unknown	Adult	Rough grassland	1	06:36	Flying	0-20	-	75	-	-	-	-
09/05/23	2	Male	Adult	Improved grassland	1	10:28	Flying	20-50	-	-	102	-	-	-
09/05/23	8	Unknown	Unknown	Improved grassland	1	10:29	Flying	20-50	-	-	104	-	-	-
2023/24 non-breeding season														
11/10/23	6	Unknown	Unknown	Improved grassland	1	09:35	Flying	0-20	-	20	-	-	-	-
14/11/23	2	Male	Adult	Improved grassland	1	12:13	Hunting	0-20	-	17	-	-	-	-
15/11/23	5	Unknown	Juvenile	Improved grassland	1	11:45	Hunting	0-20	-	12	-	-	-	-
15/11/23	6	Unknown	Juvenile	Improved grassland	1	11:47	Flying	0-20	-	20	-	-	-	-
13/12/23	7	Unknown	Juvenile	Improved grassland	1	09:02	Flying	20-50	-	-	40	-	-	-
10/01/24	8	Unknown	Mixed group	Improved grassland	2	13:37	Flying	20-50	-	-	45	-	-	-
15/02/24	2	Male	Adult	Improved grassland	1	09:16	Hunting	0-20	-	28	-	-	-	-
15/02/24	8	Unknown	Unknown	Improved grassland	1	09:18	Flying	50-100	-	-	-	20	-	-
14/03/24	5	Male	Adult	Rough grassland	1	14:01	Hunting	0-20	-	15	-	-	-	-
2024 breeding season														
09/05/24	5	Unknown	Unknown	Improved grassland	1	12:35	Circling	50-100	-	-	-	219	-	-

Table 75. VP survey flight activity results: short-eared owl

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2023/24 non-breeding season														
10/01/24	2	Unknown	Unknown	Improved grassland	1	17:17	Hunting	0-20	-	40	-	-	-	-

Table 76. VP survey flight activity results: shoveler

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2022/23 non-breeding season														
17/01/23	8	Unknown	Unknown	Improved grassland	2	15:17	Flying, perched	0-20	-	35	-	-	-	-
17/01/23	8	Unknown	Unknown	Improved grassland	6	15:47	Flying, perched	0-20	-	34	-	-	-	-
2023/24 non-breeding season														
15/11/23	8	Unknown	Unknown	Pond	5	14:24	Flying	0-50	-	20	10	-	-	-
12/12/23	8	Unknown	Adult	Pond	4	09:30	Flying	20-50	-	-	25	-	-	-
14/03/24	8	Unknown	Unknown	Improved grassland	4	16:22	Circling	50-100	-	-	-	760	-	-

Table 77. VP survey flight activity results: snipe

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2020/21 non-breeding season														
20/11/20	4	Unknown	Unknown	Improved grassland	4	14:15	Flying	-	-	180	-	-	-	-
2021 breeding season														
20/09/21	2	Unknown	Unknown	Rough & improved grassland, scrub, grassland moorland	10	09:20	Flying, circling	50-100	-	-	-	420	-	-
2021/22 non-breeding season														
12/10/21	3	Unknown	Unknown	Improved grassland	1	11:09	Flying	20-50	-	-	18	-	-	-
03/11/21	1	Unknown	Unknown	Improved grassland	1	14.29	Perched on ground	-	-	-	-	-	-	-
2022 breeding season														
23/09/22	2	Unknown	Adult	Improved grassland	9	15:03	Flying, circling	20	-	157	-	-	-	-
23/09/22	2	Unknown	Adult	Improved grassland	29	15:12	Flying, circling	30	-	-	90	-	-	-
23/09/22	7	Unknown	Adult	Rough grassland	2	11:30	Flying	6	-	15	-	-	-	-
2022/23 non-breeding season														
07/10/22	7	Unknown	Unknown	Improved grassland	1	13:29	Flying	20	-	4	-	-	-	-
04/11/22	1	Unknown	Unknown	Rough grassland	2	14:50	Flying, perched on ground	0-20	-	10	-	-	-	-
04/11/22	6	Unknown	Unknown	Improved grassland	2	10:41	Flying	25-30	-	-	47	-	-	-
04/11/22	7	Unknown	Unknown	Rough grassland	11	14:06	Flying	80-100	-	-	-	20	-	-
04/11/22	8	Unknown	Unknown	Improved grassland	1	09:14	Flying	5	-	8	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
07/12/22	1	Unknown	Unknown	Rough grassland	1	13:35	Flying	5-10	-	10	-	-	-	-
07/12/22	2	Unknown	Unknown	Rough grassland	1	09:40	Flying, perched	1-10	-	10	-	-	-	-
07/12/22	8	Unknown	Unknown	Improved grassland	3	09:31	Flying	0-20	-	8	-	-	-	-
07/12/22	8	Unknown	Unknown	Improved grassland	1	10:20	Flying	0-20	-	6	-	-	-	-
07/12/22	8	Unknown	Unknown	Improved grassland	1	12:24	Flying	0-20	-	6	-	-	-	-
07/12/22	8	Unknown	Unknown	-	1	13:33	Flying	20-50	-	-	62	-	-	-
07/12/22	8	Unknown	Unknown	Improved grassland	1	13:37	Flying	0-20	-	19	-	-	-	-
07/12/22	8	Unknown	Unknown	Improved grassland	4	13:55	Flying, perched	20-50	-	-	35	-	-	-
07/12/22	8	Unknown	Unknown	Improved grassland	1	13:55	Flying	0-20	-	3	-	-	-	-
17/01/23	6	Unknown	Unknown	Improved grassland	1	15:03	Flying	20-50	-	-	7	-	-	-
17/01/23	6	Unknown	Unknown	Improved grassland	2	15:55	Flying	50-100	-	-	-	10	-	-
2023 breeding season														
14/09/23	6	Unknown	Unknown	Improved grassland	1	08:30	Flying	0-20	-	20	-	-	-	-
14/09/23	8	Unknown	Unknown	Improved grassland	1	08:35	Flying, calling	0-20	-	0	-	-	-	-
14/09/23	5	Unknown	Unknown	Improved grassland	11	08:50	Flying	0-50	-	90	90	-	-	-
14/09/23	8	Unknown	Unknown	Rough grassland	11	10:39	Circling	0-50	-	20	140	-	-	-
14/09/23	8	Unknown	Unknown	Rough grassland	17	15:12	Circling	0-20	-	110	-	-	-	-
14/09/23	8	Unknown	Unknown	Rough grassland	13	15:36	Flying	20-50	-	-	40	-	-	-
2023/24 non-breeding season														
10/10/23	1	Unknown	Unknown	Improved grassland	1	09:22	Flying	0-20	-	21	-	-	-	-
10/10/23	8	Unknown	Unknown	Improved grassland	14	09:45	Flying	0-20	-	32	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
10/10/23	8	Unknown	Unknown	Rough grassland	1	12:45	Flying	0-20	-	20	-	-	-	-
11/10/23	6	Unknown	Unknown	Improved grassland	4	09:43	Flying	20-50	-	-	45	-	-	-
11/10/23	6	Unknown	Unknown	Improved grassland	14	10:01	Flying	20-50	-	-	52	-	-	-
11/10/23	2	Unknown	Unknown	Improved grassland	3	11:17	Flying	50-100	-	-	-	6	-	-
11/10/23	5	Unknown	Unknown	Improved grassland	4	12:04	Flying	20-50	-	-	40	-	-	-
11/10/23	5	Unknown	Unknown	Improved grassland	5	12:51	Flying	20-50	-	-	30	-	-	-
11/10/23	2	Unknown	Unknown	Improved grassland	3	13:22	Flying	50-100	-	-	-	7	-	-
11/10/23	5	Unknown	Unknown	Improved grassland	19	13:25	Flying	20-50	-	-	45	-	-	-
11/10/23	2	Unknown	Unknown	Improved grassland	14	13:26	Flying	100-180	-	-	-	-	21	-
14/11/23	1	Unknown	Unknown	Rough grassland	2	12:26	Flying	0-20	-	38	-	-	-	-
14/11/23	2	Unknown	Unknown	Improved grassland	1	12:32	Flying	0-20	-	14	-	-	-	-
15/11/23	6	Unknown	Adult	Improved grassland	1	17:14	Flying	0-20	-	15	-	-	-	-
12/12/23	8	Unknown	Adult	Improved grassland	1	10:14	Flying	0-20	-	30	-	-	-	-
13/12/23	6	Unknown	Unknown	Improved grassland	2	11:58	Flying	0-20	-	24	-	-	-	-
10/01/24	8	Unknown	Adult	Improved grassland	3	11:33	Flying	0-20	-	15	-	-	-	-
10/01/24	2	Unknown	Unknown	River	2	12:28	Flying	0-20	-	10	-	-	-	-
11/01/24	7	Unknown	Adult	Improved grassland	1	11:11	Flying	20-50	-	-	10	-	-	-
11/01/24	1	Unknown	Unknown	Rough grassland	1	11:34	Flying	0-20	-	6	-	-	-	-
11/01/24	6	Unknown	Unknown	Improved grassland	1	12:36	Flying	20-50	-	-	22	-	-	-
15/02/24	2	Unknown	Unknown	Improved grassland	4	08:04	Flying	0-20	-	41	-	-	-	-
2024 breeding season														

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
06/09/24	8	Unknown	Unknown	Improved grassland	1	11:32	Flying	50-100	-	-	-	46	-	-
09/09/24	7	Unknown	Unknown	Improved grassland	1	11:32	Flying	50-100	-	-	-	46	-	-

Table 78. VP survey flight activity results: sparrowhawk

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2020/21 non-breeding season														
10/12/20	1	Unknown	Unknown	Rough grassland, improved grassland	1	15:07	Hunting	10	-	35	-	-	-	-
14/12/20	3	Female	Immature	Improved grassland	1	15:34	Flying, perched	30-40	-	-	90	-	-	-
15/02/21	4	Female	Adult	Improved grassland	1	15:54	Flying, circling	30-40	-	-	-	-	-	-
2021 breeding season														
09/06/21	2	Unknown	Unknown	Rough & improved grassland, scrub, 2 nd rotation forest	1	16:58	Soaring	100	-	-	-	180	-	-
23/09/21	3	Female	Unknown	Rough & improved grassland, grassland moorland, 2 nd rotation forest	1	09:48	Soaring, circling	100	-	-	-	180	-	-
2022 breeding season														
19/08/22	4	Female	Adult	Improved grassland, scrub	1	14:17	Flying, hunting	02-Mar	-	12	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
23/09/22	2	Female	Adult	Improved grassland	1	13:25	Flying	20	-	20	-	-	-	-
23/09/22	5	Male	Adult	Improved grassland	1	11:01	Flying	4-7	-	20	-	-	-	-
23/09/22	5	Female	Adult	Improved grassland	1	13:10	Hunting, perched	3-5	-	10	-	-	-	-
2022/23 non-breeding season														
07/10/22	1	Female	Juvenile	Improved grassland	1	09:53	Hunting	5-10	-	10	-	-	-	-
07/10/22	8	Female	Adult	Improved grassland, scrub	1	09:26	Flying	10	-	20	-	-	-	-
07/10/22	8	Female	Adult	Improved grassland, scrub	1	10:00	Circling	30-90	-	50	150	150	-	-
07/10/22	5	Female	Adult	Improved grassland	1	11:02	Flying, hunting	5-10	-	40	-	-	-	-
07/10/22	7	Unknown	Unknown	Improved grassland	1	09:37	Hunting	20	-	5	-	-	-	-
07/10/22	7	Unknown	Unknown	Improved grassland	1	09:39	Hunting	10	-	3	-	-	-	-
04/11/22	1	Unknown	Unknown	Rough grassland	1	14:50	Flying	0-20	-	20	-	-	-	-
17/01/23	2	Unknown	Unknown	Rough grassland	1	15:10	Hunting	1-5	-	21	-	-	-	-
13/02/23	1	Unknown	Unknown	-	1	08:34	Flying, hunting	0-20	-	30	-	-	-	-
13/02/23	1	Female	Adult	Improved grassland	1	13:28	Flying, hunting	0-20	-	24	-	-	-	-
13/02/23	2	Unknown	Unknown	Rough grassland	1	12:35	Hunting	0-20	-	30	-	-	-	-
13/02/23	7	Male	Adult	Improved grassland	1	12:49	Hunting	0-20	-	3	-	-	-	-
13/03/23	1	Female	Adult	Rough grassland	1	17:03	Flying	1	-	8	-	-	-	-
2023 breeding season														
10.08.2023	5	Unknown	Unknown	Improved grassland	1	11:58	Hunting	0-20	-	9	-	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
13.06.2023	5	Male	Adult	Improved grassland	1	09:24	Hunting	0-20	-	25	-	-	-	-
13.07.2023	2	Unknown	Unknown	Improved grassland	1	09:20	Hunting	0-20	-	64	-	-	-	-
13.07.2023	7	Female	Adult	Improved grassland	1	09:24	Flying	0-50	-	30	30	-	-	-
13.07.2023	2	Unknown	Unknown	Rough grassland	1	09:27	Hunting	0-20	-	10	-	-	-	-
13.07.2023	5	Unknown	Unknown	Rough grassland	1	13:17	Flying	20-100	-	-	140	40	-	-
14.09.2023	8	Unknown	Unknown	Improved grassland	1	08:24	Hunting	0-20	-	27	-	-	-	-
14.09.2023	6	Unknown	Unknown	Improved grassland	1	11:49	Flying	0-50	-	5	51	-	-	-
14.09.2023	8	Female	Adult	Rough grassland	1	11:51	Flying	0-20	-	45	-	-	-	-
14.09.2023	8	Female	Adult	Improved grassland	1	12:08	Flying	0-20	-	10	-	-	-	-
2023/24 non-breeding season														
11/10/23	5	Female	Adult	Improved grassland	1	12:16	Flying	0-20	-	55	-	-	-	-
14/11/23	2	Female	Adult	Improved grassland	1	12:07	Hunting	0-20	-	23	-	-	-	-
12/12/23	5	Female	Adult	Improved grassland	1	13:00	Flying	0-20	-	20	-	-	-	-
13/12/23	7	Female	Adult	Improved grassland	1	09:44	Flying	0-20	-	15	-	-	-	-
10/01/24	5	Female	Adult	Improved grassland	1	12:25	Hunting	0-20	-	13	-	-	-	-
10/01/24	8	Female	Adult	Improved grassland	1	13:41	Hunting	-	-	-	-	-	-	-
11/01/24	7	Unknown	Adult	Improved grassland	1	15:34	Flying	0-20	-	15	-	-	-	-
15/02/24	8	Female	Adult	Improved grassland	1	12:49	Hunting	0-20	-	37	-	-	-	-
15/02/24	8	Female	Adult	Improved grassland	1	12:55	Hunting	0-20	-	20	-	-	-	-
2024 breeding season														
07/08/24	1	Female	Adult	Rough grassland	1	10:14	Hunting	0-50	-	30	24	-	-	-

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
07/08/24	7	Female	Adult	Improved grassland	1	12:40	Mobbing	0-20	-	15	-	-	-	-
07/08/24	7	Female	Juvenile	Improved grassland	1	13:09	Mobbing	0-20	-	10	-	-	-	-
08/08/24	2	Female	Adult	Scrub	1	09:29	Flying	20-50	-	-	10	-	-	-
08/08/24	8	1 female/2 juveniles	Mixed group	Rough grassland	3	09:39	Flying	0-20	-	139	-	-	-	-
08/08/24	8	Unknown	Unknown	Rough grassland	1	12:28	Flying	0-20	-	40	-	-	-	-
08/08/24	5	Unknown	Unknown	Improved grassland	1	12:54	Hunting	0-20	-	2	-	-	-	-
09/09/24	1	Female	Adult	Rough grassland	1	08:28	Hunting	0-20	-	25	-	-	-	-
09/09/24	1	Female	Adult	Rough grassland	1	12:45	Circling	0-50	-	20	36	-	-	-

Table 79. VP survey flight activity results: swan species

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2022/23 non-breeding season														
07/10/22	7	Unknown	Juvenile	Rough grassland	2	10:10	Flying	10	-	5	-	-	-	-

Table 80. VP survey flight activity results: teal

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2022/23 non-breeding season														
07/12/22	2	Unknown	Unknown	River	4	12:04	Flying	0-20	-	15	-	-	-	-

Table 81. VP survey flight activity results: whimbrel

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2024 breeding season														
09/05/24	2	Unknown	Unknown	Improved grassland	3	07:13	Flying	20-50	-	-	95	-	-	-
09/05/24	8	Unknown	Unknown	Improved grassland	13	09:05	Flying	0-20	-	25	-	-	-	-

Table 82. VP survey flight activity results: white-tailed eagle

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2023/24 non-breeding season														
14/03/24	2	Unknown	Unknown	Rough grassland	1	15:50	Flying	100-180	-	-	-	-	469	-

Table 83. VP survey flight activity results: wigeon

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2022/23 non-breeding season														
17/01/23	8	Unknown	Unknown	Improved grassland	18	15:47	Flying, perched	0-20	-	34	-	-	-	-
2023/24 non-breeding season														
12/12/23	8	Unknown	Unknown	Pond	4	08:45	Flying	20-50	-	-	30	-	-	-
12/12/23	8	Unknown	Adult	Pond	5	09:30	Flying	20-50	-	-	25	-	-	-
12/12/23	8	Unknown	Adult	Pond	18	09:45	Flying	20-50	-	-	40	-	-	-
12/12/23	8	Unknown	Unknown	Pond	300	12:06	Flying	50-100	-	-	-	130	-	-
10/01/24	8	Unknown	Adult	Pond	24	15:20	Circling	50-100	-	-	-	50	-	-
14/03/24	8	Unknown	Unknown	Improved grassland	65	16:22	Circling	50-100	-	-	-	760	-	-

Table 84. VP survey flight activity results: yellow-legged gull

Date	VP	Sex	Age	Habitat	No. of birds	Time	Activity	Flight height (m)	Time (seconds) in height category					
									Non-flight	0-20m	20-50m	50-100m	100-180m	>180m
2023 breeding season														
13/06/23	2	Unknown	Unknown	Improved grassland	1	12:22	Flying, perched	50-100	-	-	-	30	-	-

Table 85. VP survey peak count results

Species		Peak count per season							
Common name	Scientific name	NB20/21	B21	NB21/22	B22	NB22/23	B23	NB23/24	B24
Barn owl	<i>Tyto alba</i>	0	0	0	0	0	0	0	1
Blackbird	<i>Turdus merula</i>	17	18	5	17	10	7	11	10
Blackcap	<i>Sylvia atricapilla</i>	5	5	0	1	0	2	0	3
Black-headed gull	<i>Chroicocephalus ridibundus</i>	180	5	75	15	107	3	146	6
Black-tailed godwit	<i>Limosa limosa</i>	0	0	0	0	0	37	2	0
Blue tit	<i>Cyanistes caeruleus</i>	9	7	5	6	6	6	6	4
Bullfinch	<i>Pyrrhula pyrrhula</i>	5	6	2	3	5	2	5	3
Buzzard	<i>Buteo buteo</i>	2	3	3	5	1	2	4	5
Chaffinch	<i>Fringilla coelebs</i>	25	30	15	20	19	10	20	7
Chiffchaff	<i>Phylloscopus collybita</i>	0	2	0	2	1	3	3	2
Coal tit	<i>Periparus ater</i>	6	2	4	0	2	3	2	2
Collared dove	<i>Streptopelia decaocto</i>	5	2	1	3	0	1	1	2
Common gull	<i>Larus canus</i>	0	0	3	7	7	0	30	0
Cormorant	<i>Phalacrocorax carbo</i>	4	3	6	4	12	5	15	19
Crossbill	<i>Loxia curvirostra</i>	0	0	0	0	0	5	0	0
Curlew	<i>Numenius arquata</i>	5	0	0	0	0	1	1	0
Dunnock	<i>Prunella modularis</i>	6	6	2	7	6	2	4	3
Fieldfare	<i>Turdus pilaris</i>	365	0	82	0	180	0	142	0
Gadwall	<i>Mareca strepera</i>	0	0	0	0	0	2	0	0
Goldcrest	<i>Regulus regulus</i>	10	10	1	12	3	2	4	8

Species		Peak count per season							
Common name	Scientific name	NB20/21	B21	NB21/22	B22	NB22/23	B23	NB23/24	B24
Golden plover	<i>Pluvialis apricaria</i>	42	0	0	2	47	6	14	0
Goldfinch	<i>Carduelis carduelis</i>	25	16	12	60	70	9	9	9
Grasshopper warbler	<i>Locustella naevia</i>	0	1	0	0	0	1	0	0
Great black-backed gull	<i>Larus marinus</i>	0	0	18	0	0	1	0	0
Great tit	<i>Parus major</i>	5	6	5	7	4	4	6	7
Green sandpiper	<i>Tringa ochropus</i>	0	0	0	0	0	0	1	0
Greenfinch	<i>Chloris chloris</i>	1	0	0	0	3	0	3	4
Grey heron	<i>Ardea cinerea</i>	2	2	1	2	2	2	2	3
Grey wagtail	<i>Motacilla cinerea</i>	2	2	1	1	2	1	2	1
Greylag goose	<i>Anser anser</i>	1	0	0	0	11	7	0	0
Hen harrier	<i>Circus cyaneus</i>	0	0	0	0	1	0	1	0
Herring gull	<i>Larus argentatus</i>	0	0	57	0	1	0	0	0
Hooded crow	<i>Corvus cornix</i>	34	40	10	28	31	30	30	40
House martin	<i>Delichon urbicum</i>	21	20	0	22	0	6	0	12
House sparrow	<i>Passer domesticus</i>	25	32	8	18	8	4	3	14
Jackdaw	<i>Coloeus monedula</i>	85	200	37	150	26	62	137	47
Jay	<i>Garrulus glandarius</i>	0	0	0	0	4	0	0	0
Kestrel	<i>Falco tinnunculus</i>	1	1	3	2	1	3	4	3
Kingfisher	<i>Alcedo atthis</i>	0	0	0	0	0	0	0	0
Lapwing	<i>Vanellus vanellus</i>	1	0	0	0	24	4	25	0
Lesser black-backed gull	<i>Larus fuscus</i>	31	30	80	48	14	34	57	11
Linnet	<i>Linaria cannabina</i>	12	35	0	8	15	30	19	40

Species		Peak count per season							
Common name	Scientific name	NB20/21	B21	NB21/22	B22	NB22/23	B23	NB23/24	B24
Little egret	<i>Egretta garzetta</i>	3	1	1	5	4	2	7	6
Long-tailed tit	<i>Aegithalos caudatus</i>	30	4	2	3	10	4	12	7
Magpie	<i>Pica pica</i>	32	35	7	30	12	7	7	8
Mallard	<i>Anas platyrhynchos</i>	17	4	13	18	9	7	43	7
Meadow pipit	<i>Anthus pratensis</i>	26	22	16	28	35	25	40	17
Mediterranean gull	<i>Ichthyaeetus melanocephalus</i>	0	0	0	0	1	0	0	0
Merlin	<i>Falco columbarius</i>	1	0	0	0	1	0	0	0
Mistle thrush	<i>Turdus viscivorus</i>	8	40	1	6	7	39	12	7
Moorhen	<i>Gallinula Chloropus</i>	0	0	0	0	0	0	1	0
Mute swan	<i>Cygnus olor</i>	2	0	0	0	2	2	5	1
Peregrine	<i>Falco peregrinus</i>	2	2	0	0	1	1	2	0
Pheasant	<i>Phasianus colchicus</i>	5	7	1	4	5	2	1	2
Pied wagtail	<i>Motacilla alba</i>	25	10	7	10	6	5	6	4
Raven	<i>Corvus corax</i>	4	12	19	9	4	4	4	4
Redpoll	<i>Carduelis flammea</i>	15	0	0	20	6	1	0	22
Redshank	<i>Tringa totanus</i>	1	0	0	0	0	0	0	0
Redwing	<i>Turdus iliacus</i>	450	0	100	0	120	0	68	0
Reed bunting	<i>Emberiza schoeniclus</i>	4	3	0	4	3	2	2	5
Robin	<i>Erithacus rubecula</i>	14	15	3	10	7	4	6	5
Rook	<i>Corvus frugilegus</i>	200	300	75	350	120	105	122	65
Sand martin	<i>Riparia riparia</i>	0	5	0	3	0	30	0	10
Sedge warbler	<i>Acrocephalus schoenobaenus</i>	0	2	0	0	0	4	0	1

Species		Peak count per season							
Common name	Scientific name	NB20/21	B21	NB21/22	B22	NB22/23	B23	NB23/24	B24
Short-eared owl	<i>Asio flammeus</i>	0	0	0	0	0	0	1	0
Shoveler	<i>Spatula clypeata</i>	0	0	0	0	6	0	4	0
Siskin	<i>Spinus spinus</i>	15	0	0	0	1	0	1	1
Skylark	<i>Alauda arvensis</i>	16	8	2	12	30	4	14	3
Snipe	<i>Gallinago gallinago</i>	7	10	1	38	11	29	28	1
Song thrush	<i>Turdus philomelos</i>	15	2	3	2	3	3	3	6
Sparrowhawk	<i>Accipiter nisus</i>	1	1	0	2	1	1	1	3
Starling	<i>Sturnus vulgaris</i>	410	120	300	300	292	75	190	150
Stock dove	<i>Columba oenas</i>	5	2	4	0	2	2	1	12
Stonechat	<i>Saxicola rubicola</i>	5	8	3	4	4	4	4	4
Swallow	<i>Hirundo rustica</i>	0	100	1	70	1	60	0	90
Swift	<i>Apus apus</i>	0	12	0	2	0	12	0	12
Teal	<i>Anas crecca</i>	0	0	0	0	4	0	0	0
Treecreeper	<i>Certhia familiaris</i>	0	0	0	0	0	1	0	0
Wheatear	<i>Oenanthe oenanthe</i>	0	2	0	1	0	0	1	0
Whimbrel	<i>Numenius phaeopus</i>	0	0	0	0	0	0	0	13
White-tailed eagle	<i>Haliaeetus albicilla</i>	0	0	0	0	0	0	1	0
Whitethroat	<i>Curruca communis</i>	0	8	0	0	0	2	0	0
Wigeon	<i>Mareca penelope</i>	0	0	0	0	18	0	327	0
Willow warbler	<i>Phylloscopus trochilus</i>	0	7	0	4	0	4	0	0
Woodpigeon	<i>Columba palumbus</i>	36	50	10	70	360	17	24	80
Wren	<i>Troglodytes troglodytes</i>	12	11	4	8	7	7	6	6

Species		Peak count per season							
Common name	Scientific name	NB20/21	B21	NB21/22	B22	NB22/23	B23	NB23/24	B24
Yellow-legged gull	<i>Larus michahellis</i>	0	0	0	0	0	1	0	0

Transect surveys

Table 86. Transect survey results

Species		Peak count per transect per season											
Common name	Scientific name	Transect A (Camas South)			Transect B (Camas South)			Transect A (Ballinlee)			Transect B (Ballinlee)		
		B23	NB23/24	B24	B23	NB23/24	B24	B23	NB23/24	B24	B23	NB23/24	B24
Blackbird	<i>Turdus merula</i>	5	2	10	6	6	14	4	4	5	2	3	11
Blackcap	<i>Sylvia atricapilla</i>	0	2	1	3	0	2	1	0	3	0	0	1
Black-headed gull	<i>Chroicocephalus ridibundus</i>	0	0	5	0	0	0	0	0	0	0	0	0
Blue tit	<i>Cyanistes caeruleus</i>	3	1	2	8	4	2	7	3	3	4	3	3
Bullfinch	<i>Pyrrhula pyrrhula</i>	0	0	1	3	4	0	2	2	0	0	0	1
Buzzard	<i>Buteo buteo</i>	1	0	1	0	0	0	0	0	0	0	0	1
Chaffinch	<i>Fringilla coelebs</i>	3	5	3	5	3	4	4	3	5	7	5	4
Chiffchaff	<i>Phylloscopus collybita</i>	0	3	6	4	0	5	0	0	3	2	2	1
Coal tit	<i>Periparus ater</i>	0	0	0	0	1	0	0	1	0	0	1	0
Cormorant	<i>Phalacrocorax carbo</i>	3	0	2	0	0	0	6	10	6	2	0	3
Dunnock	<i>Prunella modularis</i>	1	2	0	1	1	2	0	3	0	2	1	2

Species		Peak count per transect per season											
Common name	Scientific name	Transect A (Camas South)			Transect B (Camas South)			Transect A (Ballinlee)			Transect B (Ballinlee)		
		B23	NB23/24	B24	B23	NB23/24	B24	B23	NB23/24	B24	B23	NB23/24	B24
Goldcrest	<i>Regulus regulus</i>	0	0	1	1	1	1	1	0	1	0	0	0
Goldfinch	<i>Carduelis carduelis</i>	7	2	15	2	0	2	2	0	23	9	0	4
Grasshopper warbler	<i>Locustella naevia</i>	0	0	0	1	0	0	0	0	0	0	0	0
Great tit	<i>Parus major</i>	1	1	4	2	5	0	0	0	2	2	0	3
Greenfinch	<i>Chloris chloris</i>	0	0	0	0	0	1	0	0	1	2	0	0
Grey heron	<i>Ardea cinerea</i>	0	1	1	0	0	1	1	3	1	0	0	0
Grey wagtail	<i>Motacilla cinerea</i>	1	0	0	0	0	0	0	0	0	0	0	0
Hooded crow	<i>Corvus cornix</i>	11	4	22	1	4	2	2	4	6	3	0	7
House martin	<i>Delichon urbicum</i>	0	0	3	0	0	0	0	0	0	5	0	0
House sparrow	<i>Passer domesticus</i>	3	0	18	0	0	2	0	0	0	0	0	7
Jackdaw	<i>Coloeus monedula</i>	3	3	24	0	0	3	5	2	5	0	0	42
Kestrel	<i>Falco tinnunculus</i>	1	0	0	0	0	0	0	1	0	0	0	2
Kingfisher	<i>Alcedo atthis</i>	0	0	0	0	0	0	1	0	0	0	0	0
Lesser black-backed gull	<i>Larus fuscus</i>	0	0	12	0	7	0	0	0	1	0	0	0
Linnet	<i>Linaria cannabina</i>	23	0	8	1	2	0	0	0	7	15	1	4
Little egret	<i>Egretta garzetta</i>	0	1	1	0	4	0	0	0	0	0	0	4
Long-tailed tit	<i>Aegithalos caudatus</i>	0	3	0	1	0	0	2	3	5	0	3	0
Magpie	<i>Pica pica</i>	0	1	2	2	0	1	1	1	2	0	0	0
Mallard	<i>Anas platyrhynchos</i>	10	0	2	0	0	3	0	2	2	0	0	0

Species		Peak count per transect per season											
Common name	Scientific name	Transect A (Camas South)			Transect B (Camas South)			Transect A (Ballinlee)			Transect B (Ballinlee)		
		B23	NB23/24	B24	B23	NB23/24	B24	B23	NB23/24	B24	B23	NB23/24	B24
Meadow pipit	<i>Anthus pratensis</i>	24	7	7	4	0	1	0	0	5	11	4	13
Mistle thrush	<i>Turdus viscivorus</i>	1	0	16	1	0	0	0	0	0	9	0	1
Moorhen	<i>Gallinula chloropus</i>	0	0	0	0	0	0	1	0	0	0	0	0
Mute swan	<i>Cygnus olor</i>	0	0	0	0	0	0	2	0	0	0	0	0
Pheasant	<i>Phasianus colchicus</i>	1	0	1	2	0	0	0	0	0	0	0	1
Pied wagtail	<i>Motacilla alba</i>	2	2	3	0	0	0	0	2	0	2	0	0
Raven	<i>Corvus corax</i>	1	1	0	1	0	0	0	0	1	0	0	0
Redwing	<i>Turdus iliacus</i>	0	49	0	0	21	0	0	14	0	0	42	0
Redpoll	<i>Acanthis flammea</i>	2	0	0	0	0	1	0	0	1	0	0	0
Reed bunting	<i>Emberiza schoeniclus</i>	2	0	0	0	0	1	2	0	2	2	1	4
Robin	<i>Erithacus rubecula</i>	4	9	13	4	8	8	6	4	5	4	3	6
Rook	<i>Corvus frugilegus</i>	21	6	100	6	9	32	11	9	20	0	4	17
Sand martin	<i>Riparia riparia</i>	0	0	13	0	0	2	0	0	6	0	0	8
Sedge warbler	<i>Acrocephalus schoenobaenus</i>	1	0	0	3	0	0	3	0	1	1	0	2
Siskin	<i>Spinus spinus</i>	0	0	0	1	0	0	0	0	1	0	0	3
Skylark	<i>Alauda arvensis</i>	5	14	5	0	0	0	1	0	3	7	2	2
Snipe	<i>Gallinago gallinago</i>	0	2	0	0	0	0	0	0	0	0	3	0
Song thrush	<i>Turdus philomelos</i>	2	2	0	2	1	3	0	1	3	1	2	2
Sparrowhawk	<i>Accipiter nisus</i>	0	0	0	0	1	0	0	0	0	0	0	0
Spotted flycatcher	<i>Muscicapa striata</i>	0	0	0	1	0	0	0	0	0	0	0	0

Species		Peak count per transect per season											
Common name	Scientific name	Transect A (Camas South)			Transect B (Camas South)			Transect A (Ballinlee)			Transect B (Ballinlee)		
		B23	NB23/24	B24	B23	NB23/24	B24	B23	NB23/24	B24	B23	NB23/24	B24
Starling	<i>Sturnus vulgaris</i>	3	23	75	0	18	0	10	134	0	0	3	3
Stonechat	<i>Saxicola rubicola</i>	4	3	5	2	3	0	3	0	2	5	2	4
Swallow	<i>Hirundo rustica</i>	6	0	27	8	0	8	5	0	12	12	0	15
Swift	<i>Apus apus</i>	1	0	5	0	0	3	0	0	4	0	0	0
Teal	<i>Anas crecca</i>	0	0	0	0	0	0	0	4	0	0	0	0
Treecreeper	<i>Certhia familiaris</i>	0	0	0	0	0	1	0	0	0	0	0	0
Whimbrel	<i>Numenius phaeopus</i>	0	0	12	0	0	0	0	0	0	0	0	0
Willow warbler	<i>Phylloscopus trochilus</i>	1	0	3	3	0	1	4	0	6	1	0	0
Woodpigeon	<i>Columba palumbus</i>	3	2	21	5	11	10	4	0	2	10	3	5
Wren	<i>Troglodytes troglodytes</i>	7	5	5	7	2	10	7	5	7	9	2	6

Other surveys

Table 87. Raptor survey results

Species	Date	Time	No. of birds	Age	Sex	Activity	Flight path	Observation ref.
2023								
Buzzard	26/05/23	10:14	2	Unknown	Unknown	Soaring	High soaring flight	BZ 001
Buzzard	26/05/23	10:24	1	Unknown	Unknown	Soaring	Soaring and flying east	BZ 002
Buzzard	26/05/23	11:11	1	Unknown	Unknown	Soaring	Soaring and drifting east	BZ 003

Species	Date	Time	No. of birds	Age	Sex	Activity	Flight path	Observation ref.
Buzzard	26/05/23	11:32	1	Unknown	Unknown	Flying	Travelling north	BZ 004
Buzzard	26/05/23	12:01	1	Unknown	Unknown	Hunting	Hunting and drifting south	BZ 005
Buzzard	16/06/23	09:14	1	Adult	Unknown	Hunting	-	BZ 006
Buzzard	16/06/23	10:28	1	Adult	Unknown	Soaring	-	BZ 007
Buzzard	16/06/23	11:02	2	Adult	Unknown	Flying	-	BZ 008
Buzzard	16/06/23	11:08	1	Adult	Unknown	Soaring	-	BZ 009
Buzzard	17/07/23	09:55	1	Unknown	Unknown	Soaring	-	BZ 010
Buzzard	17/07/23	10:39	1	Unknown	Unknown	Hunting	-	BZ 011
Buzzard	17/07/23	12:01	1	Unknown	Unknown	Soaring	-	BZ 012
Buzzard	17/07/23	12:09	2	Unknown	Unknown	Soaring	-	BZ 013
Buzzard	17/07/23	12:11	1	Unknown	Unknown	Soaring	-	BZ 014
Buzzard	17/07/23	12:39	1	Unknown	Unknown	Hunting	-	BZ 015
Kestrel	26/05/23	09:32	1	Adult	Male	Hunting	Flying south	K 001
Kestrel	26/05/23	10:24	1	Adult	Male	Hunting	Hunting and descending into hedgerow	K 002
Kestrel	26/05/23	12:33	1	Adult	Male	Hunting	Flying west	K 003
Kestrel	16/06/23	08:04	1	Adult	Unknown	Flying	-	K 004
Kestrel	16/06/23	09:00	2	Adult	Unknown	Hunting	-	K 005
Kestrel	16/06/23	09:58	1	Adult	Unknown	Hunting	-	K 006
Kestrel	16/06/23	11:40	1	Unknown	Unknown	Hunting	-	K 007
Kestrel	17/07/23	09:33	1	Unknown	Unknown	Hunting	-	K 008
Kestrel	17/07/23	09:57	1	Unknown	Unknown	Hunting	-	K 009
Kestrel	17/07/23	10:43	1	Unknown	Unknown	Hunting	-	K 010
Kestrel	17/07/23	11:21	1	Unknown	Unknown	Perched	-	K 011

Species	Date	Time	No. of birds	Age	Sex	Activity	Flight path	Observation ref.
Kestrel	17/07/23	11:27	1	Unknown	Unknown	Flying	-	K 012
Kestrel	17/07/23	11:55	1	Adult	Female	Hunting	-	K 013
Kestrel	17/07/23	12:11	1	Unknown	Unknown	Hunting	-	K 014
Sparrowhawk	16/06/23	09:42	1	Unknown	Unknown	Hunting	-	SH 001

Table 88. Wader survey results

Species	Date	Time	No. of birds	Activity	Notes	Observation ref.
Golden plover	11/04/23	11:00	24	Flying	Flying over the centre of the site, circling and likely landing	GP 001
Snipe	11/04/23	09:26	3	Flying	Flushed from immature forestry and flew east	SN 001
Snipe	11/04/23	09:43	1	Flying	Flushed from drain in immature forestry and flew south	SN 002
Snipe	11/04/23	09:44	1	Flying	Flushed from immature forestry and flew south	SN 003
Snipe	11/04/23	11:08	3	Flying	Flushed from wet grassland	SN 004
Snipe	11/04/23	11:14	1	Flying	Flushed	SN 005

Table 89. Waterbird survey results

Species		Count per survey visit								
Common name	Scientific name	07/04/23	13/04/23	08/05/23	30/08/23	14/09/23	11/12/23	12/01/24	16/02/24	08/03/24
Black-headed gull	<i>Chroicocephalus ridibundus</i>	54	42	0	0	0	45	59	1	12
Common sandpiper	<i>Actitis hypoleucos</i>	0	0	0	1	0	0	1	0	1
Coot	<i>Fulica atra</i>	6	16	12	7	15	4	2	2	3

Species		Count per survey visit								
Common name	Scientific name	07/04/23	13/04/23	08/05/23	30/08/23	14/09/23	11/12/23	12/01/24	16/02/24	08/03/24
Cormorant	<i>Phalacrocorax carbo</i>	0	0	0	11	0	1	0	4	5
Dunlin	<i>Calidris alpina</i>	0	0	0	0	0	0	4	0	0
Gadwall	<i>Mareca strepera</i>	0	2	0	2	2	17	12	8	12
Great-crested grebe	<i>Podiceps cristatus</i>	0	0	0	0	0	0	0	0	1
Green sandpiper	<i>Tringa ochropus</i>	0	0	0	3	0	0	1	0	0
Grey heron	<i>Ardea cinerea</i>	0	0	0	2	2	2	1	0	2
Kestrel	<i>Falco tinnunculus</i>	0	0	0	1	0	0	0	0	0
Kingfisher	<i>Alcedo atthis</i>	0	0	1	1	1	0	0	0	0
Lesser black-backed gull	<i>Larus fuscus</i>	0	0	0	0	0	2	4	0	0
Little egret	<i>Egretta garzetta</i>	1	2	0	0	1	1	0	6	4
Little grebe	<i>Tachybaptus ruficollis</i>	8	10	4	100	76	3	0	4	8
Mallard	<i>Anas platyrhynchos</i>	79	44	135	194	48	110	129	81	53
Moorhen	<i>Gallinula chloropus</i>	9	15	12	21	20	17	13	9	6
Mute swan	<i>Cygnus olor</i>	5	2	3	5	2	5	4	2	2
Peregrine	<i>Falco peregrinus</i>	0	1	0	0	0	0	0	0	0
Pochard	<i>Aythya ferina</i>	0	0	0	1	0	0	0	0	0
Ringed plover	<i>Charadrius hiaticula</i>	0	0	0	2	0	0	0	0	0
Ruff	<i>Philomachus pugnax</i>	0	0	0	2	0	0	0	0	0
Shoveler	<i>Spatula clypeata</i>	2	0	0	0	45	58	63	17	6
Snipe	<i>Gallinago gallinago</i>	0	0	0	0	0	0	18	5	1
Spotted redshank	<i>Tringa erythropus</i>	0	0	0	1	0	0	0	0	0
Teal	<i>Anas crecca</i>	127	76	0	46	63	373	543	218	241

Species		Count per survey visit								
Common name	Scientific name	07/04/23	13/04/23	08/05/23	30/08/23	14/09/23	11/12/23	12/01/24	16/02/24	08/03/24
Tufted duck	<i>Aythya fuligula</i>	32	22	0	0	2	8	11	19	11
Water rail	<i>Rallus aquaticus</i>	0	0	0	0	0	2	3	2	0
Wigeon	<i>Mareca penelope</i>	0	0	0	0	0	0	275	456	303

Table 90. Hinterland survey results

Species	Date	No. of birds	Notes	Observation ref.
Black-headed gull	09/11/2023	14	Recorded near Clagher west, within 5km of the Site. Birds observed commuting South.	BH 001
Black-headed gull	17/10/2022	8	Recorded to 2km to the South of the Site.	BH 002
Buzzard	09/11/2023	1	Recorded near Garryfine within 5km of the Site. Perched in treeline and then flew East.	BZ 001
Buzzard	04/01/2024	1	Recorded near Knockmore within 5km of the Site. Perched in hedgerow.	BZ 002
Buzzard	09/04/2024	1	Recorded near Forty acres within 5km of the Site. Flew east at 15m over grassland.	BZ 003
Buzzard	09/04/2024	2	Recorded near Foxhall within 5km. Perched in treeline.	BZ 004
Buzzard	09/04/2024	3	Recorded near Dromacummer within 5km of the Site. Flying, soaring and displaying between 150-200m. Drifted South.	BZ 005
Buzzard	15/02/2023	2	Recorded approximately 4km East of the Site.	BZ 006
Buzzard	15/02/2023	1	Recorded approximately 4km East of the Site.	BZ 007
Cormorant	09/04/2024	1	Recorded near Garrane within 5km of the Site.	CA 001
Dipper	15/02/2023	1	Recorded approximately 4km North of the Site.	DI 001
Grey heron	17/10/2022	2	Recorded approximately 3km East of the Site.	H 001

Species	Date	No. of birds	Notes	Observation ref.
Grey heron	15/02/2023	1	Recorded approximately 5km North of the Site.	H 002
Grey wagtail	15/02/2023	1	Recorded approximately 4km North of the Site.	GL 001
Kestrel	17/10/2022	1	Recorded approximately 500m West of the Site.	K 001
Kestrel	15/02/2023	1	Recorded approximately 3km South of the Site.	K 002
Kestrel	15/02/2023	1	Recorded approximately 2km South-east of the Site.	K 003
Kestrel	09/11/2023	1	Recorded near Ballyclogh lower within 5km of the Site. Bird observed flying west.	K 004
Kestrel	09/11/2023	1	Recorded near Charleville within 5km of the Site. Observed perching on telegraph pole before flying north towards Site.	K 005
Kestrel	04/01/2024	1	Recorded near Kilbreedy within 5km of the Site. Observed flying North.	K 006
Kestrel	09/04/2024	1	Recorded near Foxhall within 5km of the Site. Observed perching on telegraph pole before flying west.	K 007
Lesser black-backed gull	17/10/2022	18	Recorded approximately 2.5km West of the Site.	LB 001
Lesser black-backed gull	17/10/2022	1	Recorded approximately 1km South-west of the Site.	LB 002
Lesser black-backed gull	09/11/2023	1	Recorded near Lothbragh lower within 5km of the Site. Observed flying South high over the surveyor.	LB 003
Lesser black-backed gull	09/11/2023	11	Recorded near Garrane within 5km of the Site. Observed travelling between 20-30m South.	LB 004
Lesser black-backed gull	09/04/2024	1	Recorded near Clogher east within 5km of the Site. Observed roosting in flooded field outside of the Site.	LB 005
Little egret	09/11/2023	1	Recorded near Clagher east within 5km of the Site. Observed foraging in wet grassland outside of the Site.	ET 001
Little egret	17/10/2022	2	Recorded approximately 3km East of the Site.	ET 002
Mallard	15/02/2023	2	Recorded approximately 4km West of the Site.	MA 001
Mute swan	15/02/2023	3	Recorded approximately 5km North of the Site.	MS 001
Sparrowhawk	17/10/2022	1	Recorded approximately 4km South-west of the Site.	SH 001

Species	Date	No. of birds	Notes	Observation ref.
Sparrowhawk	15/02/2023	1	Recorded approximately 2km South-east of the Site.	SH 002