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Rooaunalaghta Green Energy Project

Appendix 7-3

Baseline Ornithology Report

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Chapter 7 Ornithology

Appendix 7-3: Baseline Ornithology Report

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1. INTRODUCTION

All surveyors and authors of this report are suitably qualified ecologists. **Appendix 7-1: Statement of Competencies** provides qualifications and experience of each team member involved in the production of this report and its appendices. As required by the Chartered Institute of Ecology and Environmental Management (CIEEM), all APEM Group Woodrow staff are required to abide by a strict code of professional conduct in all aspects of their work.

1.1. Background

APEM Group Woodrow was commissioned by The Applicant, to conduct ornithological surveys of the proposed Rooaunalaghta Wind Farm, hereafter referred to as 'the Project Site'.

This report outlines the methodology used for ornithological surveys, presents survey results on habitats and bird species within the Project Site, and discusses key findings. It provides baseline ornithological data to support the ornithological impact assessment included in the Environmental Impact Assessment Report (EIAR) Ornithological chapter.

1.2. Site and Development overview

The Project Site, located within the townlands of Cloghmoyne, Carrowoughteragh, Toorard, Rooaunalaghta, Brodullagh South and Killough, Co. Mayo. The Site was initially considered as two separate development areas (Rooaunalaghta and Cloughmoyne); however, from August 2024 onwards these areas were combined and surveyed as a single project area. The proposed development comprises 13 wind turbines and associated infrastructure.

1.3. Purpose of this report

The purpose of this baseline report is to describe the methods and results of ornithological surveys undertaken within the Project Site and the wider landscape. Details of the surveys carried out are provided in Section 3 -Methodology. The data gathered will inform the ecological impact assessment which is contained within Chapter 7 Ornithology of the Environmental Impact Assessment Report (EIAR).

2. DESK STUDY

An initial desk-based review was undertaken to collate existing ornithological information relevant to the Project Site and its surrounding landscape. In line with best practice (e.g. NatureScot, 2016) a 10 km radius was initially applied as the baseline search area for designated sites. However, in recognition that wider foraging ranges and functional linkages may extend beyond this distance, additional consideration was given to sites up to 20 km where hydro-ecological connections or potential species movements could create pathways of effect. This approach ensured that sites such as Lough Carra, approximately 17.79 km away and Lough Mask, approximately 14.12 km away, were captured in the assessment. The desk study provided a precautionary but proportionate baseline for identifying sensitive bird populations, determining survey requirements, and informing the subsequent impact assessment

2.1. Data sources

Preliminary assessment of ornithological context was undertaken using:

- Ortho-imagery and 6-inch mapping, viewed via Bing Maps, Google EarthPro, Google Maps, and Ordnance Survey Ireland GeoHive.

National Parks & Wildlife Service (NPWS) Designations Viewer[1] was used to:

- Identify nearby Special Protection Areas (SPAs) and their Special Conservation Interests (SCIs).
- Identify Special Areas of Conservation (SACs) and assess whether any include habitats of ornithological importance or are functionally linked to SPAs.
- Identify Natural Heritage Areas (NHAs) and proposed NHAs (pNHAs) of potential ornithological relevance.
- Download shapefiles and metadata for designated sites, updated annually for use in Woodrow GIS systems.

Environmental Protection Agency's (EPA) Maps[2] was used to:

- Investigate hydrological connectivity to SPAs.

Scottish Natural Heritage (2016) guidance was followed on:

- Assessing SPA connectivity by examining the core ranges of SCI species.
- Considering core ranges up to 20 km for geese species (e.g., greylag goose *Anser anser*, pink-footed goose *Anser brachyrhynchus*) (Mitchell, 2012).
- SPAs within 20 km, or with potential source-pathway-receptor connections, are listed in Table 1).

1 - https://www.npws.ie/protected-sites

2 - https://gis.epa.ie/EPAMaps/

- Table 1 and shown in Figure 1Figure 1.

BirdWatch Ireland Bird Sensitivity Mapping for Wind Energy Development (McGuinness et al., 2015) was reviewed via:

- NBDC Biodiversity Maps, as shown in Figure 4Figure 4, indicates that the Project Site (including 2 km turbine buffer) overlaps with:
    - Low sensitivity grid squares for Bewick's swan (*Cygnus columbianus bewickii*).
    - Medium sensitivity grid squares for common scoter (*Melanitta nigra*) and common tern (*Sterna hirundo*).
    - Adjacent areas within the 10 km square (M24) also exhibit:
        - High sensitivity for curlew (*Numenius arquata*) and black-headed gull (*Chroicocephalus ridibundus*).
        - Highest sensitivity for whooper swan (*Cygnus cygnus*).

National Biodiversity Data Centre[3] (NBDC) data request provided:

- Ecological and ornithological records within the two 10 km national grid squares (M24 and M25) encompassing the Project Site.
- Historical species records with conservation statuses (Gilbert et al., 2021; Stanbury et al., 2021), listed in Appendix A – NBDC and I-WeBS records.

Bird Atlas 2007–11 (Balmer et al., 2013) was consulted to:

- Review distribution ranges of potential target species within grid squares M24 and M25.
- Assess likelihood of occurrence within the Project Site.

Target species included:

- Annex I species of the EU Birds Directive (European Union, 2009/147/EC), due to low population numbers, threatened/endemic status, or links with EU Habitats Directive (European Union, 1992) habitats.
- Birds of Conservation Concern in Ireland (BoCCI 2020-2026; Gilbert et al., 2021):
    - Red-listed species: highest conservation concern (rapid decline, historic decline without recovery, or global threat).
    - Amber-listed species: unfavourable European status, internationally important numbers, moderate declines, or very small populations.

The Irish Wetland Bird Survey (I-WeBS)[4] review identified three I-WeBS count sites within 5 km of the Project Site, and a further seven sites within 20 km (Figure 5). Sites beyond the immediate 5 km zone were included to capture wetlands that may be functionally linked to the Project Site, recognising that many waterbird species routinely commute several kilometres between roosting, loafing, and foraging areas.

3 - https://maps.biodiversityireland.ie/

4 https://bwi.maps.arcgis.com/apps/View/index.html?appid=1043ba01fcb74c78bc75e306eda48d3a

Annual peak count data is available for most locations from winter 2013-14 onwards. However, data for Lough Carra are available only from winter 2016-17, while records for Carras Lough cover the period from winter 1994-95 to 1998-99. Information for the North Central Galway Lakes extends from 1994-95 through to 2023-24. Full details are provided in Appendix A – NBDC and I-WeBS records.

Migratory geese and swans were considered notably sensitive to wind farm developments, following NatureScot (2025) guidance:

- Distribution and population data were reviewed from:
- Lewis et al. (2019) – Irish Wetland Bird Survey (I-WeBS) counts.
- Burke et al. (2022) – Greylag goose distribution.
- Burke et al. (2021) – Whooper swan distribution.
- Fox et al. (2026) – Greenland white-fronted goose (*Anser albifrons flavirostris*) distribution.

Scientific Nomenclature:

- Bird species referenced in this baseline report follow binomial nomenclature at the first mention of each species' common name, with the scientific name written in full and italicised. Subsequent references use only the common name. Irish (English language) common and scientific names of bird species referred to in this report follow those used by the British Ornithologists' Union (BOU)[5]. Where appropriate, geographic prefixes such as "common," "European," or "Eurasian" are not included.
- British Trust for Ornithology (BTO) species codes referred to throughout this report are provided in **Appendix 7-4: BTO Species codes**, for reference.

2.2. Desk study findings

2.2.1. European and national designated sites

There are three SPAs within a 20 km radius of the Project Site. These include Lough Corrib SPA, located approximately 3.79 km west of the Site, Lough Mask SPA, approximately 14.12 km to the northwest and Lough Carra SPA approximately 17.79 km to the northwest (Table 1).

5 - Bird nomenclature follows the British Ornithologists' Union (BOU) and the International Ornithological Congress (IOC) World Bird List, with English and scientific names aligned to the most recent BOU taxonomic recommendations (BOU, 2013; updated online).

Table 1. SPAs within 20 km within the Project Site and their Qualifying Interests

Designated site	Site code	Distance to Site	Qualifying Interests (QIs)
Lough Corrib SPA	004042	3.79 km west	Gadwall (*Mareca strepera*) [A051] Shoveler (*Spatula clypeata*) [A056] Pochard (*Aythya ferina*) [A059] Tufted duck (*Aythya fuligula*) [A061] Common scoter (*Melanitta nigra*) [A065] Hen harrier (*Circus cyaneus*) [A082] Coot (*Fulica atra*) [A125] Golden plover (*Pluvialis apricaria*) [A140] Black-headed gull (*Chroicocephalus ridibundus*) [A179] Common gull (*Larus canus*) [A182] Common tern (*Sterna hirundo*) [A193] Arctic tern (*Sterna paradisaea*) [A194] Greenland white-fronted goose (*Anser albifrons flavirostris)* [A395] Wetland and Waterbirds [A999]
Lough Mask SPA	004062	14.12 km northwest	Tufted duck (*Aythya fuligula*) [A061] Black-headed gull (*Chroicocephalus ridibundus*) [A179] Common gull (*Larus canus*) [A182] Lesser black-backed gull (*Larus fuscus*) [A183] Common tern (*Sterna hirundo*) [A193] Greenland white-fronted goose (*Anser albifrons flavirostris*) [A395] Wetland and waterbirds [A999]
Lough Carra SPA	004051	17.79 km northwest	Common Gull (*Larus canus*) [A182]

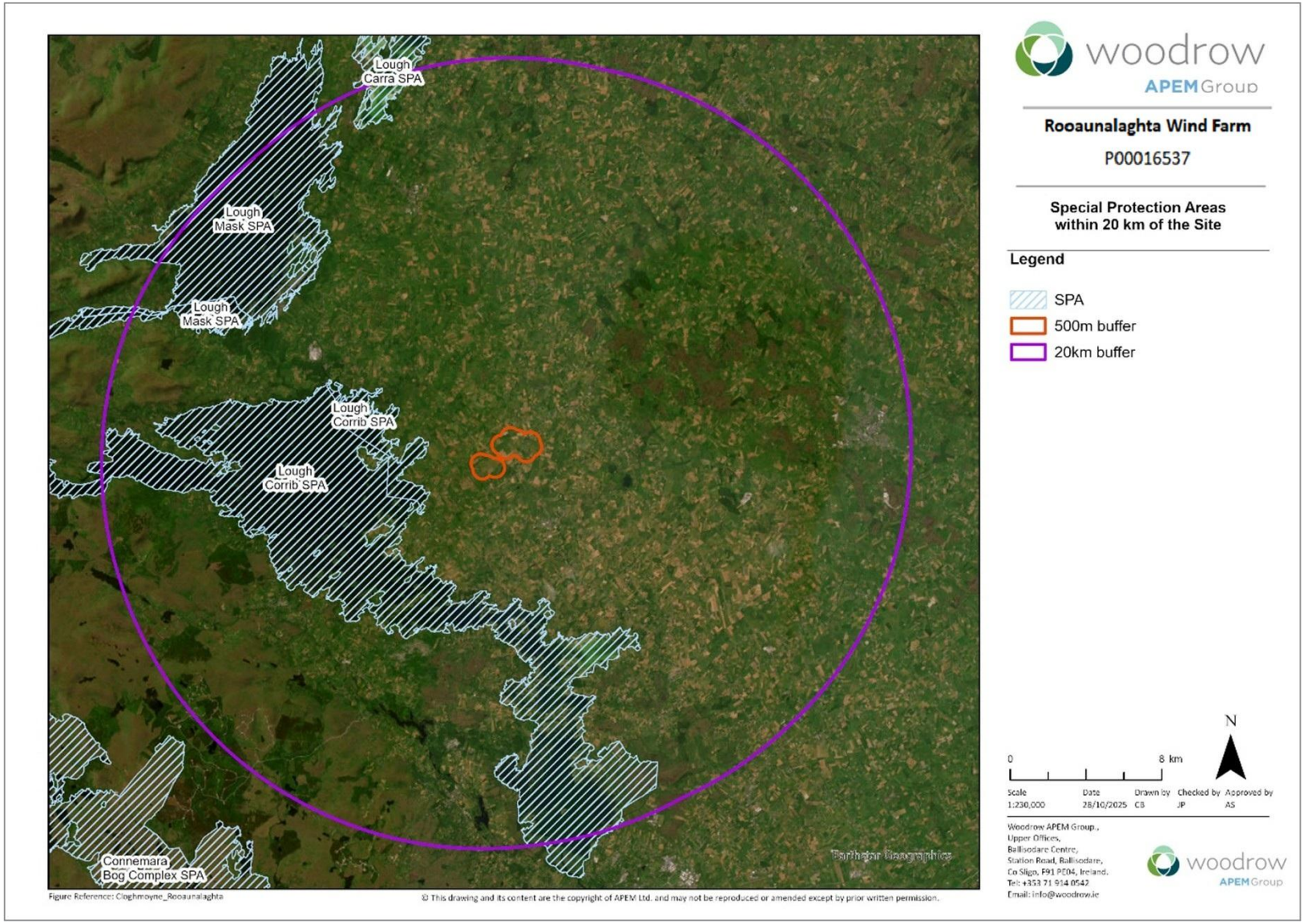


Figure 1. Special Protection Areas (SPAs) within 20 km of the Project Site

2.2.2. Special Areas of Conservation (SACs)

In addition to the SPAs listed above, a number of SACs occur within the wider study area (Table 2). While SACs are designated primarily for habitats and non-avian species under the EU Habitats Directive (92/43/EEC), several contain wetland and peatland habitats of potential ornithological relevance, particularly where they support wintering or breeding waterbirds or are functionally linked to nearby SPAs.

Notably, Cloughmoyne SAC (Site Code: 000479) adjoins the Project Site boundary and comprises turlough and karst features that may support wintering waders and wildfowl during periods of inundation. The Lough Corrib SAC (000297), located approximately 3.79 km west, and the Shrule Turlough SAC (000525), approximately 1.5 km to the north, are both hydrologically connected to the Corrib catchment and provide important supporting habitat for waterbirds associated with the Lough Corrib SPA.

Other SACs within 20 km include Mocorha Lough SAC, Ross Lake and Woods SAC, and several turlough SACs to the north and northeast. These sites collectively contribute to the wider wetland network of north Galway and south Mayo, known to support whooper swan, wigeon (*Mareca penelope*), teal (*Anas crecca)*, lapwing (*Vanellus vanellus*), golden plover (*Pluvialis apricaria*), and other wintering waterbirds.

The locations of SACs within 20 km of the Site are shown in Figure 2Figure 2, and those within the 5 km study area are listed in Table 2.

Table 2. SACs within the 5 km within the Project Site

Site name	Site code	Distance from Site	Ornithological relevance
Cloughmoyne SAC	000479	Adjoining the Project Site boundary	Turlough habitat; supports wintering waders and wildfowl.
Shrule Turlough SAC	000525	1.5 km north	Flooded turlough supporting wintering waterbirds.
Lough Corrib SAC	000297	3.79 km west	Part of Corrib system; supports internationally important waterbirds (functionally linked to SPA).
Mocorha Lough SAC	001536	2.3 km northwest	Eutrophic lake; foraging and roosting waterbirds.

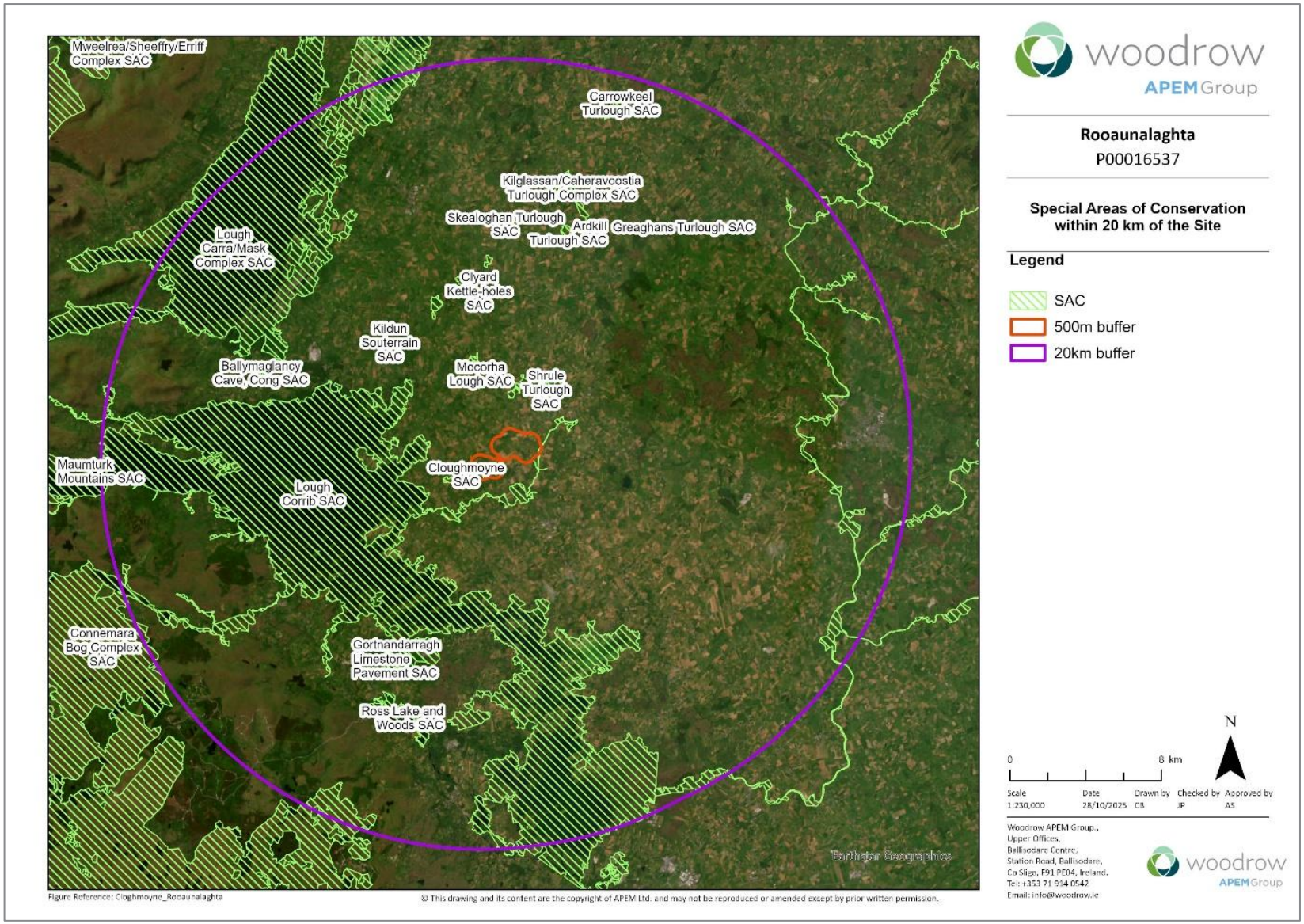


Figure 2. Special Areas of Conservation (SACs) within 20 km of the Project Site

2.2.3. Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs)

In addition to the European-designated sites described above (SPAs and SACs), several nationally designated sites (NHAs and pNHAs) occur within 5 km of the Project Site.

A total of 30 pNHAs are situated within 20 km of the Project Site, including five pNHAs located within the 5 km buffer and which are listed in Table 3. In addition, two NHAs occur within 20 km of the Project Site: Oughterard district bog NHA [Site code: 002431], approximately 13.5 km southwest of the Project Site, and Moycullen Bogs NHA (Site code: 002364) approximately 16.9 km south-southwest.

Cloughmoyne pNHA, is adjacent to the western boundary of the Project Site and comprises limestone pavement habitat. The Site is not designated for ornithological interests. In contrast, the other pNHAs listed in Table 3 are waterbodies situated within 5 km of the Project Site, several of which, Rostaff Turlough and Lough Corrib in particular, are known to provide suitable foraging and roosting opportunities for waterbirds and are listed as I-WeBS count locations. Although Shrule Turlough is not designated for ornithological interest, it is known to support large numbers of wintering waterbirds, including swans, geese and ducks, based on I-WeBS count data and project specific wintering waterbird surveys, while Mocorha Lough also provides suitable wetland habitat within close proximity to the Project Site.

Within the 20 km buffer of the Project Site, the majority of pNHAs comprise turloughs, karst lakes, and other groundwater-dependent wetland systems, primarily distributed to the north and east of the Project Site. These features are characteristic of the limestone lowlands of east Galway and south Mayo and collectively contribute to the region's high hydrological and ecological diversity. A smaller number of sites to the south and southwest are associated with bog, woodland, and limestone pavement habitats, reflecting the transitional nature of the local landscape between the karst plains and the more elevated terrain towards Connemara.

The locations of the NHA and pNHAs in relation to the Project Site are illustrated in Figure 3Figure 3.

Table 3. pNHAs within the 5 km within the Project Site

Site name	Site code	Distance from Site
Cloughmoyne	000479	Adjacent to the western boundary of the Project Site
Rostaff Turlough (Lake)	000385	approximately 0.6 km southeast
Shrule Turlough	000525	approximately 1.5 km north
Lough Corrib	000297	approximately 3.79 km west
Mocorha Lough	001536	approximately 2.3 km northwest

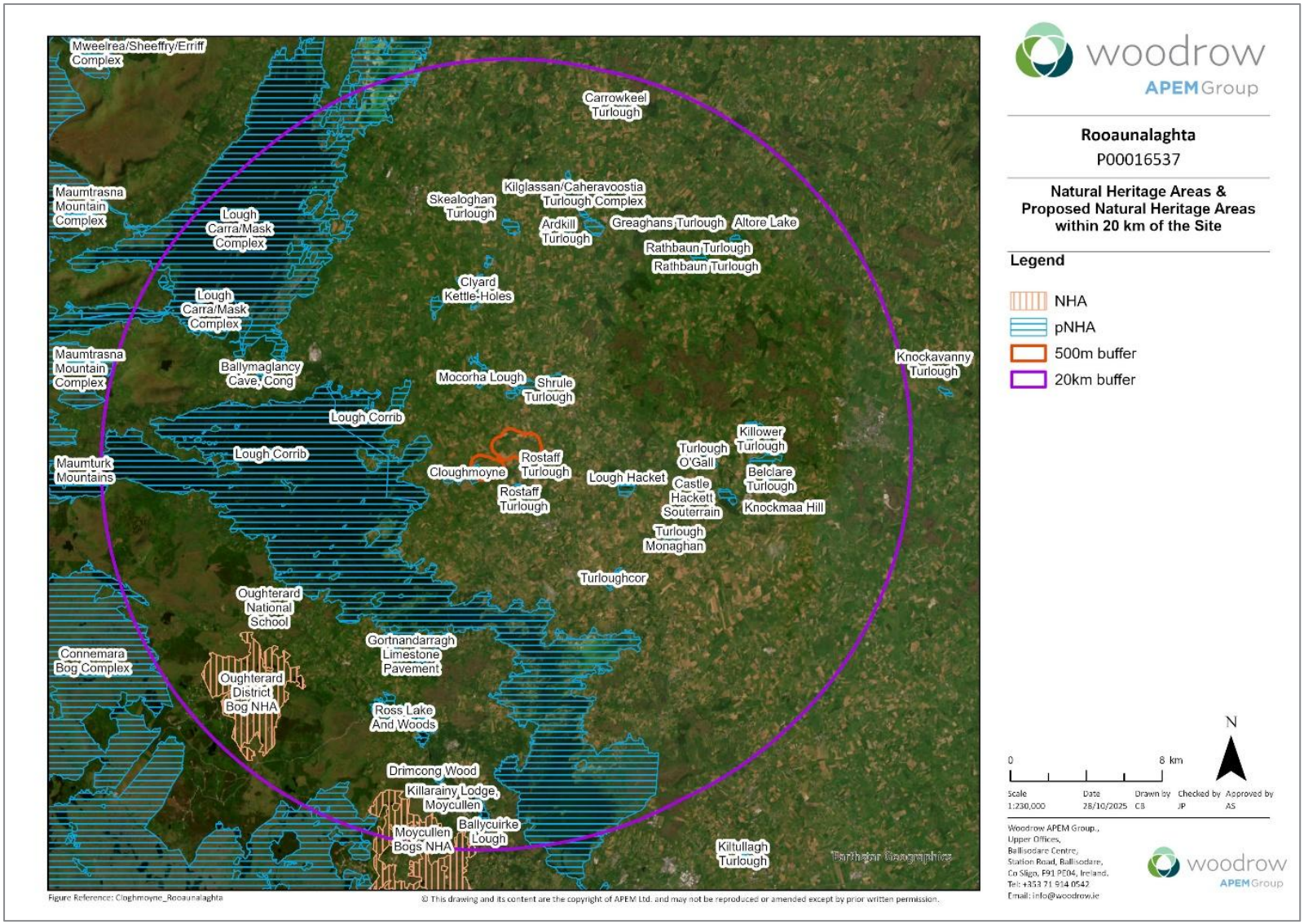


Figure 3. Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs) within 20 km buffer of the Project Site

2.2.4. Sensitivity mapping for wind farms

Bird sensitivity mapping published by Mc Guinness *et al*. (2015) classifies the Project Site and the surrounding 2 km buffer as being of generally low to medium sensitivity to wind energy development (Figure 4). Of the 22 species considered within the sensitivity mapping assessment, records for 17 species were returned from the desk study datasets for the 10 km grid squares M24 and M25. These records comprise a combination of NBDC and I-WeBS data and include five wader species, red-throated diver (*Gavia stellata*), three goose species, whooper swan and Bewick's swan (*Cygnus columbianus*), black-headed gull, common tern (*Sterna hirundo)*, corncrake (*Crex crex*), grey partridge (*Perdix perdix*), barn owl (*Tyto alba)* and hen harrier (*Circus cyaneus*). Dates of the most recent records returned for these species range from 1972 to 2024 and are presented in Appendix A.

Common scoter (*Melanitta nigra*) is identified as a species of medium sensitivity within the McGuiness *et* al. (2015) mapping for both 10 km squares. However, no records of the species were returned from the NBDC or I-WeBS datasets reviewed for the desk study, reflecting its predominantly coastal distribution and the absence of recent records within the study area.

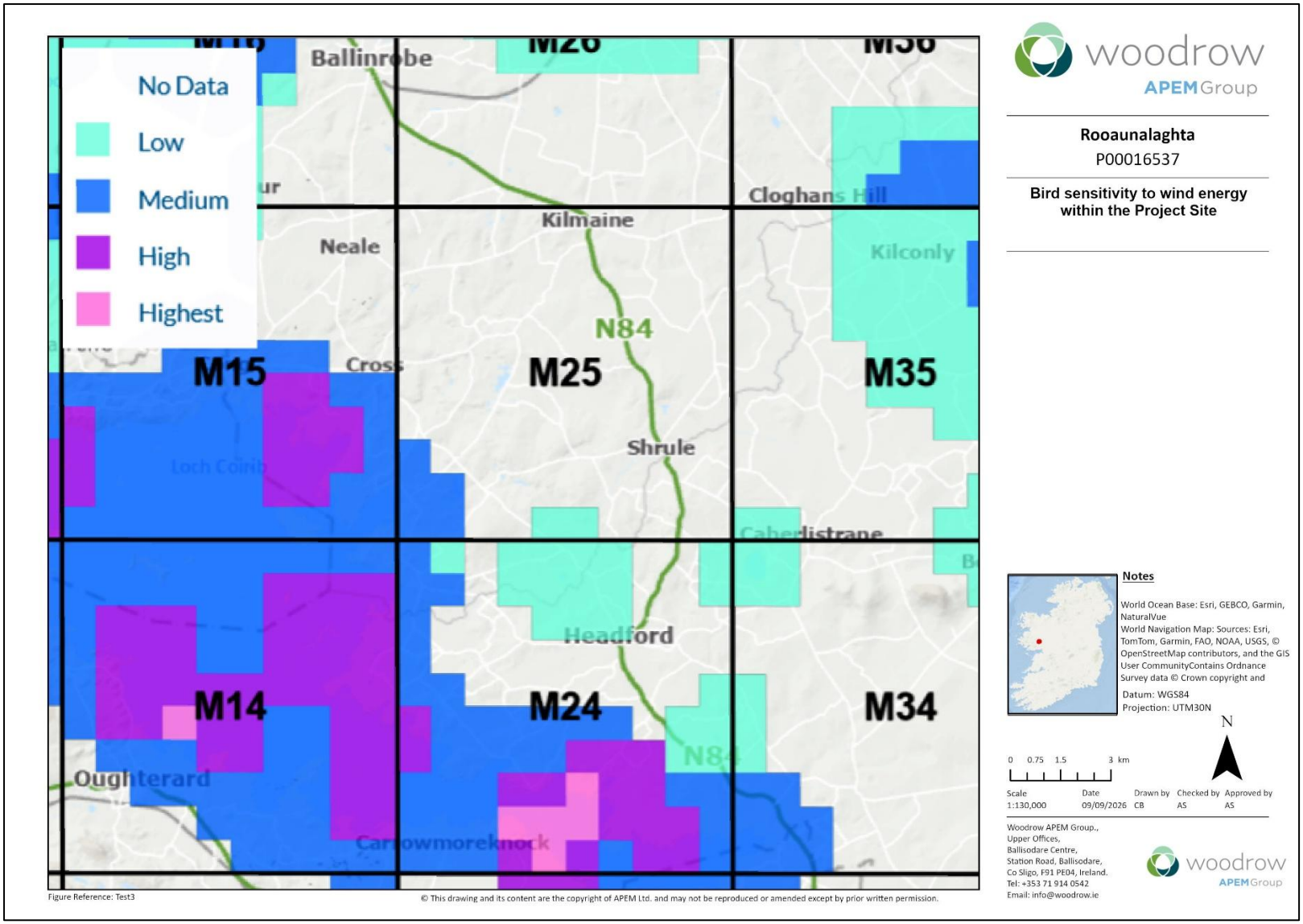


Figure 4. Bird sensitivity to wind energy within the Project Site (McGuiness *et al*, 2015).

2.3. Wintering waterbirds

There are no mapped rivers, streams or waterbodies within the Project Site. The Black River occurs in proximity to the Project Site and flows through Rostaff Turlough pNHA before entering Lough Corrib approximately 3 km downstream. Several I-WeBS sites are located within 5 km of the Project Site, including Rostaff Turlough (c. 0.6km), Ballybackagh Turlough (2.5 km), Lough Corrib SPA (3.79 km), and Lough Hacket (4.5 km). Additional wetland areas within the 5 km of the Project Site include Shrule Turlough SAC and Mocorha Lough SAC (both also designated as pNHAs) (Figure 5Figure 5). Collectively, these wetlands support a range of wintering waterbird species and provide foraging and roosting habitat within the wider study area.

Within 5 km of the Project Site, several of these wetlands, particularly Lough Corrib, Rostaff Turlough and Lough Hacket, regularly support waterbird numbers that meet or exceed the 1% national (all-Ireland) population thresholds, indicating nationally important populations. Lough Corrib supports nationally significant numbers of coot (*Fulica atra)* and tufted duck (*Aythya fuligula*), with both peak and mean counts well above 1%, and also exceeds the 1% threshold for mute swan (*Cygnus olor)* and whooper swan on peak counts. Rostaff Turlough holds nationally important numbers of shoveler (*Spatula clypeata*) and Greenland white-fronted goose (*Anser albifrons flavirostris*), with peak and mean values above the 1% threshold. These results highlight the importance of the wetland network surrounding the Project Site for wintering waterbirds at a national scale.

Appendix A lists all wintering waterbird species recorded from I-WeBS sites in the surrounding area and provides typical mean and peak monthly counts. These data have been used to evaluate population importance using 1% thresholds for regularly occurring species. All I-WeBS sites within 20 km of the Project Site are shown in Figure 5Figure 5.

Rostaff Turlough has historically supported nationally important numbers of Greenland white-fronted goose, with an average peak count of 83 birds and an absolute maximum of 88 birds recorded during 1982/83-1991/92. More recent monitoring indicates substantially lower numbers, with a peak count of 44 birds recorded during winter 2024/25 (Fox et al., 2026). Nevertheless, the site remains a known wintering location for this Annex I species within the wider Lough Corrib wetland network. Greenland white-fronted geese have also been recorded elsewhere within the wider Lough Corrib wetland complex, including a peak count of 15 birds at Lower Lough Corrib during winter 2024/25 (Fox *et al*., 2026).

Whooper Swan also occurs within the wider study area, particularly at Lough Corrib where peak counts exceed all-Ireland 1% thresholds, with a peak of 250. Rostaff Turlough has historically supported smaller numbers, with up to 37 birds recorded.

Lough Corrib, the largest waterbody within the 5 km, supports internationally important numbers of mute swan with a peak count of 338 and a mean of 78. It also holds nationally important numbers of greylag goose (peak 160, mean 52) and coot (peak 6,372, mean 1,237). Other notable species include tufted duck (peak 6,558, mean 542), and wigeon (peak 283, mean 79). The qualifying interests (QIs) for Lough Corrib are provided in Table 1).

Table 1. SPAs within 20 km within the Project Site and their Qualifying Interests

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Rostaff Turlough has recorded nationally important numbers of shoveler, with a peak of 156 and a mean peak of 43. Lough Hacket, part of the North Central Galway Lakes I-WeBS complex, supports nationally important numbers of greylag goose and consistent populations of wigeon and mallard (*Anas platyrhynchos)*. Historical I-WeBS data show peak counts of up to 500 wigeon and 200 mallards, with mean counts of 145 and 45, respectively, indicating long-term, regular use of the site.

Lough Mask SPA, approximately 14.12 km northwest of the Project Site, also supports nationally important populations of several waterbird species, including tufted duck (peak 339, mean 76), goldeneye (*Bucephala clangula*) (peak 212, mean 14) and little grebe (*Tachybaptus ruficollis*) (peak 34, mean 9).

In addition to wetland habitats, the northern part of the Project Site contains small areas of scrub and forestry dominated by oak (*Quercus spp.*), ash (*Fraxinus excelsior*) and hazel (*Corylus avellana*), which have potential to support woodcock (*Scolopax rusticola*). The majority of the Project Site comprises grassland and health habitats, which may provide foraging opportunities for species such as golden plover, lapwing and greylag goose.

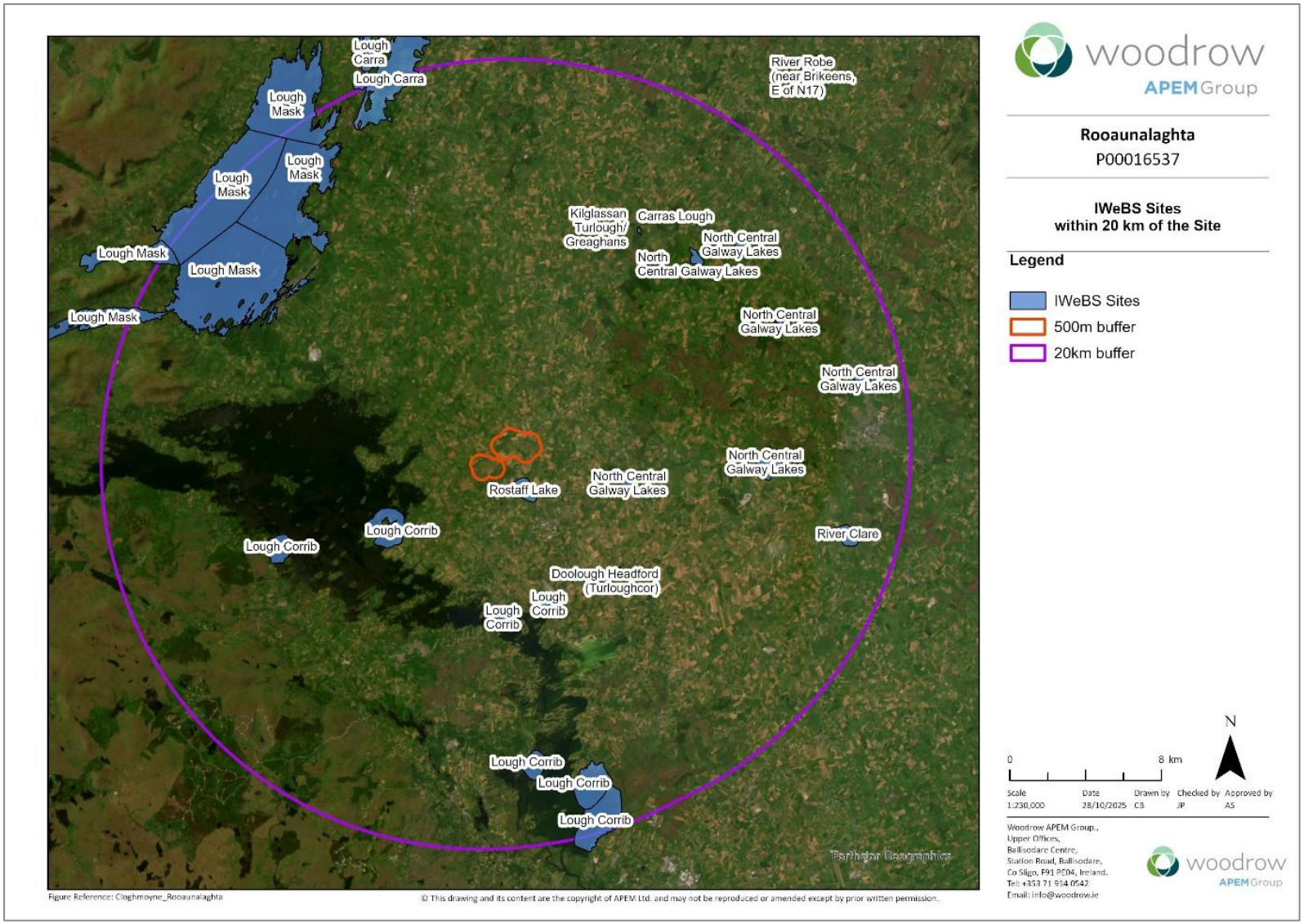


Figure 5. I-WeBS sites located within the 20 km buffer of the Project Site

2.4. Breeding waders

According to the latest Bird Atlas 2007-11, snipe (*Gallinago gallinago*), curlew, lapwing and redshank (*Tringa totanus*) were recorded breeding within the 10 km grid squares encompassing the Project Site (Balmer *et al.,* 2013). While the Project Site may not contain extensive wet grasslands, areas of marshy farmland could provide suitable breeding habitat for snipe and curlew. The open farmland, which comprises much of the Project Site, also has the potential to support breeding lapwing, and this will be assessed through targeted breeding bird surveys.

Woodcock has undergone declines in both breeding range and population in Ireland and is currently Red-listed status on BoCCI 2020-2026. Although breeding is now largely restricted to the midlands and southeast, and no breeding has been recorded at the Project Site, the oak-ash-hazel woodland in the northern section may provide suitable habitat. Targeted dusk surveys will be undertaken to detect crepuscular species such as woodcock and snipe.

There is no evidence of golden plover breeding within the Project Site or the two 10 km national grid squares that encompass it. Historic records indicate that dunlin (*Calidris alpina*) bred within grid square M24 (Sharrock, 1976) based on surveys conducted between 1968 – 1972. However, subsequent national breeding atlases (1993, 2007–11) have not reported breeding in this area, indicating that the species has likely been lost from this part of the national grid due to habitat changes.

Based on Lauder & Lauder (2020) which identifies breeding wader hotspots using species distribution data and an ecological scoring criterion, the nearest areas of high breeding-wader value occur within the 10 km grid squares adjacent to the Project Site and encompassing Lough Corrib. The neighbouring grid squares M23 (south of the Project Site) and M14 (west of the Project Site), both rank within the top 10 most important 10 km squares for breeding waterbirds in Ireland.

2.5. Raptors

Buzzard (*Buteo buteo*), sparrowhawk (*Accipiter* nisus) and kestrel (*Falco tinnunculus)* are widespread resident species in Ireland and based on habitat availability it is possible that breeding may occur within the 2 km buffer of the Project Site. Confirmed breeding buzzard were recorded between 2007-11 within national grid square M24, one of the 10km grid squares which encompass the Project Site (Balmer et al., 2011). Further information is provided in the sections below on hen harrier, merlin (*Falco columbarius),* peregrine (*Falco peregrinus*), kestrel and owl species, as these have historical breeding records in the area and /or are of conservation concern.

2.5.1. Hen harrier

Hen harrier is an Amber-listed species (Gilbert et al., 2021) and listed under Annex I of the Birds Directive. The 2022 National Hen Harrier Survey (Ruddock et al., 2024) did not include grid squares M24 and M25; however, a sighting recorded immediately south of the Project Site was made during the course of the national survey. The Bird Atlas 2007–11 (Balmer et al., 2013) reports breeding in M24 but not in M25, with the nearest confirmed breeding in R48 (Slieve Aughty Mountains SPA), approximately 65 km southeast.

Lough Corrib SPA (approximately 3.79 km west) lists hen harrier as a qualifying interest and supports nationally important winter roosts (NPWS, 2017). While no known roosts occur in M24 or M25, one is recorded in adjacent M33 (approximately 10 km away), and winter foraging can extend up to 20 km (NPWS, 2015a), therefore potentially including the Project Site.

Due to the lack of suitable nesting habitat, the Project Site and the 2 km buffer are considered unsuitable for breeding, though occasional winter use remains possible.

2.5.2. Merlin

Merlin is an Amber-listed species (Gilbert *et* al., 2021) and also listed on Annex I of the Birds Directive. Although breeding merlin in Ireland are typically associated with upland habitats such as blanket bog, heath and rough moorland, the Project Site is dominated by improved and semi-improved agricultural grassland, hedgerows, woodland and wetland features, with little or no extensive upland habitat present. Merlin may utilise old tree nests in woodland where available (Lusby et al., 2017). The nearest SPA designated for merlin is the Connemara Bog Complex SPA, located approximately 22 km south of the Project Site, beyond the species' typical breeding season foraging range (2–5 km) (SNH, 2016; Lusby et al., 2017).

Records from the Bird Atlas 2007–2011 confirm merlin breeding within grid square M24 (encompassing the Project Site) and historic breeding within M25 (Balmer et al., 2013; Gibbons et al., 1993). Winter observations are also reported locally (Balmer et al., 2013). Woodland within and adjacent to the Project Site may provide nesting opportunities, while surrounding farmland and wetlands may provide foraging opportunities during the non-breeding season on prey such as passerines, golden plover, and snipe.

2.5.3. Peregrine

Whilst peregrine is a Green-listed species in Ireland (Gilbert *et al*., 2021), it is listed on Annex I of the Birds Directive. Suitable nesting habitat occurs within the Project Site, including two quarries and a castle within grid square M24. These features provide elevated ledges, cliff-like faces, sheltered cavities and other structures that may be used by nesting peregrines and are analogous to the natural cliff habitats typically favoured by the species for breeding. Quarries and buildings such as castles are widely recognised as suitable nesting substrates where natural cliffs are absent or limited. An occupied nest was recorded at Kinlough Castle (east of the Project Site) in 2015 (NBDC Birds of Ireland dataset). With a core breeding season foraging range of approximately 2 km and non-breeding mean range of 3 km (SNH, 2016). Given the proximity of the historical nest record and published foraging ranges, the Project Site lies within potential foraging habitat available to breeding peregrines. The farmland, scrub woodland, and adjacent wetlands support year-round prey species including passerines, pigeons, and seasonally wintering waterbirds (e.g., lapwing, golden plover, snipe, woodcock).

2.5.4. Kestrel

Kestrel is a Red-listed species in Ireland due to population declines linked to reduced prey availability (Gilbert *et* al., 2021; Wilson-Parr & O'Brien, 2019). The Bird Atlas 2007-2011 recorded year-round presence with confirmed breeding in grid square M25 and possible breeding M24 (Balmer *et al.,* 2013). Habitats within the Project Site, including farmland and scrub woodland, provide potential nesting

opportunities (e.g., disused corvid nests, quarries, buildings) and suitable foraging habitat for small mammals and other prey, indicating possible year-round use.

2.5.5. Barn owl

Barn owl is a Red-listed species in Ireland due to significant population declines (Gilbert *et al*., 2021), linked to reduced prey availability from agricultural intensification, rodenticide exposure, habitat loss, and road mortality (Taylor, 1994; Shawyer, 1998; Copland & Lusby, 2012; Newton *et al*., 1990; Boves & Belthoff, 2012; Borda-de-Agua *et al*., 2014; TII, 2017). The Bird Atlas 2007-2011 reported evidence of breeding within grid square M24, while historic breeding was recorded in M25 during the First Atlas of Breeding Birds (1968–1972) (Sharrock, 1976), with an additional sighting noted in 2018 (Balmer et al., 2013). Potential nesting features within the Project Site include a derelict cottage and quarry in the East within grid square M24, and mature trees with cavities, while grassland, hay meadow, hedgerows, and unmanaged margins may provide foraging opportunities for small mammals, the species' primary prey.

2.5.6. Other owl species

2.5.6.1. Long-eared owl

Long-eared owl (*Asio otus*) is a Green-listed species (Gilbert *et al*., 2021) and the most common owl nationally (Greenwood *et* al., 2003). The Bird Atlas 2007–2011 reported probable breeding in grid square M25, with year-round sightings recorded in M24 as recently as 2017 (NBDC Birds of Ireland dataset). Suitable habitat is present within the Project Site, with scrub and woodland for nesting and adjacent open habitats for foraging, supporting prey such as small mammals, birds, and amphibians.

2.5.6.2. Short-eared owl

Short-eared owl (*Asio flammeus*) is an Amber-listed species in Ireland due to low population numbers and is listed on Annex I in the Bird Directive (Gilbert *et al,* 2021; European Union, 2009). It is a scarce winter visitor, usually from Britain (Glue, 2002). One record was reported within grid square M24 in winter 2017 (NBDC), with an additional record in adjacent M33 in 2023. Similar to other owls, short-eared owl primarily preys on small mammals found in rough grassland, scrub, and hedgerow habitats present within the Project Site; however, given its scarcity, it is unlikely to be regularly observed.

2.6. Other species of conservation concern

2.6.1. Swift

Swift (*Apus apus*) is a Red-listed species in Ireland due to severe recent declines in breeding populations (Colhoun & Cummins, 2013; Gilbert et al., 2021). Swifts may forage across the Project Site during the summer while nesting in nearby buildings, including Kinlough Castle, where seven occupied nests were recorded in 2024 (Swift Conservation, 2024). Swift foraging activity occurs across a broad range of flight heights, and can vary according to weather conditions, prey availability and breeding stage. The open farmland and wetland habitats within and surrounding the Project Site may provide suitable foraging habitat for aerial insects during the breeding season.

2.6.2. Kingfisher

Kingfisher (*Alcedo atthis*) is an Amber-listed species (Gilbert *et* al., 2021) and is an Annex I species in the EU Bird Directive (European Union, 2009). The nearest SPAs where kingfisher is a qualifying interest are River Boyne and River Blackwater SPA [site code: 004232], located approximately 138 km east of the Project Site and River Nore SPA [site code: 004233] located approximately 140 km southeast of the Project Site. Nevertheless, kingfisher may utilise the Black River, which occurs within the surrounding landscape and flows towards Lough Corrib. According to the Bird Atlas 2007-2011, kingfisher was recorded as probable breeding within grid square M24 (Balmer *et al.,* 2013), with the most recent sighting in July 2019 recorded on the NBDC Birds of Ireland dataset. In grid square M25, the most recent sighting was in 2014 (NBDC), with evidence of historic breeding recorded during the First Atlas of Breeding Birds (Sharrock, 1976).

2.6.3. Passerines of conservation concern

Most passerines are considered to be at low risk of turbine collision or displacement due to their flight behaviour and population dynamics (NatureScot, 2025). However, less common breeding species of conservation concern may be present locally. Suitable habitats provided by farmland, hedgerows, and wet grassland may support whinchat (*Saxicola rubetra*), ring ouzel (*Turdus torquatus*), tree sparrow (*Passer montanus*) and yellowhammer (*Emberiza citronella)*. Tree sparrow and yellowhammer have been recorded within the 10 km squares encompassing the Project Site (NBDC, 2018), with yellowhammer reported as a probable breeder in M24 (Balmer et al., 2013) and whinchat with historic breeding in M25 (Sharrock, 1976). Other Red-listed species include meadow pipit (*Anthus* pratensis) and grey wagtail (*Motacilla cinerea*), both confirmed breeders within the Project Site grid squares (Balmer et al., 2013). Meadow pipit populations appear stable, whereas grey wagtail continues to decline (Lewis et al., 2020), with the most recent record in 2023 (NBDC, 2013).

Additional Red-listed non-passerines with historic breeding in the area include stock dove (*Columba oenas*) and quail (*Coturnix coturnix*) (Sharrock, 1976), though their occurrence is likely infrequent.

3. METHODOLOGY

NatureScot (2025) guidelines provide recommended survey methodologies for the assessment of avian populations within and adjacent to onshore wind farms. Survey methodologies utilised for ornithological surveys are outlined in the following section and adhere to the relevant guidance.

Surveys at Rooaunalaghta were initially conducted at two separate sites, Cloghmoyne and Rooaunalaghta, until the non-breeding season of 2024–25, when they were merged into a single survey unit. This reflected the evolution of the project from two initially separate development areas into a single combined wind farm proposal and ensured that survey coverage aligned with the final Project Site boundary. Survey effort and results for each survey are displayed as one within this report.

Study areas were defined according to SNH guidelines which recommends two years of ornithological surveys are undertaken, unless a single year of data can be demonstrated to be sufficiently robust for assessing potential impacts. In this case, three years of data have been collected across the following seasons:

- Year 1, non-breeding season 2022-2023 and breeding season 2023;
- Year 2, non-breeding season 2023-2024 and breeding season 2024;
- Year 3, non-breeding season 2024-2025 and breeding season 2025.

Surveys undertaken included vantage point watches, breeding bird surveys, dusk and raptor surveys, non-breeding winter walkovers, and hen harrier roost surveys.

3.1. Vantage Point (VP) surveys

VP watches record flight activity within the Core Study Area, defined as the proposed infrastructure footprint and a 500 m turbine buffer. This survey area was adopted to ensure comprehensive coverage of the proposed development and adjacent areas where bird activity could be relevant to the assessment of flight activity and collision risk. Seven VPs were used to cover the core study area, the locations of which are shown in Figure 6Figure 6. The VP locations provide almost complete coverage (99.16%) of the Core Study Area, see **Appendix 7-6: Viewshed Analysis**. The VPs selected to cover the core study area are compliant with the NatureScot (2025) guidelines, which stipulate that viewsheds from VPs should not extend more than 2 km and that the angle of view should also not be extended beyond an arc of 180 degrees.

Based on viewsheds extending 2 km, some of the viewsheds of the VPs overlap. Therefore, it is acknowledged that as a function of coverage (survey effort), the flight seconds reported cumulatively for all the VP watches will provide an overestimate for flight times. Effort was therefore made to avoid conducting VP watches simultaneously by two surveyors from VPs with overlapping viewsheds to avoid any duplicate records.

Target species are those identified as being at risk from wind farm developments and collision with turbines. The target species for which flightline data was captured are as follows:

- Waders and wildfowl (ducks, geese and swans);
- Other waterbirds (including grebes, herons, rails, crakes & gulls);
- Raptors and owls;

- Any species listed in Annex I of the Birds Directive; and
- Any Red- or Amber-listed species on the Birds of Conservation Concern in Ireland 2020-26 (BoCCI).

VP watches involve the surveyor observing birds from a stationary position using binoculars and a telescope. Following NatureScot (2025), the viewshed of the VP is scanned at 5-minute intervals. When a target species is seen, the surveyor estimates the height of the bird and its usage of the area by drawing its flight path on a map and noting its behaviour. Flight heights were assigned to predefined height bands and were estimated visually by experienced surveyors, using topographical features and other known reference points within the landscape, where available, to aid height estimation.. Other data collected includes the number of birds, time of detection and duration of flight, as well as sex and age class if relevant. A list of all non-target species encountered within the Core Study Area is also compiled during watches, though priority is given to recording target species. NatureScot guidance (2025) suggests continuous watches should be no longer than 3 hours to reduce observer fatigue.

The aim for each survey season, i.e. breeding season (typically mid-March to mid-September) and non-breeding season (mid-September to mid-March), is to conduct a minimum of 36 hours of watches per VP per season, ensuring that watches are spread relatively evenly over the survey season. Surveys undertaken for the Project Site are compliant with NatureScot guidelines. Survey hours completed at each VP location per season are provided in (Breeding season 2025). Full details of survey effort and weather conditions can be found in **Appendix 7-5: Survey Effort and Weather Conditions**.

Table 4 (Non-breeding 2022-23), Table 5 (Breeding season 2023), Table 6 (Non-breeding 2023-24), Table 7 (Breeding season 2024), Table 8 (Non-breeding season 2024-25) and Table 9 (Breeding season 2025). Full details of survey effort and weather conditions can be found in **Appendix 7-5: Survey Effort and Weather Conditions**.

Table 4. Dates and duration of VP watches undertaken during Year 1 non-breeding season

Non-breeding season 2022-23	VP1	VP2	VP3	VP4	VP5	VP6	VP7
September	6.0	6.0	6.0	6.0	3.0	6.0	3.0
October	6.0	6.0	6.0	6.0	6.0	6.0	-
November	6.0	6.0	6.0	6.0	6.0	6.0	4.0
December	6.0	6.0	6.0	6.0	6.0	6.0	6.0
January	6.0	6.0	6.0	6.0	6.0	3.0	4.0
February	6.0	6.0	6.0	6.0	9.0	3.0	13.0
March	-	-	-	-	-	6.0	6.0
Total hours	36.0	36.0	36.0	36.0	36.0	36.0	36.0

Table 5. Dates and duration of VP watches undertaken during Year 1 breeding season

Breeding season 2023	VP1	VP2	VP3	VP4	VP5	VP6	VP7
March	3.0	3.0	3.0	3.0	3.0	3.0	2.0
April	6.0	6.0	6.0	6.0	6.0	-	4.0
May	6.0	6.0	6.0	6.0	6.0	11.5	8.5
June	6.0	6.0	6.0	6.0	6.0	-	-
July	6.0	6.0	6.0	9.0	9.0	6.0	6.0
August	6.0	6.0	6.0	3.0	3.0	9.0	6.0
September	3.0	3.0	3.0	3.0	3.0	3.5	9.0
Total hours	36.0	36.0	36.0	36.0	36.0	33.0	35.5

Table 6. Dates and duration of VP watches undertaken during Year 2 non-breeding season

Non-breeding season 2023-24	VP1	VP2	VP3	VP4	VP5	VP6	VP7
September	3.0	3.0	3.0	3.0	3.0	3.0	3.0
October	6.0	6.0	6.0	6.0	6.0	6.0	6.0
November	6.0	10.0	6.0	6.0	6.0	6.0	6.0
December	-	-	-	6.0	6.0	6.0	6.0
January	12.0	3.0	6.0	6.0	6.0	6.0	6.0
February	6.0	6.0	12.0	9.0	9.0	-	-
March	3.0	8.0	3.0	-	-	9.0	9.0
Total hours	36.0	36.0	36.0	36.0	36.0	36.0	36.0

Table 7. Dates and duration of VP watches undertaken during Year 2 breeding season

Breeding season 2024	VP1	VP2	VP3	VP4	VP5	VP6	VP7
March	3.0	3.0	3.0	3.0	3.0	-	-
April	6.0	6.0	6.0	7.0	6.0	9.0	9.0
May	3.0	3.0	3.0	3.0	3.0	6.0	6.0
June	6.0	6.0	6.0	6.0	6.0	6.0	6.0
July	6.0	6.0	6.0	5.5	6.0	6.0	6.0
August	9.5	9.5	9.0	12.0	12.0	12.5	12.0
September	3.0	3.0	3.0	-	-	-	-
Total hours	36.5	36.5	36.0	36.5	36.0	39.5	39.0

Table 8. Dates and duration of VP watches undertaken during Year 3 non-breeding season

Non-breeding season 2024-25	VP1	VP2	VP3	VP4	VP5	VP6	VP7
October	9.0	9.0	9.0	6.0	6.0	6.0	6.0
November	6.0	6.0	6.0	6.0	6.0	6.0	6.0
December	6.0	6.0	6.0	6.0	6.0	6.0	6.0
January	-	6.0	6.0	6.0	6.0	6.0	6.0
February	6.0	6.0	6.0	6.0	6.0	6.0	6.0
March	9.0	3.0	3.0	6.0	6.0	6.0	6.0
Total hours	36.0	36.0	36.0	36.0	36.0	36.0	36.0

Table 9. Dates and duration of VP watches undertaken during Year 3 breeding season

Breeding season 2025	VP1	VP2	VP3	VP4	VP5	VP6	VP7
March	-	-	4.0	-	6.0	3.0	3.0
April	6.0	9.0	2.0	6.0	-	6.0	6.0
May	6.0	6.0	6.0	6.0	6.0	6.0	6.0
June	6.0	6.0	6.0	9.0	6.0	9.0	6.0
July	6.0	6.0	6.0	6.0	6.0	6.0	6.0
August	6.0	6.0	6.0	6.0	6.0	6.0	6.0
September	6.0	3.0	6.0	3.0	6.0	-	3.0
Total hours	36.0	36.0	36.0	36.0	36.0	36.0	36.0

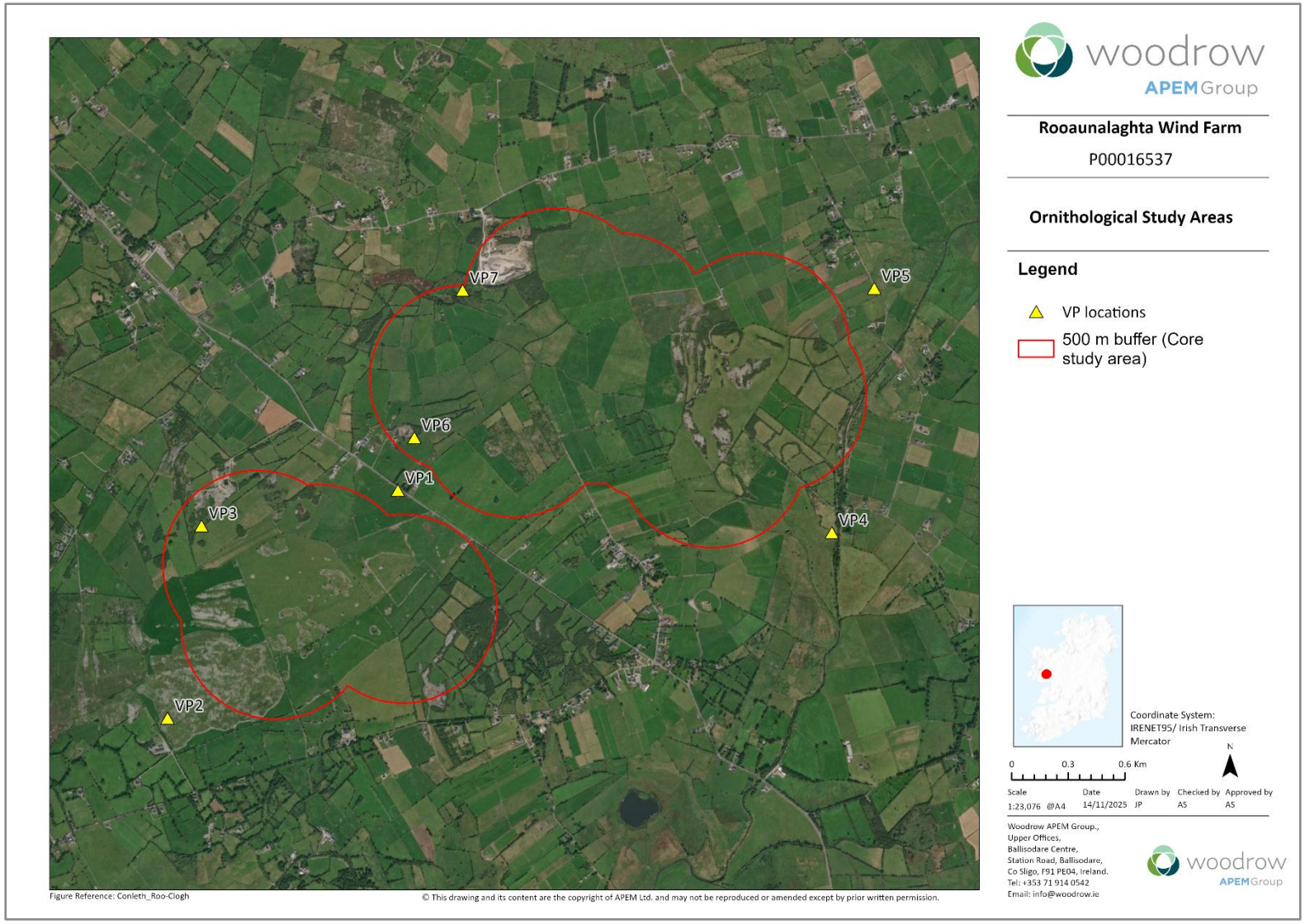


Figure 6. Vantage Point (VP) locations and core study area

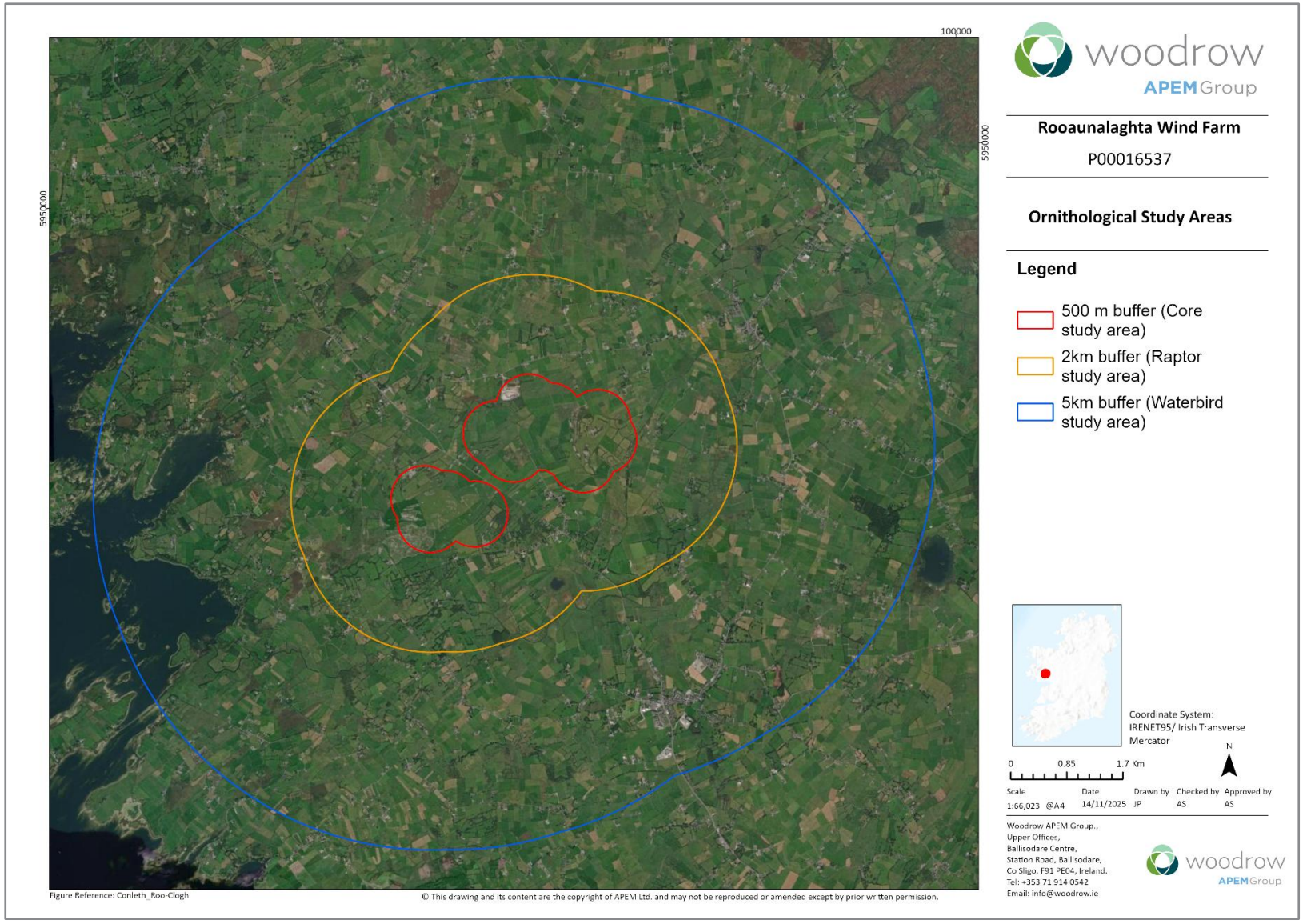


Figure 7. Overview of 500m, 2 km and 5km Ornithological Study Areas

3.2. Breeding bird surveys

3.2.1. Breeding bird survey effort

Breeding bird surveys were conducted within the core study area (Figure 7Figure 7) across the breeding seasons of Year 1 (April to July 2023), Year 2 (April to July 2024) and Year 3 (April to July 2025), in accordance with NatureScot (2025) guidelines. The purpose of these surveys, as outlined by NatureScot (2025) guidelines, is to record the numbers and distribution of breeding birds utilising the Project Site and to provide an overview of breeding bird activity within the core study area. The surveys provide an overview of bird activity, with routes designed to sample all key habitat types, including woodland, agricultural grassland, and treelines or hedgerows, and to identify potential ecological constraints such as breeding waders or raptors.

Survey methodology combined the approach of O'Brien and Smith (1992), developed for mapping lowland wader territories and other ground-nesting species of conservation concern, and the Common Bird Census (CBC) approach outlined in Gilbert et al. (1998).

During breeding bird surveys geo-referenced data were collected either on field maps or by using ArcGIS Survey123, an Esri application for the digital recording of survey results, and routes and coverage were tracked using the Outdoor Active application. Surveyors recorded all birds seen or heard, typically within 100 m, though topography occasionally allowed detection at greater distances.

In addition to target species, point data on the occurrence of non-target species was also recorded to provide an indication of the wider bird assemblages occurring within the Project Site. Surveyors identified and recorded breeding behaviours of birds and these data were subsequently used to undertake breeding bird territory analysis for the Project Site.

A summary of breeding bird survey effort is presented in Table 10, Table 11, and Table 12, with further details on weather and survey effort provided in **Appendix 7-5: Survey Effort and Weather Conditions**. To maximise detectability, surveys were undertaken only under favourable weather conditions, avoiding moderate to strong winds (Beaufort Force >5), persistent rain, and poor visibility.

Table 10. Summary of survey effort for Year 1 breeding bird surveys

Breeding 2023			
Date	**Visit number**	**Survey type**	**Surveyor**
13/04/2023	1	Breeding bird	DR[6]
27/04/2023	2	Breeding bird	DR
04/05/2023, 07/05/2023	3	Breeding bird	JOC[7], SD[8]
17/05/2023, 18/05/2023, 19/05/2023	4	Breeding bird	DR, SD
24/05/2023	5	Breeding bird	DR
05/06/2023, 06/06/2023, 07/06/2023	6	Breeding bird	DR
13/06/2023, 14/06/2023, 15/06/2023	7	Breeding bird	DR
18/07/2023, 22/07/2023	8	Breeding bird	DR

6 David Russell

7 James O'Connor

8 Seán Dundon

Table 11. Summary of survey effort for Year 2 breeding bird surveys

Breeding 2024			
Date	**Visit number**	**Survey type**	**Surveyor**
03/04/2024, 04/04/2024, 08/04/2024, 09/04/2024	1	Breeding bird	SM[9]
20/04/2024, 27/04/2024	2	Breeding bird	BF[10]
11/05/2024, 18/05/2024, 24/05/2024, 25/05/2024	3	Breeding bird	BF
28/06/2024, 30/06/2024, 01/07/2024	4	Breeding bird	BF, SM
28/07/2024, 29/07/2024	5	Breeding bird	SM

Table 12. Summary of survey effort for Year 3 breeding bird surveys

Breeding 2025			
Date	**Visit number**	**Survey type**	**Surveyor**
05/04/2025, 06/04/2025, 07/04/2025	1	Breeding bird	SM
01/05/2025, 08/05/2025	2	Breeding bird	JOC
29/06/2025, 01/07/2025, 02/07/2025	3	Breeding bird	SM
25/07/2025, 26/07/2025, 27/07/2025, 28/07/2025	4	Breeding bird	SM

3.2.2. Dusk survey effort

The dusk surveys were conducted within the core study area (Figure 7) as supplementary component of the breeding bird survey programme to detect crepuscular and nocturnal species, particularly breeding snipe, woodcock and owls. Such surveys are necessary to detect species exhibiting crepuscular or nocturnal activity patterns which are unlikely to be recorded reliably during daytime breeding bird surveys.

Suitable wet habitats within the core study area were surveyed for breeding snipe following the methodology described by O'Brien and Smith (1992). Surveys were undertaken during the late afternoon and evening period to maximise the likelihood of detecting breeding display behaviour, including the characteristic 'chipping' and 'drumming' calls of territorial males.

Dusk surveys were also carried out in woodland habitats to detect 'roding' woodcock (territorial males) and long-eared owl, following the methodologies described by Gilbert et al. (1998) and Hardey et al. (2013). Woodcock surveys were undertaken between May and June, commencing approximately 15 minutes before sunset and continuing for up to 60 minutes after sunset, in line with recommendations from the UCC Irish Woodcock Project (UCC Ornithology Group, 2021).

Long-eared owl surveys targeted peak vocal activity periods early in the season (late March to May), when adults are most vocal, and later in the season (late June to August), when juveniles can be detected by loud 'begging' calls.

During dusk surveys, geo-referenced data were collected using annotated field maps or ArcGIS Survey123 (Esri) for digital recording of survey results, with survey routes and coverage tracked using the Outdoor Active application. In addition to target species, records of non-target species were also collected to provide an indication of the wider bird assemblage within the Project Site. Breeding behaviours were recorded where observed and used to inform breeding bird territory analysis.

9 Simon Mitchell

10 Brien Foley

To maximise detectability, surveys were undertaken only under favourable weather conditions, avoiding moderate to strong winds (Beaufort Force >5), persistent rain and poor visibility.

A summary of dusk survey effort can be found in

Table 13, and Table 14 with further details on weather and survey effort provided in **Appendix 7-5: Survey Effort and Weather Conditions**.

Table 13. Summary of survey effort for Year 1 dusk surveys.

Breeding 2023			
Date	**Visit number**	**Survey type**	**Surveyor**
29/03/2023, 30/03/2023	1	Dusk survey	AW[11], JOC
03/04/2023	2	Dusk survey	JOC
19/05/2023	3	Dusk survey	SD
05/06/2023	4	Dusk survey	DR
14/06/2023	5	Dusk survey	DR
16/07/2023, 21/07/2023	6	Dusk survey	DR
27/08/2023, 28/08/2023	7	Dusk survey	DR
11/09/2023	8	Dusk survey	DR

Table 14. Summary of survey effort for Year 2 dusk surveys

Breeding 2024			
Date	**Visit number**	**Survey type**	**Surveyor**
23/03/2024, 24/03/2024	1	Dusk survey	SM
05/04/2024, 07/04/2024	2	Dusk survey	SM
11/05/2024, 18/05/2024, 24/05/2024, 25/05/2024	3	Dusk survey	BF
24/06/2024, 25/06/2024	4	Dusk survey	BF
27/07/2024,28/07/2024, 29/07/2024	5	Dusk survey	SM
21/08/2024, 29/08/2024, 30/08/2024	6	Dusk survey	SM

3.3. Breeding raptor surveys

NatureScot (2025) recommends surveying a 2 km buffer around proposed turbine locations for breeding raptors (hereafter Raptor study area, Figure 7), with species-specific adjustments where needed. As the Project Site lies beyond the zone of influence of any SPAs designated for breeding raptors (SNH, 2016), a 2 km buffer is considered sufficient.

A combination of watches over suitable habitat, as well as transect surveys, were used to observe breeding behaviour to identify breeding raptor territories within the raptor study area during the breeding season in Year 1 (March to May 2023), Year 2 (March to July 2024) and Year 3 (March to July 2025). Survey coverage in Year 1 did not extend into the later part of the breeding season; however, this was supplemented by more extensive survey coverage in Years 2 and 3, both of which extended through July and provided full seasonal coverage of the breeding period. Survey methods for breeding raptors followed those outlined in Hardey et al. (2013).

During breeding raptor surveys geo-referenced data was collected either on field maps or by using ArcGIS Survey123, an Esri application for the digital recording of survey results, and routes and coverage were tracked using the Outdoor Active application. In addition to target species, point data

11 Adrian Walsh

on the occurrence of non-target species was recorded to provide an indication of the wider bird assemblages occurring within the Project Site. Surveyors identified and recorded breeding behaviours of birds and breeding bird territory analysis was completed for the Project Site.

The dates of the breeding raptor surveys are shown in Table 15 and Table 16 with further details on weather and survey effort provided in **Appendix 7-5: Survey Effort and Weather Conditions**.

Table 15. Summary of survey effort for Year 1 breeding raptor surveys

Breeding 2023			
Date	**Visit number**	**Survey Type**	**Surveyor**
23/03/2023	1	Breeding raptor	JOC
30/03/2023, 31/03/2023	2	Breeding raptor	JOC
03/04/2023	3	Breeding raptor	JOC
16/05/2023	4	Breeding raptor	SD
17/05/2023	5	Breeding raptor	SD

Table 16. Summary of survey effort for Year 2 breeding raptor surveys

Breeding 2024			
Date	**Visit number**	**Survey Type**	**Surveyor**
25/03/2024, 26/03/2024	1	Breeding raptor	SM
20/04/2024, 27/04/2024	2	Breeding raptor	BF
04/05/2024, 12/05/2024, 19/05/2024	3	Breeding raptor	BF
23/06/2024, 24/06/2024, 27/06/2024, 30/06/2024, 01/07/2024	4	Breeding raptor	SM

Table 17. Summary of survey effort for Year 3 breeding raptor surveys

Breeding 2025			
Date	**Visit number**	**Survey Type**	**Surveyor**
30/03/2025, 01/04/2025, 02/04/2025, 08/04/2025, 10/04/2025	1	Breeding raptor	SM, CC[12]
29/05/2025, 30/05/2025	2	Breeding raptor	DL[13]
27/06/2025, 28/06/2025, 30/06/2025, 01/07/2025	3	Breeding raptor	SM
23/07/2025, 26/07/2025, 27/07/2025	4	Breeding raptor	SM

3.4. Winter walkover surveys

Winter walkover surveys were conducted within the core study area (Figure 7) in accordance with NatureScot (2025) guidance. Surveyors systematically walked through the core study area, recording all bird species encountered while ensuring that a representative sample of all habitats present within the Project Site was covered.

Winter walkovers provide useful information on the distribution of bird species occurring within the Project Site and how these species utilise different habitat types during the non-breeding season. Walkovers are also particularly useful for detecting species that may be difficult to record during VP watches, such as wintering woodcock and certain passerine species.

12 Conleth Conway

13 Dáithí Lavelle

During winter walkover surveys, geo-referenced data were collected using annotated field maps or ArcGIS Survey123 (Esri) for digital recording of survey results, with survey routes and coverage tracked using the Outdoor Active application.

Winter walkover surveys were undertaken during the non-breeding seasons in Year 1 (November 2022 to March 2023), Year 2 (November 2023 to March 2024) and Year 3 (October 2024 – February 2025).

Survey methods followed the 'look-see' method as outlined in Bibby et al., (2000) and aimed to record all bird species present. The dates of the winter walkovers are presented in Table 18, Table 19 and Table 20, with further details, including weather conditions and survey effort provided in **Appendix 7-5: Survey Effort and Weather Conditions.**

Table 18. Summary of survey effort for Year 1 non-breeding bird surveys

Non-breeding 2022-23			
Date	**Visit number**	**Survey type**	**Surveyor**
18/11/2022	1	Non-breeding walkover	JOC
28/11/2022, 29/11/2022, 30/11/2022	2	Non-breeding walkover	JOC, AP [14]
16/01/2023, 24/01/2023, 25/01/2023	3	Non-breeding walkover	AM [15] & AP
08/03/2023	4	Non-breeding walkover	DR

Table 19. Summary of survey effort for Year 2 non-breeding bird surveys

Non-breeding 2023-24			
Date	**Visit number**	**Survey type**	**Surveyor**
28/11/2023	1	Non-breeding walkover	AP
15/12/2023	2	Non-breeding walkover	AW
05/01/2024	3	Non-breeding walkover	AW
22/02/2024	4	Non-breeding walkover	JOC
07/03/2024	5	Non-breeding walkover	JOC

Table 20. Summary of survey effort for Year 3 non-breeding bird surveys

Non-breeding 2024-25			
Date	**Visit number**	**Survey type**	**Surveyor**
03/10/2024, 04/10/2024, 07/10/2024, 10/10/2024	1	Non-breeding walkover	MH [16]
14/11/2024, 15/11/2024, 16/11/2024, 19/11/2024	2	Non-breeding walkover	MH
19/02/2025, 20/02/2025, 22/02/2025	3	Non-breeding walkover	MH

3.5. Wintering waterbird surveys

In assessing the potential impacts of the proposed wind farm, it is important to provide contextual data on waterbird numbers within the wider area, relative to their usage of the Project Site. In accordance with NatureScot (2025) guidelines, monitoring is required for swan and goose foraging and roosting locations where these occur in the vicinity of the Project Site, particularly in cases where SPAs are designated for these species.

The waterbird study area was defined as a 5 km buffer around the proposed turbine layout (hereafter referred to as the Waterbird Study Area; Figure 7). This study area encompasses wetlands and waterbodies within the wider landscape considered suitable for foraging and roosting wintering

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[15] Aoife Moroney
[16] Michael Hoit

waterbirds. In accordance with NatureScot (2025) guidance, monitoring focused on wildfowl foraging and roosting locations within 1 km of the Project Site.

Wintering waterbird surveys were undertaken during the non-breeding seasons in Year 1 (October 2022 to March 2023), Year 2 (September 2023 to March 2024) and Year 3 (October 2024 to March 2025).

Surveyors recorded the locations and behaviours of waterbirds using annotated field maps or ArcGIS Survey123 (Esri), with survey routes and coverage tracked using the Outdoor Active application. While waterbirds were the primary focus of these surveys, other species encountered were also recorded, particularly raptors which may begin displaying in late winter or early spring.

Survey dates are provided in Table 21, Table 22 and Table 23, with further details, including weather conditions and survey effort available in **Appendix 7-5: Survey Effort and Weather Conditions**.

Table 21. Summary of wintering waterbird survey effort during Year 1 non-breeding season

Non-breeding 2022-23			
Date	**Visit Month**	**Survey type**	**Surveyor**
11/10/2022, 20/10/2022, 23/10/2022, 30/10/2022	October	Waterbird survey	DR
08/11/2022, 09/11/2022, 10/11/2022, 23/11/2022	November	Waterbird survey	DR
07/12/2022, 14/12/2022, 20/12/2022, 23/12/2022	December	Waterbird survey	DR, JOC
13/02/2023, 27/02/2023	February	Waterbird survey	AW, JOC
23/03/2023	March	Waterbird survey	JOC

Table 22. Summary of wider area waterbird survey effort during Year 2 non-breeding season

Non-breeding 2023-24			
Date	**Visit Month**	**Survey type**	**Surveyor**
25/09/2023, 26/09/2023	September	Waterbird survey	DR
10/10/2023, 25/10/2023	October	Waterbird survey	DR
15/11/2023, 29/11/2023	November	Waterbird survey	JOC
07/12/2023, 21/12/2023	December	Waterbird survey	JOC
18/01/2024, 29/01/2024	January	Waterbird survey	JOC
06/03/2024	March	Waterbird survey	JOC

Table 23. Summary of wider area waterbird survey effort during Year 3 non-breeding season

Non-breeding 2024-25			
Date	**Visit Month**	**Survey type**	**Surveyor**
23/10/2024	October	Waterbird survey	-
14/11/2024	November	Waterbird survey	JOC
14/12/2024	December	Waterbird survey	SM
16/01/2025	January	Waterbird survey	JOC
17/02/2025, 21/02/2025	February	Waterbird survey	MH
13/03/2025, 14/03/2025 15/03/2025	March	Waterbird survey	MH

3.6. Hen harrier roost surveys

The initial desk study indicated limited habitat suitability for a winter hen harrier roost within the 2 km buffer of the Project Site. However, the proximity to Lough Corrib SPA where hen harrier is listed as a QI species, necessitated dedicated hen harrier roost watches surveys to confirm the presence or absence of roosts during the non-breeding seasons. NatureScot (2025) guidance stipulates that surveys for communal raptor roosts, including those of hen harriers, should seek to identify any roost sites within the defined raptor study area, as illustrated in Figure 7.

For the Project Site, the approach to surveying potential hen harrier roosts was determined by two factors:

• The availability of potentially suitable roosting habitat in the vicinity of the Project Site, as described by Clarke & Watson (1990) and in the Irish national hen harrier winter roost survey guidelines (O'Donoghue, 2019); and

• Observed hen harrier activity during VP watches, walkover surveys, and wider-area surveys, which informed targeting of potential roosts.

Roost surveys were undertaken following the general approach outlined by O'Donoghue (2019) and Hardey et al., (2013). Surveys were undertaken during the period preceding sunset and continued until dark, with survey timing adapted to local conditions, observer access and site-specific requirements. Additional early morning surveys (30 minutes before sunrise to 30 minutes after sunrise) were conducted where flight activity suggested potential roost use. Monitoring frequency was monthly or twice monthly where roosts were **identified**, depending on occupancy and site fidelity.

Hen harrier surveys were conducted during the non-breeding seasons across three survey years (Year 1 to Year 3). The dates of the hen harrier roost watches are detailed in Table 24, Table 25 and Table 26, with further details on weather conditions and survey effort provided in **Appendix 7-5: Survey Effort and Weather Conditions** .

Table 24. Summary of hen harrier roost surveys during Year 1 2022-2023 non-breeding season

Non-breeding 2022-23			
Date	**Start time**	**Duration**	**Observer**
22/11/2022	1630	1	DR
23/12/2022	0845	0.5*	JOC
13/02/2023	1615	2	AW
27/02/2023	1745	1	JOC
*Survey abandoned due to poor weather conditions			

Table 25. Summary of hen harrier roost surveys during Year 2 2023-2024 non-breeding season

Non-breeding 2023-24			
Date	**Start time**	**Duration**	**Observer**
15/11/2023	1615	1	JOC
29/11/2023	1545	1.25	JOC
18/01/2024	1615	1	JOC

Table 26. Summary of hen harrier roost surveys during Year 3 2024-2025 non-breeding season

Non-breeding 2024-25			
Date	**Start time**	**Duration**	**Observer**
22/02/2025	1700	1.5	MH
28/02/2025	0655	1	JOC
15/03/2025	1735	1.5	MH

3.7. Survey limitations

The surveys completed allowed for the identification of sensitive ornithological receptors within the Project Site and surrounding Study Areas and are considered sufficiently robust to inform the ornithological impact assessment.

No significant access constraints were encountered during the survey programme. All habitats within the Project Site and the surrounding 2 km and 5 km Study Areas were accessible and surveyed as required. Although walkover survey routes varied between years, all key habitats suitable for breeding and non-breeding bird species were adequately covered and survey coverage is considered representative of conditions within the Study Area.

VP surveys provided 99.16% coverage of the 500 m survey area surrounding the proposed turbine locations. Across the three survey years, the target survey effort of 36 hours per season was achieved at all VP locations with the exception of VP6 and VP7 during the breeding season of Year 1, where 33 and 35.5 hours were completed respectively. These minor shortfalls were limited to less than 10% and 2% of the target effort and are not considered sufficient to materially influence the characterisation of flight activity within the Core Study Area.

Breeding raptor surveys undertaken during Year 1 were completed between March and May 2023 and therefore did not extend across the full breeding season. However, breeding raptor surveys undertaken during Years 2 and 3 covered the full breeding survey period. Given the availability of two complete years of breeding raptor survey data, together with supporting VP and breeding bird survey information, this limitation is not considered likely to have affected the identification of breeding raptor activity within the survey area.

Hen harrier roost surveys were undertaken across three non-breeding seasons. On some occasions, surveys commenced less than the recommended 40 minutes prior to sunset, reducing the opportunity to detect any individuals arriving unusually early at potential roost sites. However, surveys continued through the principal roost arrival period, no roosts were identified within the survey area, and this minor departure from guidance is not considered to have materially affected the characterisation of hen harrier use of the site.

Weather conditions have the potential to influence bird detectability during surveys. This was mitigated through surveys being undertaken during suitable weather conditions, with observations paused where conditions deteriorated and resumed when conditions improved. While some surveys were extended due to temporary disturbance events, survey effort remained sufficient to achieve the survey objectives.

Overall, the minor limitations identified relate principally to small shortfalls in VP survey effort at two locations during Year 1, minor variations in hen harrier survey timing and the partial breeding-season coverage of breeding raptor surveys during Year 1. These limitations are not considered to materially

affect the characterisation of baseline ornithological conditions or the identification of ornithological constraints associated with the Project Site, owing to the availability of three years of survey data, the generally high level of survey coverage achieved, and the fact that the identified limitations were either minor in extent or subsequently addressed through additional survey effort in Years 2 and 3. The three-year survey dataset is therefore considered robust and suitable for informing the ornithological impact assessment.

4. RESULTS

4.1. Vantage Point (VP) watches

A total of 37 target species were recorded during VP watches conducted within the Core Study Area across three survey years (September 2022 and September 2025). Flight activity is summarised across six seasonal periods:

- **Year 1:** Non-breeding 2022–23 (Table 27) and breeding 2023 (Table 28)
- **Year 2:** Non-breeding 2023–24 (Table 29) and breeding 2024 (Table 30)
- **Year 3:** Non-breeding 2024–25 (Table 31Table 31) and breeding 2025 (Table 32)

These tables present the raw flight-time seconds recorded for target species during VP watches. Flightline maps are provided in **Appendix 7-7: VP Data for Target Species – Maps and Tables**, where individual movements can be cross-referenced to the accompanying flight-behaviour data.

Across the three years, VP watches recorded a high level of gull activity, especially common gull, black-headed gull, and lesser black-backed gull, reflecting regular commuting between the Project Site and nearby wetlands such as Lough Corrib, Rostaff Turlough and Lough Hacket.

Raptors formed a consistent part of the assemblage, with frequent records of buzzard, kestrel, and peregrine, and occasional winter detections of hen harrier.

Wader species such as golden plover and lapwing showed clear seasonal peaks during winter periods, consistent with wider regional wetland use. Whooper swan and other waterbirds were recorded intermittently, typically as commuting fly-overs or brief feeding movements. There were three records of Greenland white-fronted goose across the three years of survey, with a peak of 17 birds in Year 3, and further records of six and 16 birds respectively in Year 2.

A large proportion of recorded activity occurred below rotor-swept height, with meaningful rotor-height exposure limited to raptors, gulls, and occasionally golden plover and lapwing. These details are presented in **Appendix 7-7: VP Data for Target Species – Maps and Tables** and underpin subsequent collision-risk modelling which is presented in **Appendix 7-2: Collision Risk Modelling Report**.

Table 27. Flight time for target species recorded during VP watches in Year 1 non-breeding season

Species *[17]	No. of birds			Total flight time in seconds
	Individual observations	Min no. of individuals	Max no. of individuals	
Black-headed gull	55	1	150	2,128
Buzzard	8	1	2	290
Common gull	79	1	400	17,933
Cormorant	5	1	1	345
Curlew	2	1	1	155
Great black-backed gull	34	1	48	2,614
Grey heron	6	1	1	143
Greylag goose	3	5	14	200
Gull Sp.	6	1	40	258
Herring gull	9	1	4	467
Kestrel	32	1	2	799
Lapwing	3	1	70	9
Lesser black-backed gull	16	1	20	5,605
Little egret *	1	1	1	80
Mallard	30	1	5	1,050
Merlin *	2	1	1	70
Peregrine *	5	1	2	325
Snipe	12	1	2	137
Sparrowhawk	10	1	2	400
Teal	5	2	45	193
Tufted duck	2	10	22	30
Whooper swan *	4	2	5	14
Wigeon	6	3	35	378
Woodcock	1	1	1	20

Table 28. Flight time for target species recorded during VP watches in Year 1 breeding season

Species	No. of birds			Total flight time in seconds
	Individual observations	Min no. of individuals	Max no. of individuals	
Black-headed gull	19	1	6	675
Buzzard	15	1	3	2,036
Common gull	13	1	110	384
Cormorant	1	1	1	45
Curlew	3	1	10	7
Great black-backed gull	3	1	1	165
Grey heron	6	1	1	88
Gull Sp.	13	2	200	906
Herring gull	1	1	1	35
Kestrel	23	1	1	594
Lesser black-backed gull	120	1	12	6,603
Little egret *	2	1	1	28
Mallard	18	1	5	693
Mute swan	2	2	2	16
Peregrine *	23	1	2	3,593
Sparrowhawk	9	1	1	45

17 Annex I listed species

Species	No. of birds			Total flight time in seconds
	Individual observations	Min no. of individuals	Max no. of individuals	
Swift	7	2	9	214
Whooper swan *	1	8	8	15

Table 29. Flight time for target species recorded during VP watches in Year 2 non-breeding season

Species *[18]	No. of birds			Total flight time in seconds
	Individual observations	Min no. of individuals	Max no. of individuals	
Black-headed gull	92	1	200	4,383
Buzzard	55	1	6	5,688
Common gull	79	1	350	5,103
Cormorant	14	1	2	329
Curlew	2	1	4	13
Gadwall	3	4	10	80
Golden plover *	16	1	180	2,058
Great black-backed gull	37	1	3	1,335
Greenland white-fronted goose	2	6	16	26
Grey heron	15	1	2	470
Greylag goose	10	1	34	578
Gull Sp.	41	3	240	4,068
Herring gull	26	1	25	687
Kestrel	37	1	1	7,268
Lesser black-backed gull	29	1	4	743
Little egret *	2	1	8	100
Mallard	21	1	19	510
Merlin *	4	1	1	45
Mute swan	7	1	4	177
Peregrine *	13	1	1	79
Pheasant	1	1	1	3
Shoveler	1	7	7	4
Snipe	14	1	2	81
Sparrowhawk	8	1	1	290
Teal	3	2	14	4
Tufted duck	2	2	46	10
Whooper swan *	4	1	29	80
Wigeon	5	1	36	20

Table 30. Flight time for target species recorded during VP watches in Year 2 breeding season

Species	No. of birds			Total flight time in seconds
	Individual observations	Min no. of individuals	Max no. of individuals	
Black-headed gull	33	1	28	2,110
Buzzard	40	1	8	3,583
Canada goose	4	1	6	265
Common gull	6	1	5	675
Coot	8	1	55	675
Cormorant	4	1	4	295
Golden plover *	1	85	85	120

18 Annex I listed species

Species	No. of birds			Total flight time in seconds
	Individual observations	Min no. of individuals	Max no. of individuals	
Great black-backed gull	2	1	3	210
Grey heron	8	1	1	121
Herring gull	10	1	6	425
Kestrel	25	1	2	2,675
Lapwing	1	1	1	10
Lesser black-backed gull	113	1	36	6,103
Little egret *	10	1	12	132
Mallard	2	2	3	75
Peregrine *	12	1	1	100
Sparrowhawk	5	1	1	165

Table 31. Flight time for target species recorded during VP watches in Year 3 non-breeding season

Species *[19]	No. of birds			Total flight time in seconds
	Individual observations	Min no. of individuals	Max no. of individuals	
Black-headed gull	166	1	120	14,380
Buzzard	90	1	5	7,465
Common gull	361	1	400	29,196
Cormorant	3	1	2	330
Curlew	3	1	18	90
Dunlin *	1	2	2	20
Gadwall	1	3	3	30
Golden plover *	26	1	95	1,850
Great black-backed gull	13	1	2	1,135
Great egret	1	1	1	90
Greenland white-fronted goose	1	17	17	200
Grey heron	6	1	1	365
Greylag goose	17	1	23	1,185
Hen harrier *	7	1	1	464
Herring gull	12	1	3	998
Kestrel	7	1	2	4,326
Lapwing	5	1	200	490
Lesser black-backed gull	150	1	46	13,370
Little egret *	4	1	2	70
Mallard	10	1	5	500
Merlin *	3	1	1	28
Mute swan	2	4	7	160
Peregrine *	7	1	1	445
Snipe	32	1	23	1,470
Sparrowhawk	21	1	1	596
Teal	2	4	5	50
Whooper swan *	10	1	20	580
Woodcock	1	1	1	15

19 Annex I listed species

Table 32. Flight time for target species recorded during VP watches in Year 3 breeding season

Species *[20]	No. of birds			Total flight time in seconds
	Individual observations	Min no. of individuals	Max no. of individuals	
Black-headed gull	16	1	18	795
Buzzard	19	1	2	1,057
Common gull	13	1	31	908
Golden plover *	1	1	1	40
Grey heron	2	1	1	40
Herring gull	1	1	1	35
Kestrel	10	1	1	1,224
Lapwing	3	2	2	155
Lesser black-backed gull	36	1	5	1,897
Little egret *	2	1	1	30
Mallard	1	2	2	10
Peregrine *	2	1	1	65
Teal	1	4	4	20

4.2. Breeding bird surveys

4.2.1. Breeding bird survey results

A total of 76 bird species were recorded during breeding bird surveys conducted within the core survey area. Bird activity is summarised across three breeding season periods:

- Year 1: April–July 2023
- Year 2: April–July 2024
- Year 3: April–July 2025

These comprised 11 Red-listed and 20 Amber-listed species. In Year 1, five Red-listed and 14 Amber-listed species were recorded; in Year 2, eight Red-listed and 18 Amber-listed species were observed; and in Year 3, seven Red-listed and 16 Amber-listed species were recorded. These results are summarised in Table 33, Table 34 and Table 35, with any Annex I Green-listed also included in the tables. Mapped distributions for each year are presented in Figure 8, Figure 9, Figure 10, Figure 12, Figure 13, Figure 14, Figure 16 and Figure 17. Full raw observations are provided in **Appendix 7-8: Survey results**.

While there were some inter-annual differences in species presence, overall population distribution and species ranges remained broadly consistent across all three survey years. The breeding assemblage was consistently dominated by farmland and scrub-associated species, including meadow pipit, skylark (*Alauda arvensis*), linnet (*Linaria cannabina)*, willow warbler (*Phylloscopus trochilus*), wheatear (Oenanthe oenanthe), and house martin (*Delichon urbicum*), many of which showed regular evidence of possible or probable breeding. Swift bred at Kinlough Castle and frequently foraged over the Project Site. Snipe were recorded displaying intermittently along wet grassland margins, although evidence of confirmed breeding remained limited.

Only a single confirmed breeding record of lapwing was recorded (in 2023), and breeding waders were generally scarce throughout the survey period. Minor inter-annual variation is considered to reflect

20 Annex I listed species

typical seasonal and weather-driven fluctuations, rather than any substantive changes in habitat availability.

Table 38 provides a summary of breeding status for Red- and Amber-listed species, as well as any Green-listed Annex I species, recorded within the Project Site during breeding bird surveys, dusk surveys and any incidental observations made throughout the survey period. All incidental records are presented in Section 4.7.

Table 33. Summary of breeding bird survey observations during Year 1 breeding season

Species *[21]	BTO code	No. Individuals				Sum of individuals	Number of observations
		April	May	June	July		
BoCCI (2020-2026) Red-listed species							
Kestrel	K.	-	1	-	-	1	1
Meadow pipit	MP	2	14	-	13	29	14
Snipe	SN	4	-	3	-	7	5
Swift	SI	-	11	16	-	27	6
Yellowhammer	Y.	-	1	-	-	1	1
BoCCI (2020-2026) Amber-listed species							
Black-headed gull	BH	-	-	5	2	7	5
Goldcrest	GC	2	8	3	-	13	7
Greenfinch	GR	1	2	-	-	3	2
House martin	HM	-	-	4	-	4	1
House sparrow	HS	-	4	-	-	4	1
Lesser black-backed gull	LB	12	11	15	-	38	21
Linnet	LI	-	4	-	4	8	3
Mallard	MA	-	7	-	-	7	5
Sand martin	SM	-	3	4	-	7	2
Skylark	S.	4	4	6	6	20	17
Starling	SG	5	20	12	5	42	8
Swallow	SL	-	43	18	13	74	27
Wheatear	W.	4	1	-	2	7	5
Willow warbler	WW	6	55	16	4	81	62
BoCCI (2020-2026) Green-listed species							
Peregrine *	PE	-	2	2	-	4	3

Table 34. Summary of breeding bird survey observations during Year 2 breeding season

Species *[22]	BTO code	No. Individuals				Sum of individuals	Number of observations
		April	May	June	July		
BoCCI (2020-2026) Red-listed species							
Curlew	CU	2	3	-	-	5	5
Golden plover *	GP	180	-	-	-	180	3
Grey wagtail	GL	1	-	-	-	1	1
Kestrel	K.	3	8	1	1	13	13
Long-tailed duck	LN	2	-	-	-	2	1
Meadow pipit	MP	21	15	31	25	92	48
Redwing	RE	2	-	-	-	2	1

21 Annex I listed species

22 Annex I listed species

Species *[22]	BTO code	No. Individuals				Sum of individuals	Number of observations
		April	May	June	July		
Snipe	SN	20	1	-	-	21	18
Swift	SI	-	25	1	-	26	4
BoCCI (2020-2026) Amber-listed species							
Black-headed gull	BH	8	3	1	-	12	6
Common gull	CM	8	2	-	-	10	4
Cormorant	CA	3	-	-	-	3	3
Goldcrest	GC	21	4	13	20	58	45
Greenfinch	GR	1	1	-	-	2	2
Herring gull	HG	-	17	-	-	17	5
House martin	HM	-	2	-	3	5	3
House sparrow	HS	2	-	5	2	9	3
Lesser black-backed gull	LB	47	33	12	4	96	32
Linnet	LI	73	43	36	14	166	46
Mallard	MA	6	6	9	4	25	7
Ringed plover	RP	-	1	-	-	1	1
Sand martin	SM	-	-	2	-	2	1
Skylark	S.	18	10	9	10	47	32
Starling	SG	5	38	40	-	83	9
Swallow	SL	29	127	61	173	390	42
Wheatear	W.	2	-	1	-	3	2
Willow warbler	WW	77	13	22	11	123	108
BoCCI (2020-2026) Green-listed species							
Little egret *	ET	2	2	-	3	7	4
Peregrine *	PE	8	6	3	-	17	15

Table 35. Summary of breeding bird survey observations during Year 3 breeding season

Species *[23]	BTO code	No. Individuals				Sum of individuals	Number of observations
		April	May	June	July		
Red-listed species (BoCCI 2020-2026)							
Golden plover *	GP	1	-	-	-	1	1
Grey wagtail	GL	1	-	-	1	2	2
Kestrel	K.	1	-	-	1	2	3
Lapwing	L.	6	-	-	-	6	3
Meadow pipit	MP	24	7	3	70	104	52
Snipe	SN	13	-	-	-	13	9
Swift	SI	-	5	4	11	20	5
Amber-listed species (BoCCI 2020-2026)							
Black-headed gull	BH	21	-	-	-	21	5
Common gull	CM	30	-	-	-	30	3
Goldcrest	GC	12	6	2	21	41	31
House martin	HM		-	-	4	4	3
House sparrow	HS	5	-	-	16	21	3
Lesser black-backed gull	LB	7	5	4	12	28	12
Linnet	LI	122	-	14	114	250	58
Mallard	MA	3	-	1	-	4	3

23 Annex I listed species

Species *[23]	BTO code	No. Individuals				Sum of individuals	Number of observations
		April	May	June	July		
Sand martin	SM	-	-	1	4	5	3
Skylark	S.	6	7		9	22	19
Spotted flycatcher	SF	-	-	-	3	3	1
Starling	SG	6	8	-	111	125	29
Swallow	SL	8	14	30	179	231	32
Teal	T.	65	-	-	-	65	2
Wheatear	W.	3	1	-	10	14	9
Willow warbler	WW	82	19	3	63	167	132

4.2.2. Dusk survey results

Dusk surveys conducted within the Core Study Area recorded barn owl, long-eared owl, and snipe during 2023, with snipe also recorded in 2024. No formal dusk surveys were undertaken during the 2025 breeding season. Several breeding-bird survey visits extended into the early evening; however, these were not conducted under dusk-survey protocols. As such, dusk detectability for crepuscular/nocturnal species in 2025 is not directly comparable with 2023–2024 data. Bird activity is summarised across three breeding season periods:

- 2023 dusk surveys: March–September
- 2024 dusk surveys: March–August
- 2025: no formal dusk surveys (incidental crepuscular data only)

Summary results for these years are shown in Table 36 and Table 37, with mapped distributions for each year presented in Figure 11 and Figure 15. Full data are provided in **Appendix 7-8: Survey results**.

Activity during dusk surveys was focused primarily within woodland and scrub habitats in the northern part of the Site, where barn owl and long-eared owl were recorded. Snipe activity occurred along bog margins and in wet grassland fields, consistent across both years with targeted survey effort. No comparable dataset exists for 2025 due to the absence of formal dusk surveys.

Table 36 and Table 37 present the dusk survey results for Year 1 and Year 2, respectively.

Table 36. Summary of dusk survey observations during Year 1 breeding season

Species	BTO code	No. Individuals					Sum of individuals	Number of observations
		Mar	Apr	June	July	Aug		
BoCCI (2020-2026) Red-listed species								
Barn owl	BO	1	1	-	-	1	3	3
Snipe	SN	3	2	2	-	-	7	3
BoCCI (2020-2026) Green-listed species								
Long-eared owl	LE	-	-	2	2	1	5	5

Table 37. Summary of dusk survey observations during Year 2 breeding season

Species	BTO code	No. Individuals			Sum of individuals	Number of observations
		April	June	Aug		
BoCCI (2020-2026) Red-listed species						
Snipe	SN	1	1	3	5	4

Table 38. Summary of breeding status for Red, Amber and Annex I Green-listed species recorded during breeding bird and dusk surveys in Year 1, Year 2 and Year 3.

Species *24	2023 Breeding status	2024 Breeding status	2025 Breeding status
BoCCI (2020-2026) Red-listed species			
Barn owl	The species is not considered to be breeding within the Project Site. Up to three individuals were recorded during breeding bird surveys; however, two of these were only heard at distance, and their exact locations could not be confirmed as being within the Project Site. The third individual was observed briefly as it flew over a field in the southeast, outside the Project Site.	Species was not recorded during either the breeding bird surveys or the dusk surveys.	Species was not recorded during either the breeding bird surveys or the dusk surveys.
Curlew	The species is not considered to be breeding within the Project Site, as no breeding behaviour was recorded during surveys. An incidental observation of a flock of eight individuals was made during a dusk survey in late August at Rostaff Turlough, outside of the Project Site.	No breeding behaviour was recorded within the Project Site, and suitable nesting habitat is limited. Two adults were heard calling in late April in the centre of the core study area. A further two individuals were recorded calling in the southeast, outside the core study area, in May, and another adult was observed in the northwest of the core study area in late May. All observations occurred during the spring passage period (April–May), and these individuals are therefore considered likely to have been migrating birds.	Species was not recorded during either the breeding bird surveys or the dusk surveys.
Golden plover	Species was not recorded during either the breeding bird surveys or the dusk surveys.	Species was not recorded during either the breeding bird surveys or the dusk surveys.	A single full breeding plumage individual was observed in early May, in the north-west of the Project Site, during a breeding bird survey. The bird was seen displaying, although the absence of further records suggest that this was a late migrant.

[24] Annex I listed species

Species *24	2023 Breeding status	2024 Breeding status	2025 Breeding status
Grey wagtail	Species was not recorded during either the breeding bird surveys or the dusk surveys	One individual was recorded calling in April in the southeast of the Core Study Area. No breeding behaviour was recorded, and this observation is likely to relate to a spring passage bird.	Single individuals were heard or seen in the eastern section of the Core Study Area during breeding bird surveys in early April and early July. No breeding behaviour was recorded, and these observations are likely to relate to passage birds.
Kestrel	The species was not considered to be breeding within the Project Site. It was observed hunting on one occasion in the north of the Project Site in mid-May during the breeding bird surveys. A further incidental record during a dusk survey involved one individual hovering over rough grassland in early June.	Possible breeding was recorded within the Project Site, based on early-season observations of breeding behaviour and frequent use of the northern Project Site for foraging. The species was recorded 13 times during the breeding bird surveys; however, no nest was located, and there were no signs of fledglings. Probable breeding was noted in the wider area outside of the Project Site.	Single individuals were recorded in April and twice in July during breeding bird surveys. No breeding behaviour was observed.
Meadow pipit	Probable breeding was recorded within the Project Site, with many pairs distributed throughout. Breeding territories were likely associated with boglands in the southwest and agricultural lands in the centre and northwest of the Project Site. The species was recorded on 14 occasions during the breeding bird surveys, with a maximum count of six individuals.	Probable breeding was recorded within the Project Site, based on multiple observations of breeding behaviour throughout the season. The species was mainly associated with boglands in the southwest and agricultural lands in the centre and northwest of the Project Site. It was recorded on 43 occasions during the breeding bird surveys, with a maximum count of 12 individuals.	Probable breeding was recorded within the Project Site, based on multiple observations of singing and display behaviour between April and July. Mainly associated with boglands in the southwest and agricultural lands in the centre and northwest of the Project Site. The species was recorded on 37 occasions during the breeding bird surveys, mainly 1-4 individuals although a peak count of 25 individuals occurred in late July.
Redwing	Species was not recorded during either the breeding bird surveys or the dusk surveys	No breeding behaviour was recorded. A single individual was observed during the breeding bird surveys in late April in the northwest of the core study area.	Species was not recorded during either the breeding bird surveys or the dusk surveys
Snipe	No confirmed breeding activity was recorded within the core study area; however, the regular presence of up to two	No confirmed breeding activity was recorded within the core study area; however, the regular presence of up to two individuals in	Up to five birds seen during breeding bird surveys in early April. No further records of the species were made

Species *24	2023 Breeding status	2024 Breeding status	2025 Breeding status
	individuals in suitable habitat during the breeding bird surveys in April and June suggests possible breeding. Three observations were made in April in grassland habitats in the northeast of the core study area, and two observations were recorded in June in a bogland in the southeast. Possible breeding is considered within the core study area. The species is primarily associated with bracken, scrub, and wet grassland habitats present both within and around the Project Site.	suitable habitat during the breeding bird surveys in April and June suggests possible breeding. Breeding behaviour was recorded at Rostaff Turlough, outside the Project Site, and within the core study area in bogland habitats in the southeast and grassland habitats in the northeast.	during the season, suggesting that no breeding occurred.
Swift	Confirmed breeding was recorded within the Kinlough Castle. Four individuals were seen entering nest locations in early May at Kinlough Castle. A further 23 individuals were recorded hunting within the Project Site across two dates in May and two dates in June.	No confirmed breeding was recorded during the surveys within the Project Site ; however, flocks of up to 15 individuals feeding near a known breeding site at Kinlough Castle suggest possible breeding.	Up to eight birds seen feeding within the core study area on five occasions between May and late July. No breeding evidence was recorded.
Yellowhammer	One individual was recorded in May in the southeast, outside the core study area. No breeding behaviour was observed, and nesting habitat within the Project Site is limited.	Species was not recorded during either the breeding bird surveys or the dusk surveys	Species was not recorded during either the breeding bird surveys or the dusk surveys
BoCCI (2020-2026) Amber-listed species			
Black-headed gull	No confirmed breeding activity was recorded within the core study area. Five observations of 1–2 individuals were made in June and July in the centre and southeast of the core study area.	No confirmed breeding activity was recorded within the core study area. Six observations of up to four individuals were made in April, May, and June in the centre and northeast of the core study area.	No confirmed breeding activity was recorded within the core study area. Five observations of up to 12 individuals were made in April in the northeast of the core study area.
Common gull	Species was not recorded during either the breeding bird surveys or the dusk surveys	No breeding behaviour was recorded during the breeding bird or dusk surveys. Common Gull was recorded on four occasions in late April and once in late May, with up to six	No breeding behaviour was recorded during the breeding bird or dusk surveys. Common Gull was recorded on three occasions in early April, with a peak count of 25 to six individuals

Species *24	2023 Breeding status	2024 Breeding status	2025 Breeding status
		individuals observed in the centre and northeast of the core study area.	observed in the centre and northeast of the core study area.
Cormorant	Species was not recorded during either the breeding bird surveys or the dusk surveys	No breeding behaviour was recorded during the breeding bird or dusk surveys. Single individuals were recorded on three occasions in late April in the southwestern sector, outside the core study area.	Species was not recorded during either the breeding bird surveys or the dusk surveys
Coot	Confirmed breeding within the Project Site, based on an incidental record of two adults and three juveniles observed on a small lough during a dusk survey. A further incidental observation recorded this species calling from a small pond outside the core study area in the northwest, which may also provide suitable breeding habitat.	Species was not recorded during either the breeding bird surveys or the dusk surveys.	Species was not recorded during either the breeding bird surveys or the dusk surveys
Goldcrest	Confirmed breeding was recorded within the Project Site, with fledglings observed alongside adults during the breeding bird surveys in early June. The species is primarily associated with hedgerows and scrub woodland habitats within the Project Site. Other records of 1–3 individuals were made on six occasions between April and May.	Confirmed breeding was recorded within the Project Site, with fledglings observed alongside adults during the breeding bird surveys in early June. The species is primarily associated with hedgerows and scrub woodland habitats within the Project Site. Records of 1–3 individuals were made on 57 occasions between April and July.	Probable breeding was recorded within the Project Site, with display behaviour observed during the breeding bird surveys between April and July. The species is primarily associated with hedgerow and scrub woodland habitats within the Project Site. Records mostly comprised 1–3 individuals, although a peak of six in late July may have represented a family group.
Greenfinch	Probable breeding within the Project Site, pair observed exhibiting courtship in May within the Southern sector of the core study area, and another induvial was recorded singing in April in the West of the core study area. Species is associated mainly with hedgerow habitat within the Project Site.	No breeding behaviour recorded during breeding bird and dusk surveys. This species was recorded in the two occasions in the beginning of April and late May in the northwestern sector just outside the core study area.	Species was not recorded during either the breeding bird surveys or the dusk surveys.

Species *24	2023 Breeding status	2024 Breeding status	2025 Breeding status
Herring gull	Species was not recorded during either the breeding bird surveys or the dusk surveys	No breeding behaviour was recorded during the breeding bird or dusk surveys. The species was recorded on two dates in May in the northwestern sector of the core study area, with a maximum of 10 birds observed flying and landing, presumably actively foraging.	Species was not recorded during either the breeding bird surveys or the dusk surveys
House martin	Possible breeding was recorded within the Project Site, with a family group observed feeding over a small pond in the southwest section of the Site during early June. Suitable nesting habitat is limited to a small number of buildings within the Project Site.	Probable breeding was recorded within the Project Site, based on observations of two individuals displaying courtship behaviour in May. One or two individuals were also observed on two occasions in July.	Breeding bird surveys in late July recorded four individuals and two active nests at a farm complex on the southern edge of the Core Study Area, confirming breeding within the Project Site.
House sparrow	Probable breeding was recorded within the Project Site, with a family group, including adults and juveniles, observed calling along a hedgerow in the southwest section of the Project Site in mid-May.	No breeding behaviour was recorded within the Project Site during the breeding bird or dusk surveys. Two individuals were recorded in June, and five individuals were recorded in July, heard and seen, in the northwest and southwest, just outside the core study area.	No breeding behaviour was recorded within the Project Site during the breeding bird or dusk surveys. Up to 12 individuals were recorded with observations in April and two in July in the southeast of the core study area.
Lesser black-backed gull	No breeding activity was observed within the Project Site; however, one adult with a juvenile was observed flying across the Site in early June, with the juvenile likely bred elsewhere. The species was recorded on 21 occasions, involving 1–4 individuals, mostly flying through or feeding within the core study area.	No breeding behaviour was recorded within the Project Site during the breeding bird or dusk surveys. The species was recorded on 32 occasions, involving 1–14 individuals, mostly flying through the Site or foraging as transient visitors.	No breeding behaviour was recorded within the Project Site during the breeding bird or dusk surveys. The species was recorded on 12 occasions, involving 1–5 individuals, mostly flying through the Site or foraging as transient visitors.
Linnet	Confirmed breeding was recorded within the Project Site, with two observations of pairs flying together in early May and provisioning of a juvenile recorded in mid-July on limestone pavement habitat in the southwest of the Project Site.	Probable breeding was recorded within the Project Site, with eight observations of breeding behaviour, including individuals singing and displaying. Several small flocks were observed, with up to 35 individuals in April and 20 on single occasions in May and June. Otherwise, up to six individuals were seen.	Probable breeding was recorded within the Project Site, with ten observations of breeding behaviour, including individuals singing and displaying. Several small flocks were observed, with up to 23 individuals in April and between 12-20 on several occasions in July.

Species *24	2023 Breeding status	2024 Breeding status	2025 Breeding status
Mallard	No breeding behaviour was recorded within the Project Site during the breeding bird surveys. Juveniles observed with adults at Rostaff Turlough confirm breeding in the wider area. Suitable breeding habitat within the Project Site is limited, with only 1–2 individuals recorded on two dates in May.	Confirmed breeding was recorded within the Project Site, with one observation of incubation in May in wetland habitat in the northwest of the Project Site. Up to nine individuals were recorded on six further occasions between April and July.	No breeding behaviour was recorded within the Project Site during the breeding bird surveys. One or two individuals were recorded on three occasions in April and June.
Ringed plover	Species was not recorded during either the breeding bird surveys or the dusk surveys	An individual was observed in May 2024 during a breeding bird survey but was considered to be on passage and no breeding behaviour was observed.	Species was not recorded during either the breeding bird surveys or the dusk surveys
Sand martin	Breeding within the Project Site is considered possible, though unlikely, due to the limited availability of suitable nesting habitat. Observations of family groups feeding within the Project Site in May and June suggest that breeding is occurring in the wider landscape, potentially along the banks of the Black River, approximately 500 m south of the records.	An individual was observed in June 2024 during a breeding bird survey but was considered to be on passage and no breeding behaviour was observed.	One to three individuals seen on three occasions between late June and late July during breeding bird surveys, with possible breeding suspected, but not proven, in the quarry to the northeast.
Skylark	Breeding was considered probable within the core study area, based on multiple observations of adults singing and displaying. Between April and July, 1–2 individuals were recorded on 17 occasions, primarily associated with farmland and limestone pavement habitats within the Project Site.	Probable breeding occurs within the Project Site, based on multiple observations of adults displaying breeding behaviours in April, June and July within the northeast and southern sections of the core study area.	Probable breeding occurs within the Project Site, based on multiple observations of adults displaying breeding behaviours in April, May and July within the northeast and southern sections of the core study area.
Starling	Breeding was considered probable within the Project Site, based on observations of display and singing. Up to nine individuals were recorded on eight occasions between April and July.	Breeding was considered probable within the core study area, based on two individuals alarm calling in April. Seven further observations of up to 40 individuals were recorded between April and late June, mostly associated with hedgerow and farmland	No breeding evidence was recorded, with up to eight individuals observed in April and May, and larger groups of up to 50 in July as birds breeding in the wider area began to disperse and

Species *24	2023 Breeding status	2024 Breeding status	2025 Breeding status
		habitats in the southwest and southeast of the core study area.	exploit foraging opportunities within the Project Site.
Swallow	Up to five individuals were recorded on 27 occasions between May and July, with birds often feeding around the old quarry in the south and in the east of the core study area. No confirmed breeding behaviour was observed, although an apparent family group was seen feeding together in mid-July.	Confirmed breeding was recorded within the Project Site, based on multiple observations of breeding behaviour and the confirmation of a nest in a barn in the northeast section of the Project Site. Observations were regular between April and July, with a peak count of 40 individuals in early July.	Up to four birds were present during April and May, with confirmed breeding in a shed (-9.1565522, 53.48921) in the southeast of the core study area. Numbers increased during June and July as feeding opportunities attracted birds from the wider area, peaking at 55 individuals in early July.
Wheatear	Confirmed breeding was recorded within the Project Site, based on observations of a pair exhibiting breeding behaviour in April and May, followed by records of adults provisioning fledglings in July in the southwest of the core study area.	Possible breeding was recorded within the Project Site, based on a single observation of a juvenile perched in the northeast of the core study area in late June.	Confirmed breeding was recorded within the Project Site, based on observations of a male visiting a probable nest site during early May, and recently fledged young seen in late July. (-9.164418, 53.492215), in the southeast within the core study area
Willow warbler	Probable breeding was recorded within the Project Site, based on multiple observations of adults singing, followed by the presence of pairs displaying between April and June in hedgerow and scrub habitats in the west and centre of the core study area.	Probable breeding was recorded within the Project Site, based on multiple observations of adults singing, mainly between April and early July, and associated with hedgerow and scrub habitats within the core study area.	Probable breeding was recorded within the Project Site, based on multiple observations of adults singing, mainly between April and early July, and associated with hedgerow and scrub habitats within the core study area.
BoCCI (2020-2026) Green-listed species			
Peregrine*	A confirmed pair was breeding within the Breeding Raptor Survey Area, with a known nest at Kinlough Castle and regular observations of the pair, including territorial behaviour, between late March and late July, during breeding bird surveys.	Probable breeding within the Breeding Raptor Survey Area, based on observations of male and female associating with known breeding site at Kinlough Castle during April to mid-July.	No breeding evidence was recorded, with only three observations of single individuals—two in April and one in late June.

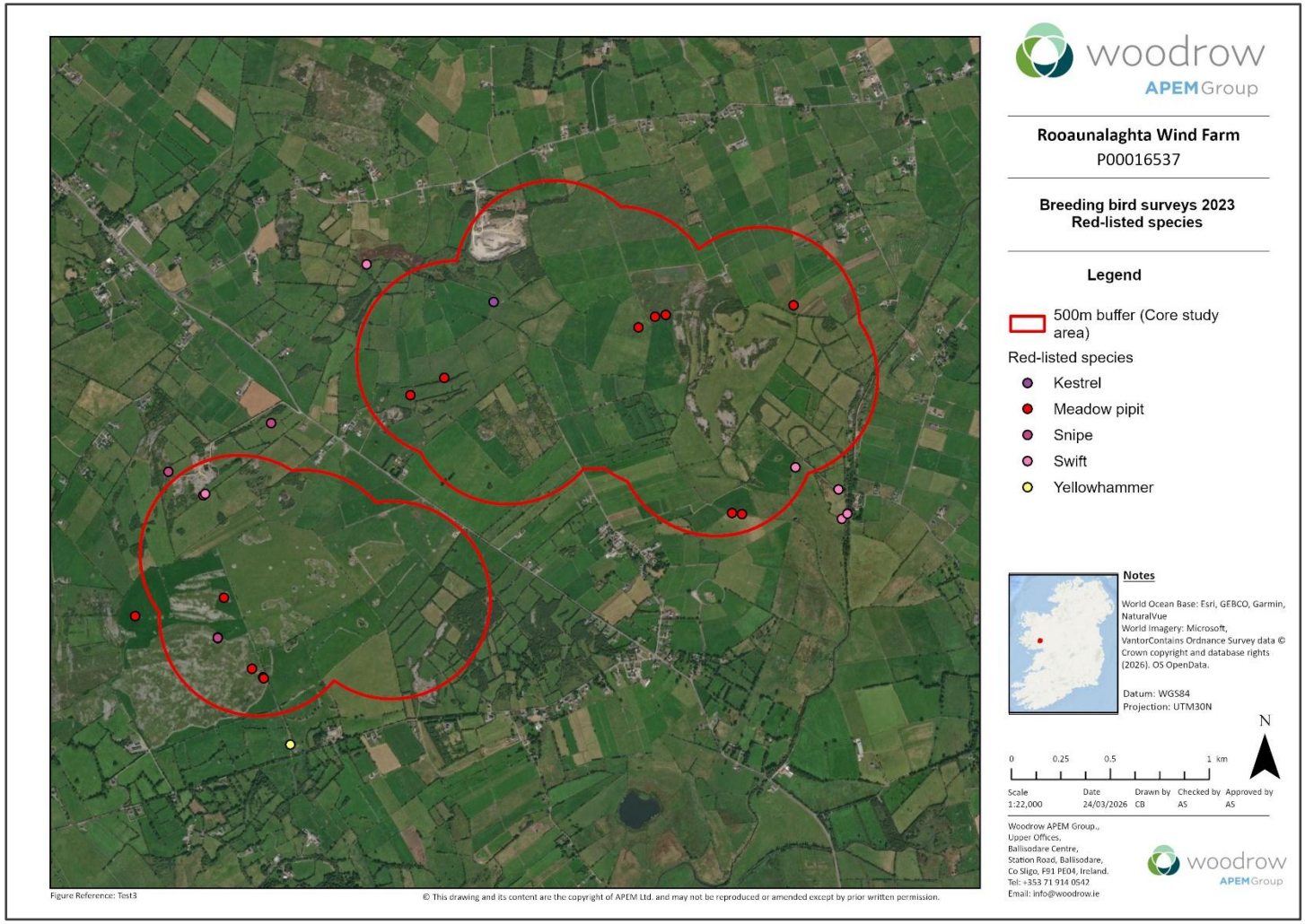


Figure 8. Red-listed species recorded during breeding bird surveys in Year 1

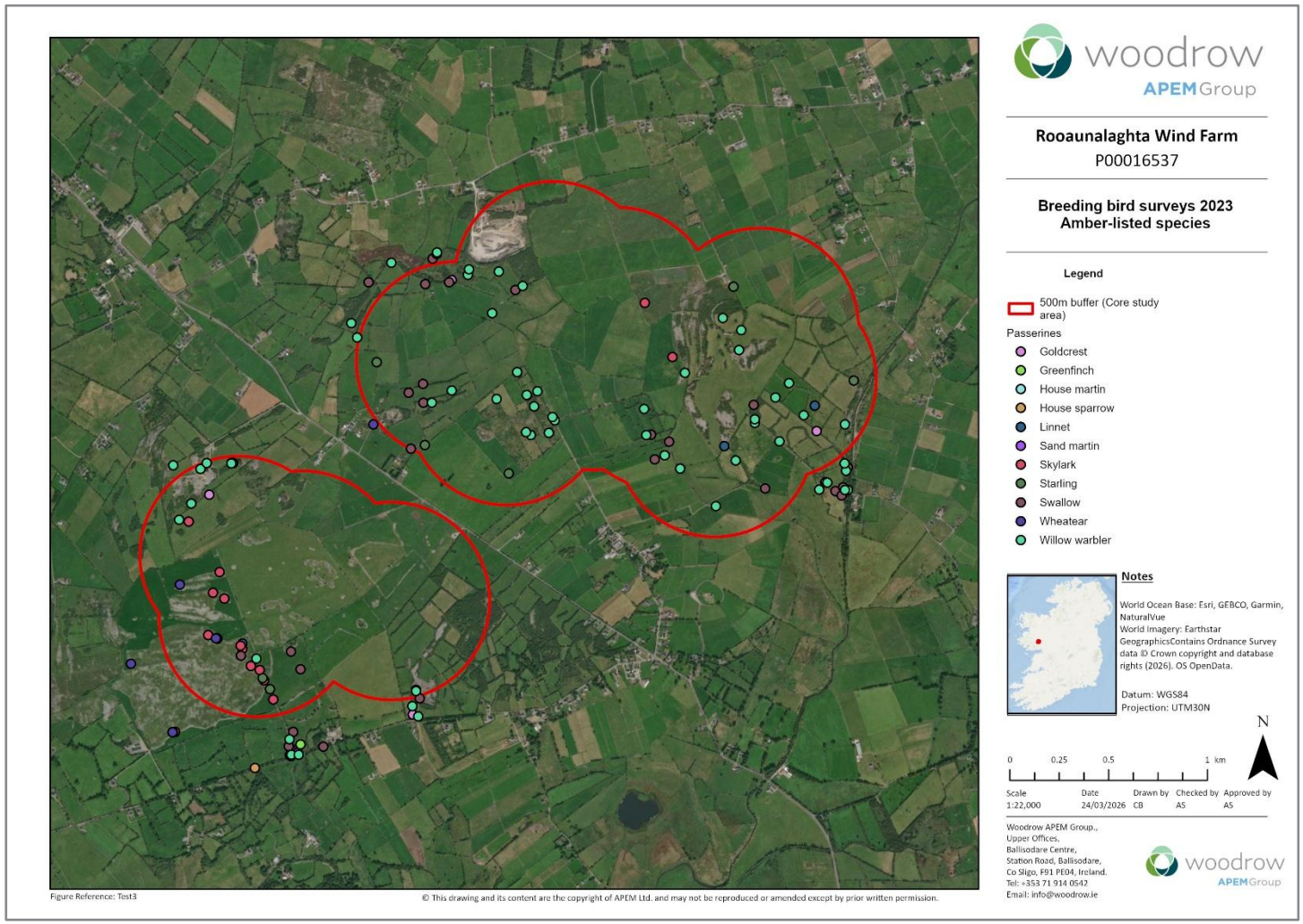


Figure 9. Amber-listed passerine species recorded during breeding bird surveys in Year 1

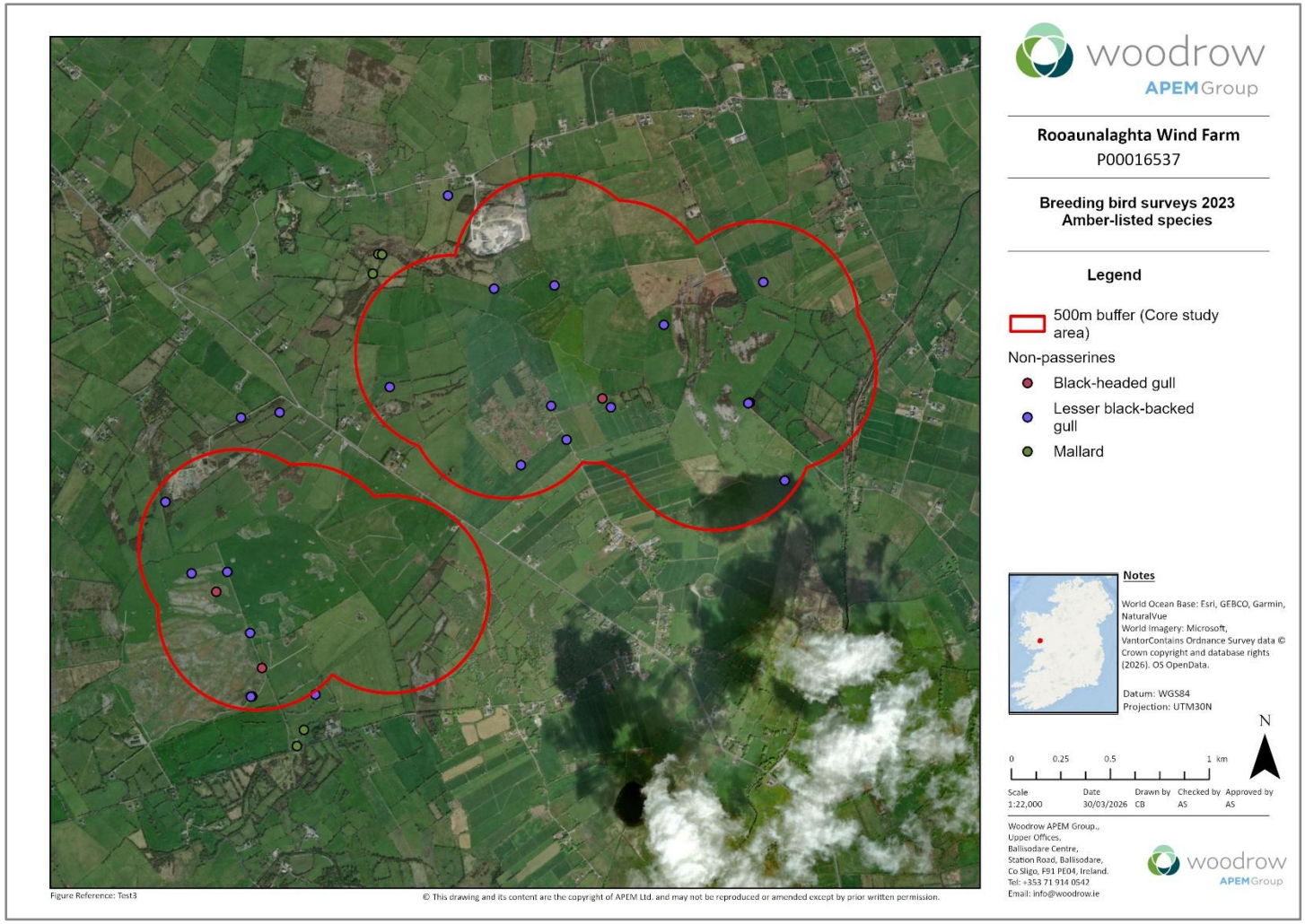


Figure 10. Amber-listed non-passerine species recorded during breeding bird surveys in Year 1

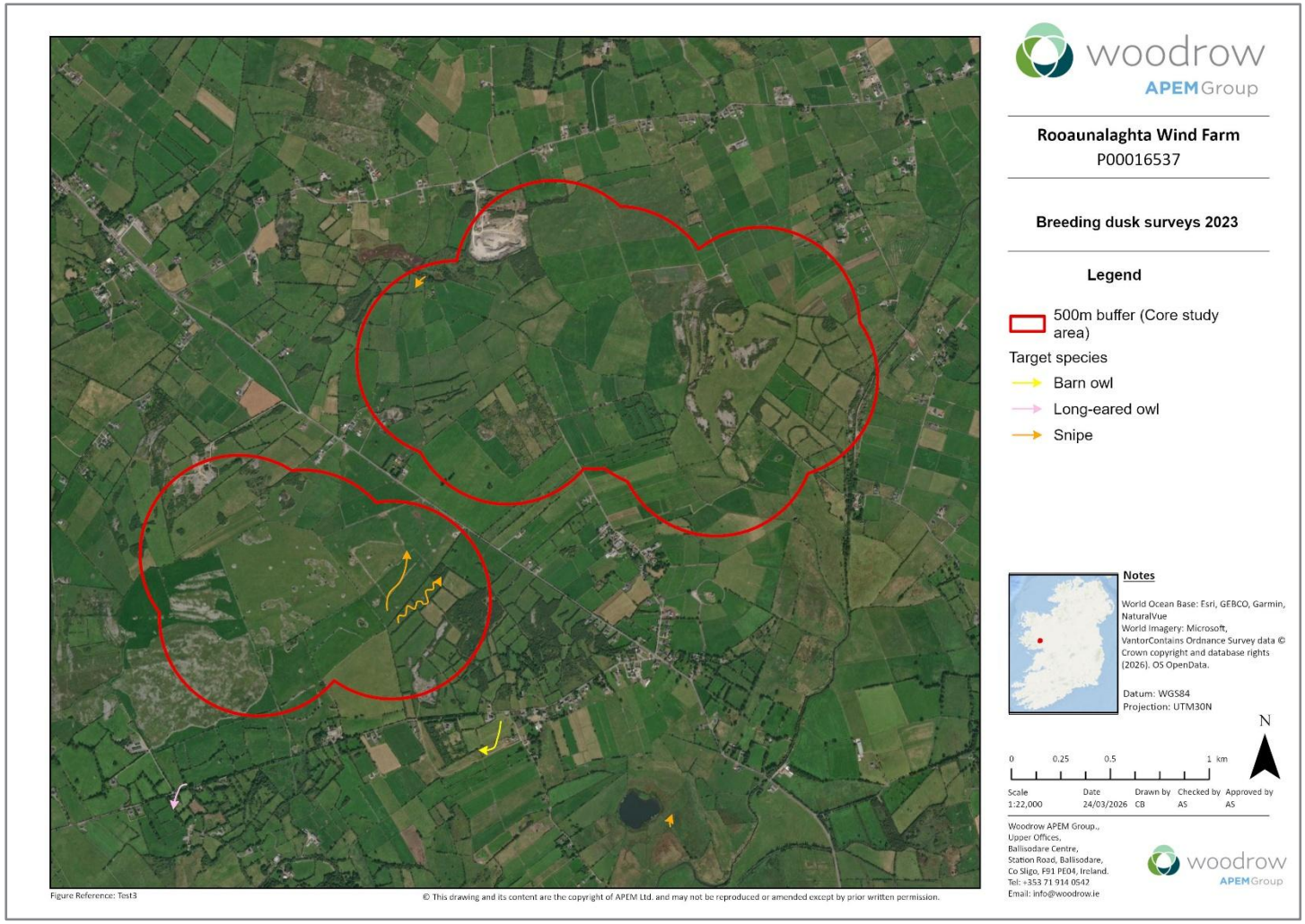


Figure 11. Target species recorded during dusk surveys in Year 1

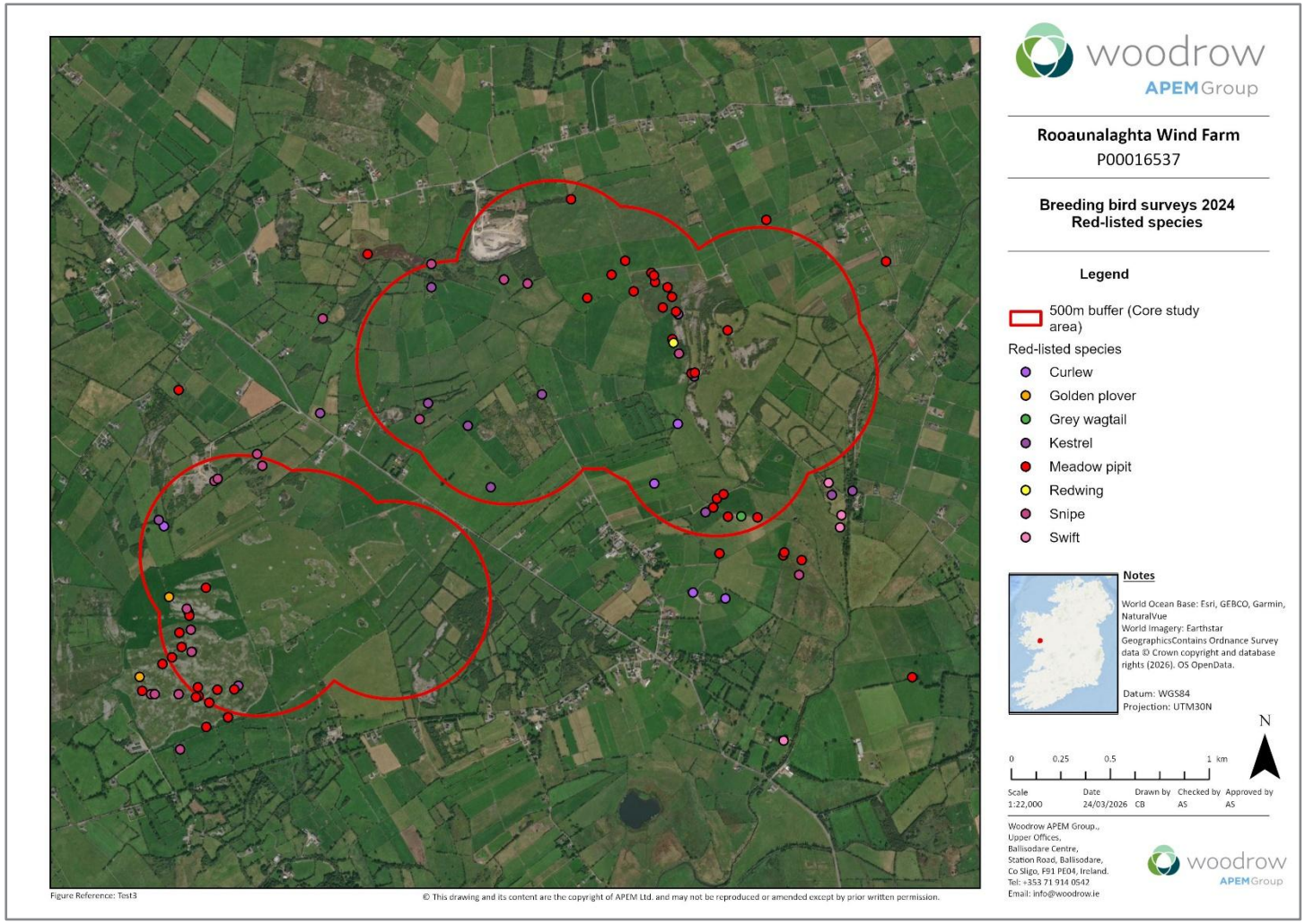


Figure 12. Red-listed species recorded during breeding bird surveys in Year 2

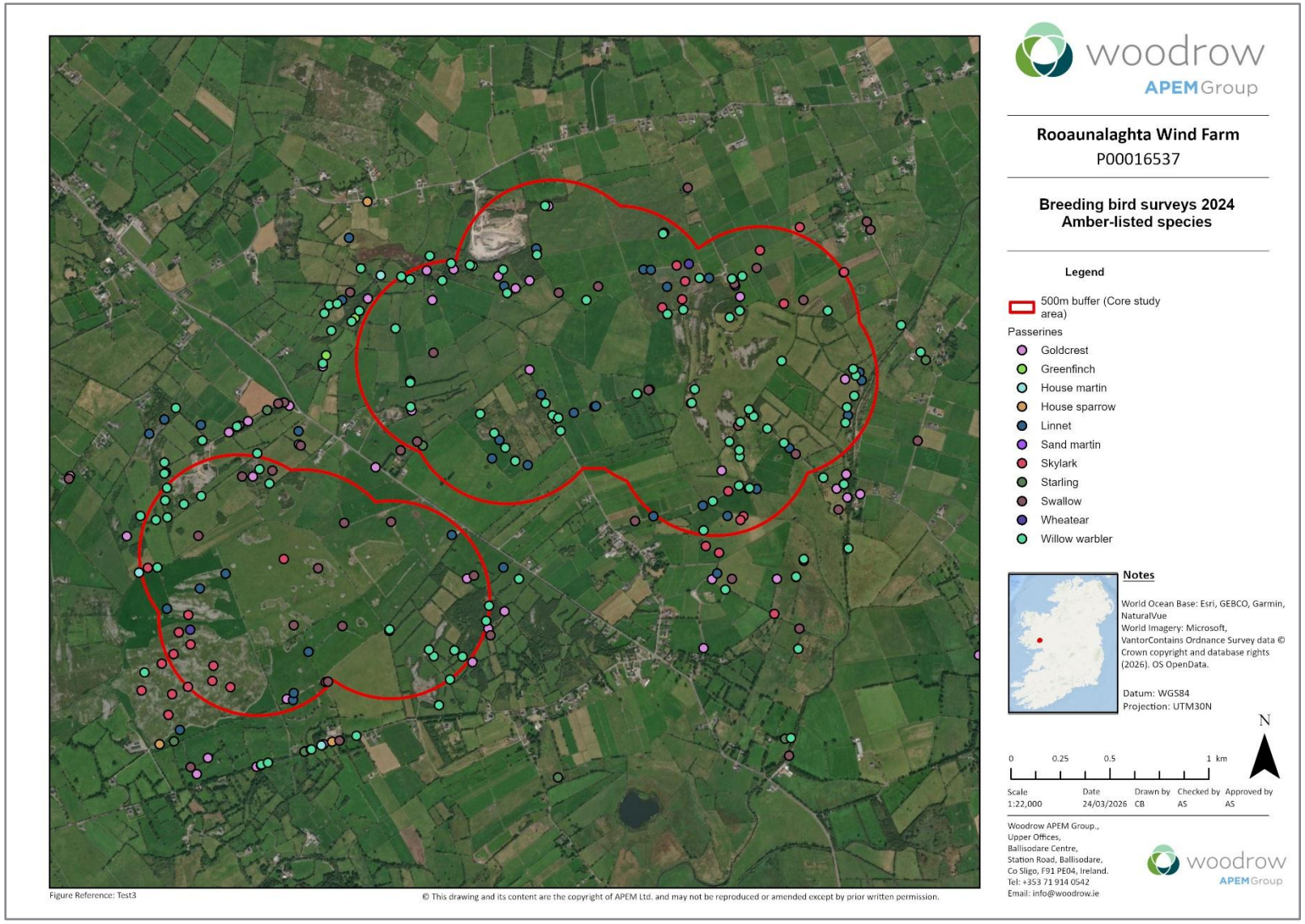


Figure 13. Amber-listed passerine species recorded during breeding bird surveys in Year 2

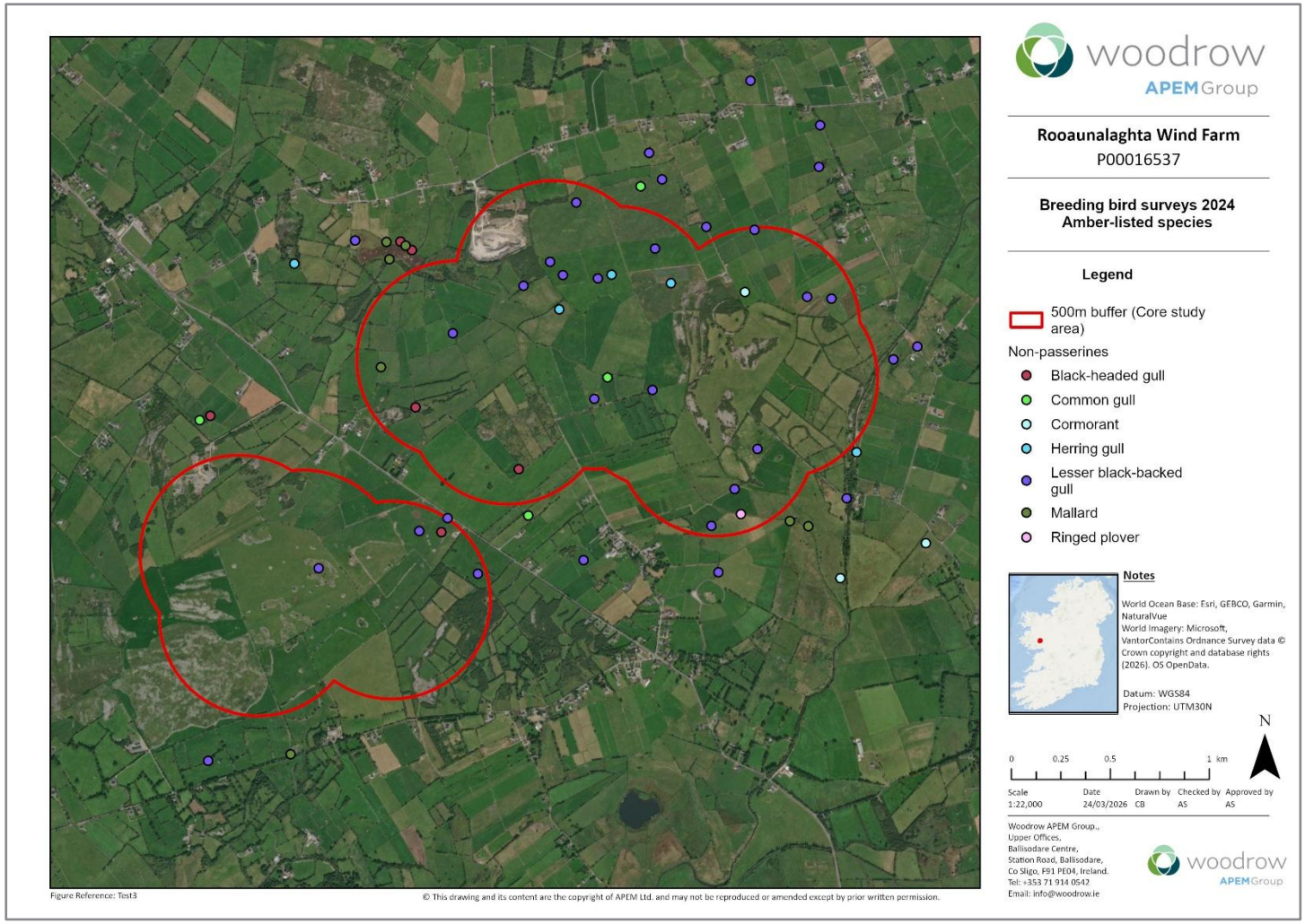


Figure 14. Amber-listed non-passerine species recorded during breeding bird surveys in Year 2

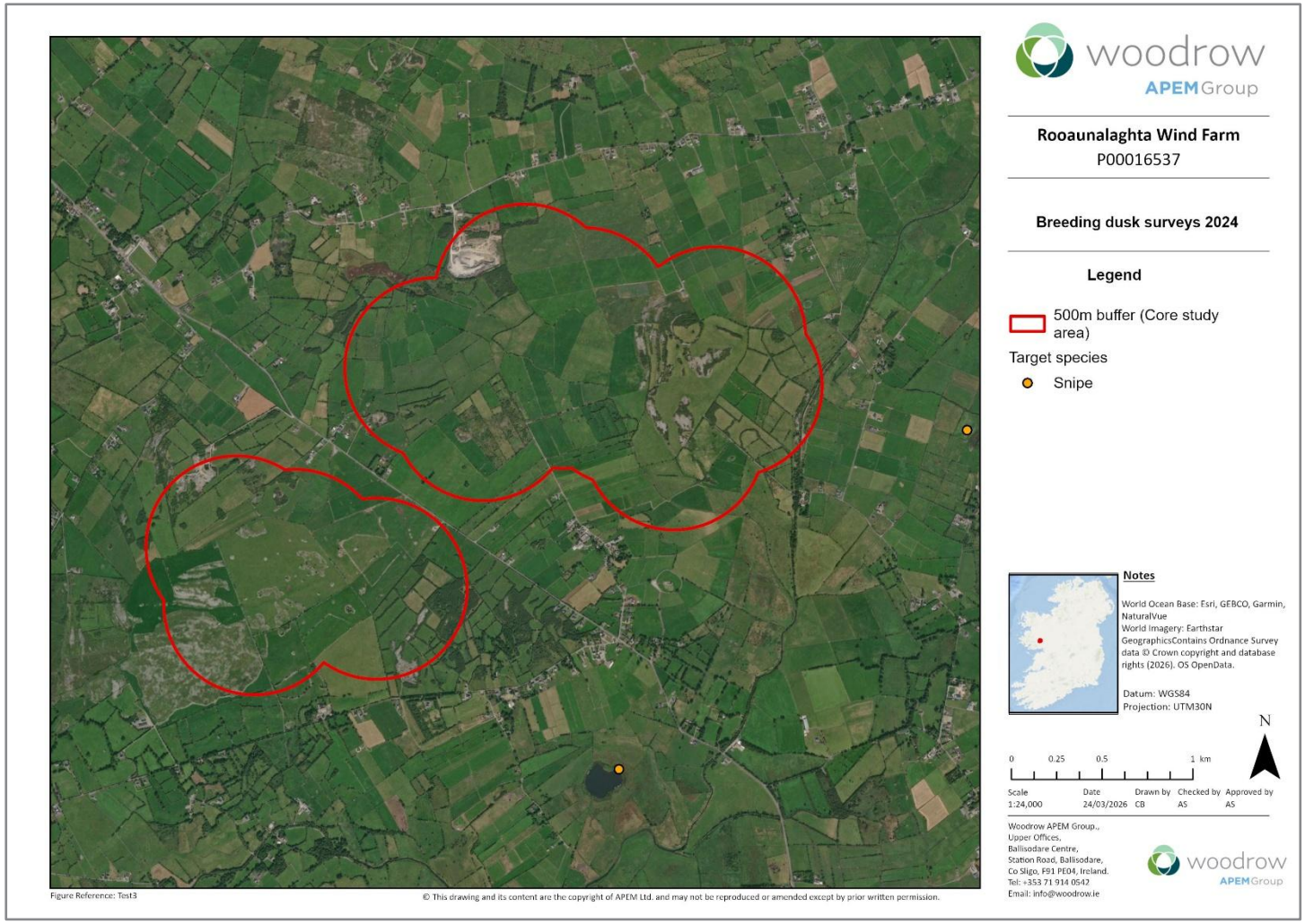


Figure 15. Target species recorded during dusk surveys in Year 2

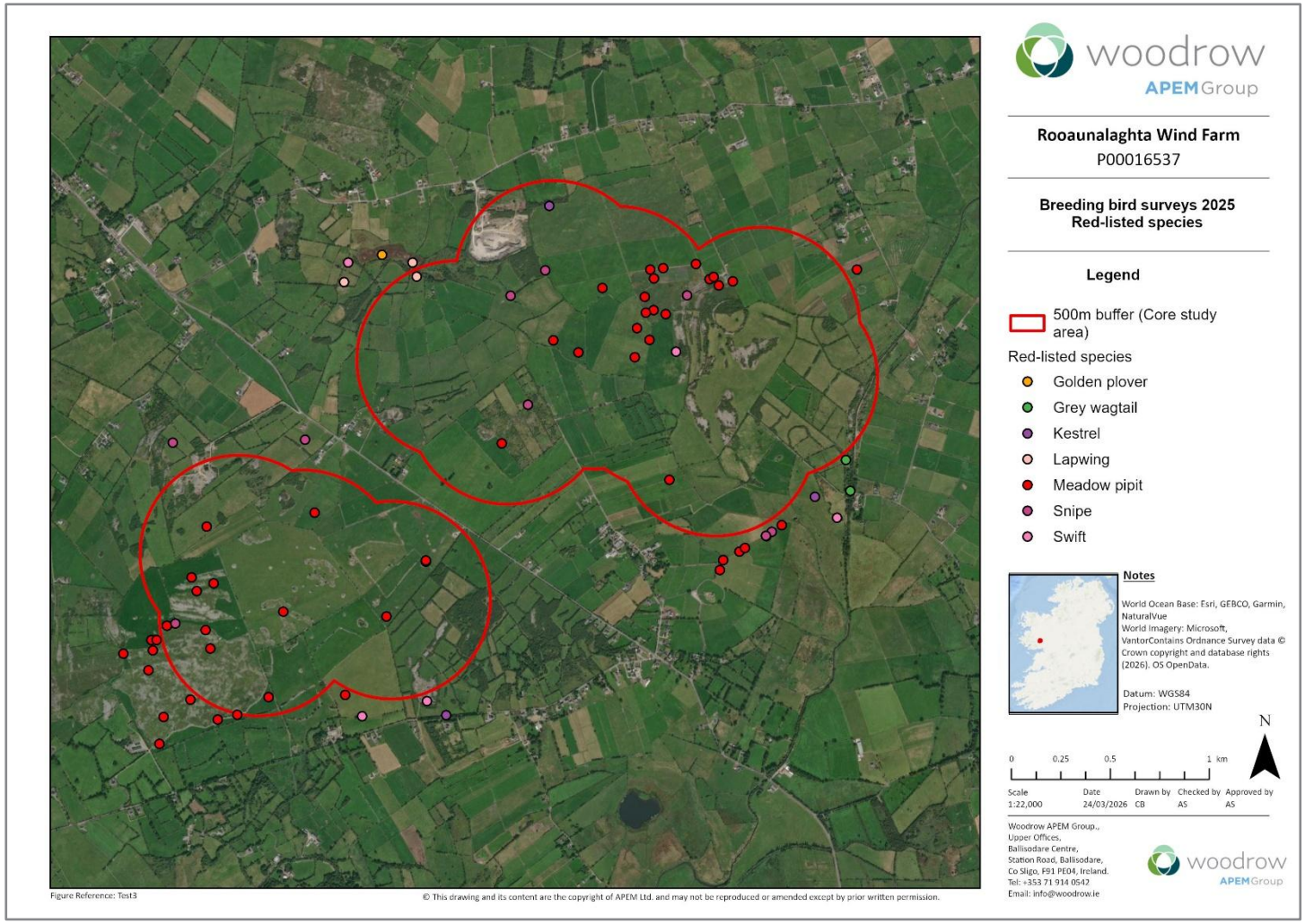


Figure 16. Red-listed species recorded during breeding bird surveys in Year 3

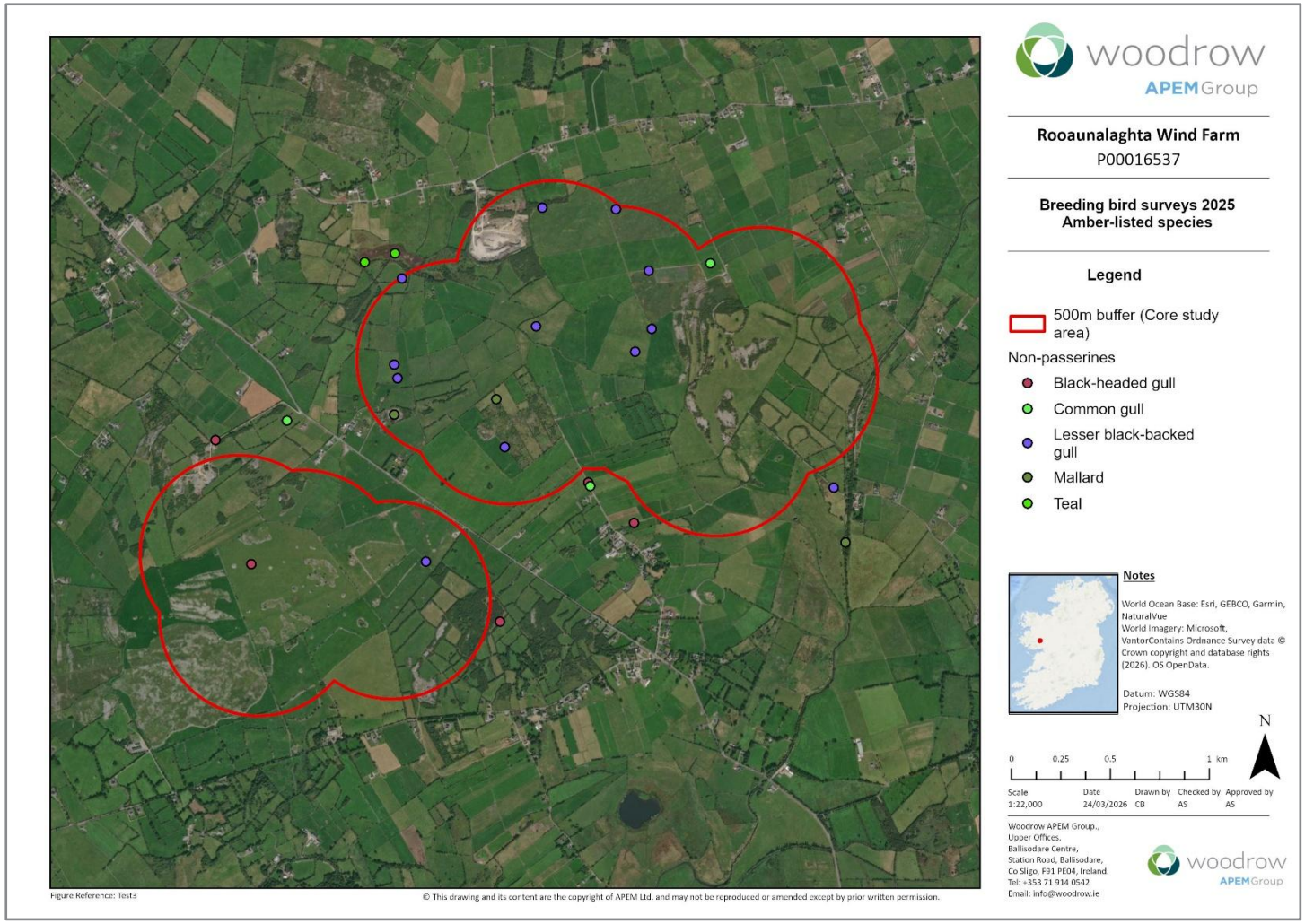


Figure 17. Amber-listed non-passerine species recorded during breeding bird surveys in Year 3

4.3. Breeding raptor survey results

Breeding raptor surveys conducted within the Raptor Study Area of 2km (Figure 7) recorded regular use by buzzard, kestrel, and peregrine, with occasional records of sparrowhawk. Bird activity is summarised across three breeding season periods:

- Year 1: March–May 2023
- Year 2: March–July 2024
- Year 3: March–July 2025

Summary results are presented in Table 39, Table 40 and Table 41, with mapped flightlines shown in Figure 1818, Figure 1919, Figure 200 and Figure 211. These observations were analysed alongside flight behaviour recorded during VP watches, other breeding season surveys and incidental records to determine the breeding status of raptor species within the raptor survey area (Table 42). Full details are provided in **Appendix 7-8: Survey results**.

Territory mapping for raptor species was not applied. Instead, all flightlines recorded during breeding season surveys are presented, reflecting the absence of confirmed breeding territories within the Project Site or surrounding survey area, with the exception of peregrine.

Raptor activity was concentrated along farmland margins, scrub edges, quarry faces, and wet grassland interfaces. Buzzard and kestrel were frequently observed hunting or displaying, indicating routine use of the wider area. Peregrine consistently utilised a known nest site at Kinlough Castle and was regularly recorded in flight over the Project. Sparrowhawk breeding behaviour was recorded in the vicinity of the Site during 2025; however, breeding within the Site itself could not be confirmed.

Patterns of raptor use showed little change between the three seasons, reflecting the stable distribution of suitable foraging habitat.

Table 39. Summary of breeding raptor survey observations during Year 1 breeding season

Species *[25]	BTO code	No. Individuals		Sum of individuals	Number of observations
		Mar	May		
BoCCI (2020-2026) Red-listed species					
Kestrel	K.	-	1	1	1
BoCCI (2020-2026) Green-listed species					
Buzzard	BZ	2	2	4	3
Peregrine *	PE	2	-	2	2

Table 40. Summary of breeding raptor survey observations during Year 2 breeding season

Species *[26]	BTO code	No. Individuals					Sum of individuals	Number of observations
		Mar	April	May	Jun	Jul		
BoCCI (2020-2026) Red-listed species								
Kestrel	K.	-	5	3	3	1	12	11
BoCCI (2020-2026) Green-listed species								
Buzzard	BZ	1	5	5	2	2	15	14

25 Annex I listed species

26 Annex I listed species

Species *[26]	BTO code	No. Individuals					Sum of individuals	Number of observations
		Mar	April	May	Jun	Jul		
Peregrine *	PE	-	3	12	-	-	15	15
Sparrowhawk	SH	-	1	1	-	-	2	2

Table 41. Summary of breeding raptor survey observations during Year 3 breeding season

Species *[27]	BTO code	No. Individuals					Sum of individuals	Number of observations
		Mar	April	May	Jun	Jul		
BoCCI (2020-2026) Red-listed species								
Kestrel	K.	-	1	-	1	3	5	5
BoCCI (2020-2026) Green-listed species								
Buzzard	BZ	1	1	3	-	6	11	9
Peregrine *	PE	-	-	1	-		1	1
Sparrowhawk	SH	1	-	-	-	2	6	3

27 Annex I listed species

Table 42. Summary of all raptor observations made during breeding raptor surveys in Year 1, Year 2 and Year 3

Species *[28]	2023 Breeding status	2024 Breeding status	2025 Breeding status
BoCCI (2020-2026) Red-listed species			
Kestrel	No breeding behaviour was recorded during the raptor surveys. The only sighting during the breeding raptor surveys involved a single individual being mobbed by hooded crows in mid-May.	Possible breeding occurred nearby, based on early-season observations of breeding behaviour and frequent use of the Project Site for foraging, with 1–2 individuals recorded on 11 occasions between April and July. However, no nest was located, and no fledglings were observed. Breeding is therefore considered probable in the wider surrounding area outside the Project Site.	Five single individuals were recorded on five occasions between April and July. No evidence of breeding was observed during the breeding raptor surveys.
BoCCI (2020-2026) Green-listed species			
Buzzard	Possible breeding was recorded within the Project Site, based on two observations of individuals and the presence of a pair during raptor surveys between late March and mid-May.	Two birds were seen in late March, and courtship by a pair was recorded within the 2 km survey area during breeding raptor surveys in late April. Otherwise, single individuals were recorded on 12 occasions between April and July, although no further breeding behaviour was observed.	Single individuals were observed on seven occasions between late March and late July during the breeding raptor surveys, with three soaring together in early July. The regular presence of singles, along with the three seen together in July, suggests that possible breeding may occur within the wider area.
Peregrine*	Possible breeding within the Project Site, based on separate observations of male and female perched at the known breeding site at Kinlough Castle during late March.	Possible breeding within the Project Site, based on observations of single individuals, likely involving both male and female, perched at and associating with the known breeding site at Kinlough Castle on multiple occasions during April and May.	Possible breeding within the Project Site, based on an observation of a single individual, probably a female, heard calling from the direction of Kinlough Castle before soaring up and out of sight during a breeding raptor survey at the end of May.
Sparrowhawk	The species was not recorded during breeding raptor surveys.	No breeding behaviour was recorded during breeding raptor surveys, although a single individual was observed hunting in mid-May.	Singles were observed in low-level hunting flight during breeding raptor surveys in late March and late July. No breeding evidence was noted.

28 Annex I listed species

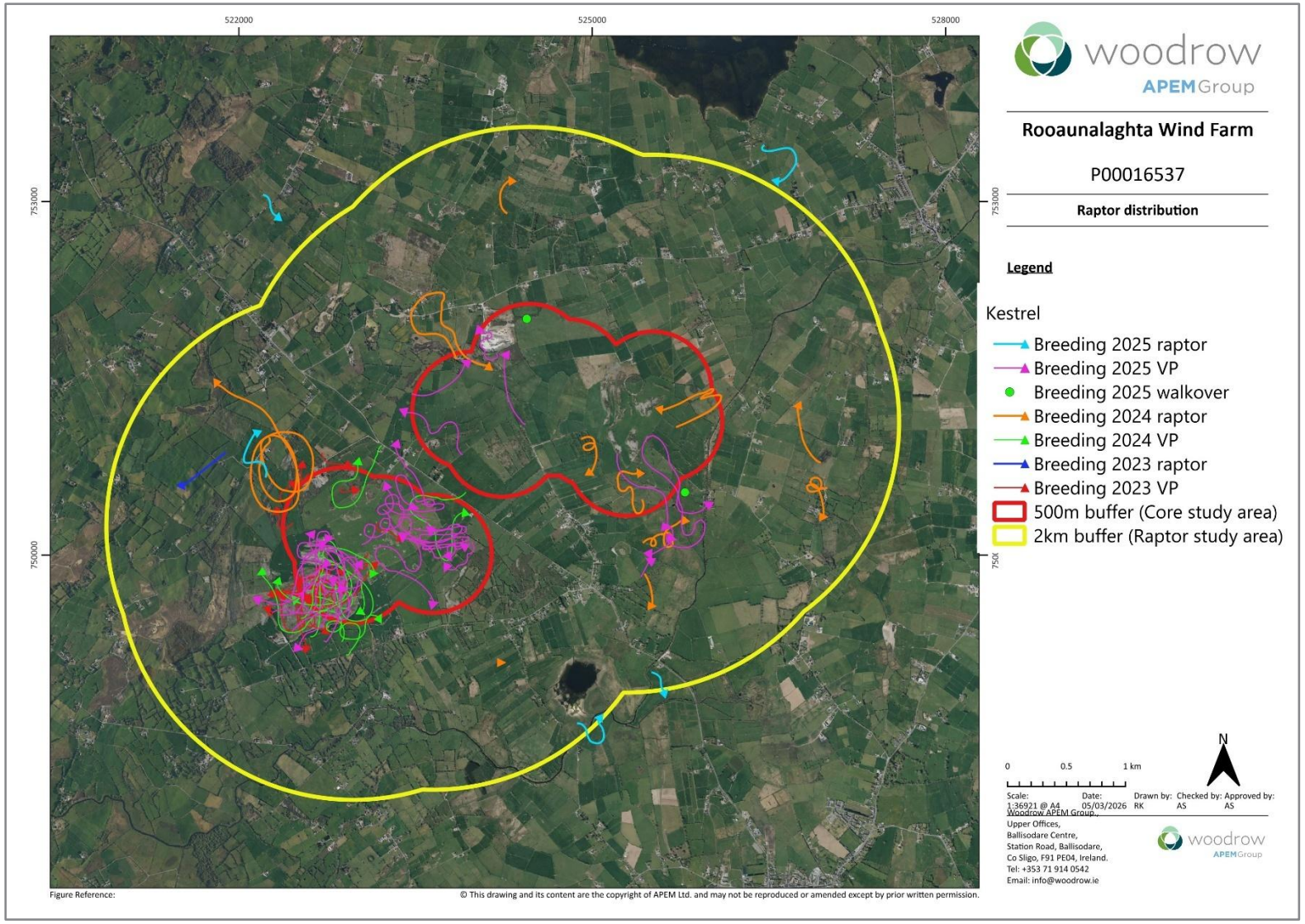


Figure 18. Kestrel flightlines recorded during breeding season surveys in Year 1, 2 and 3

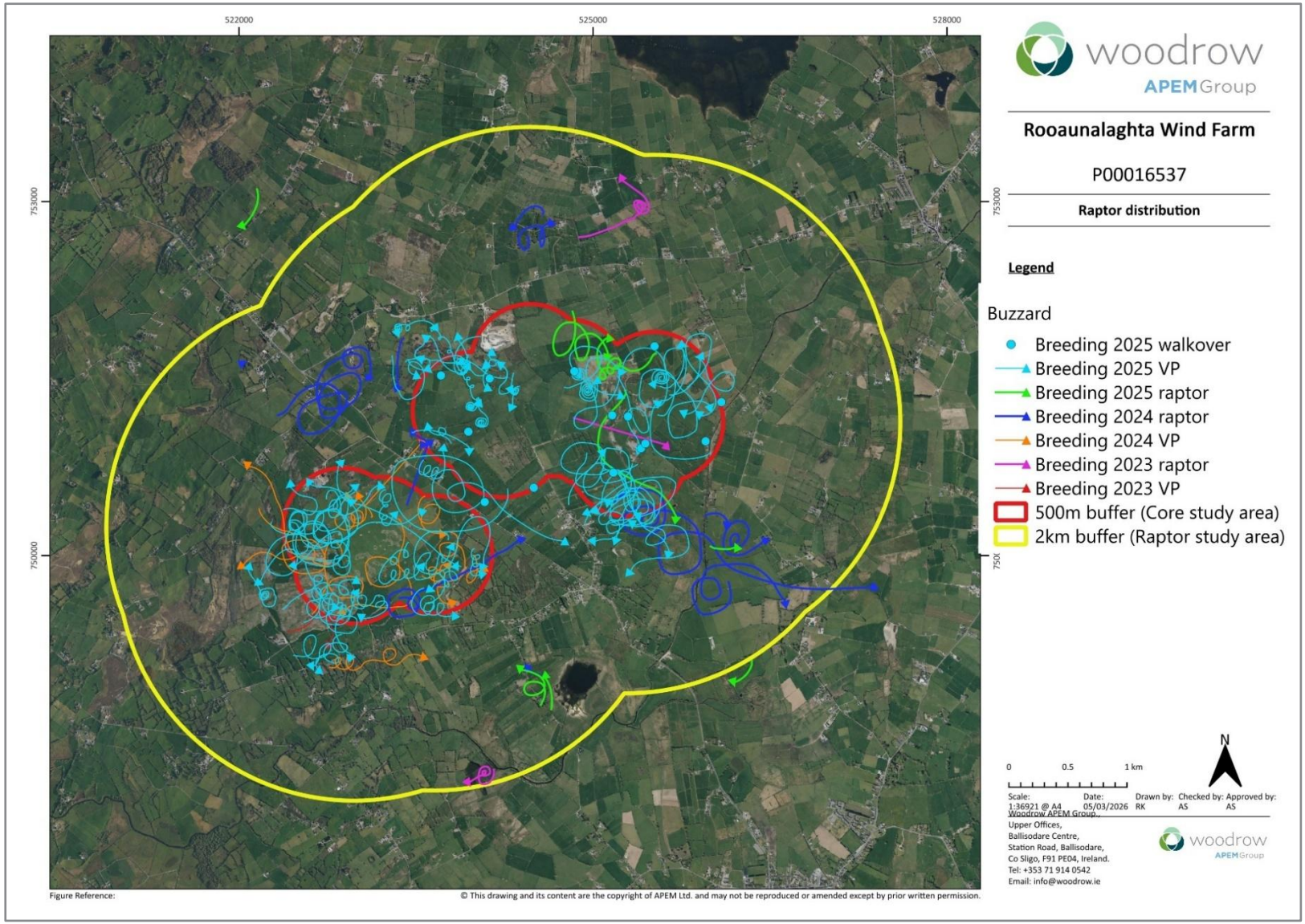


Figure 19. Buzzard flightlines recorded during breeding season surveys in Year 1, 2 and 3

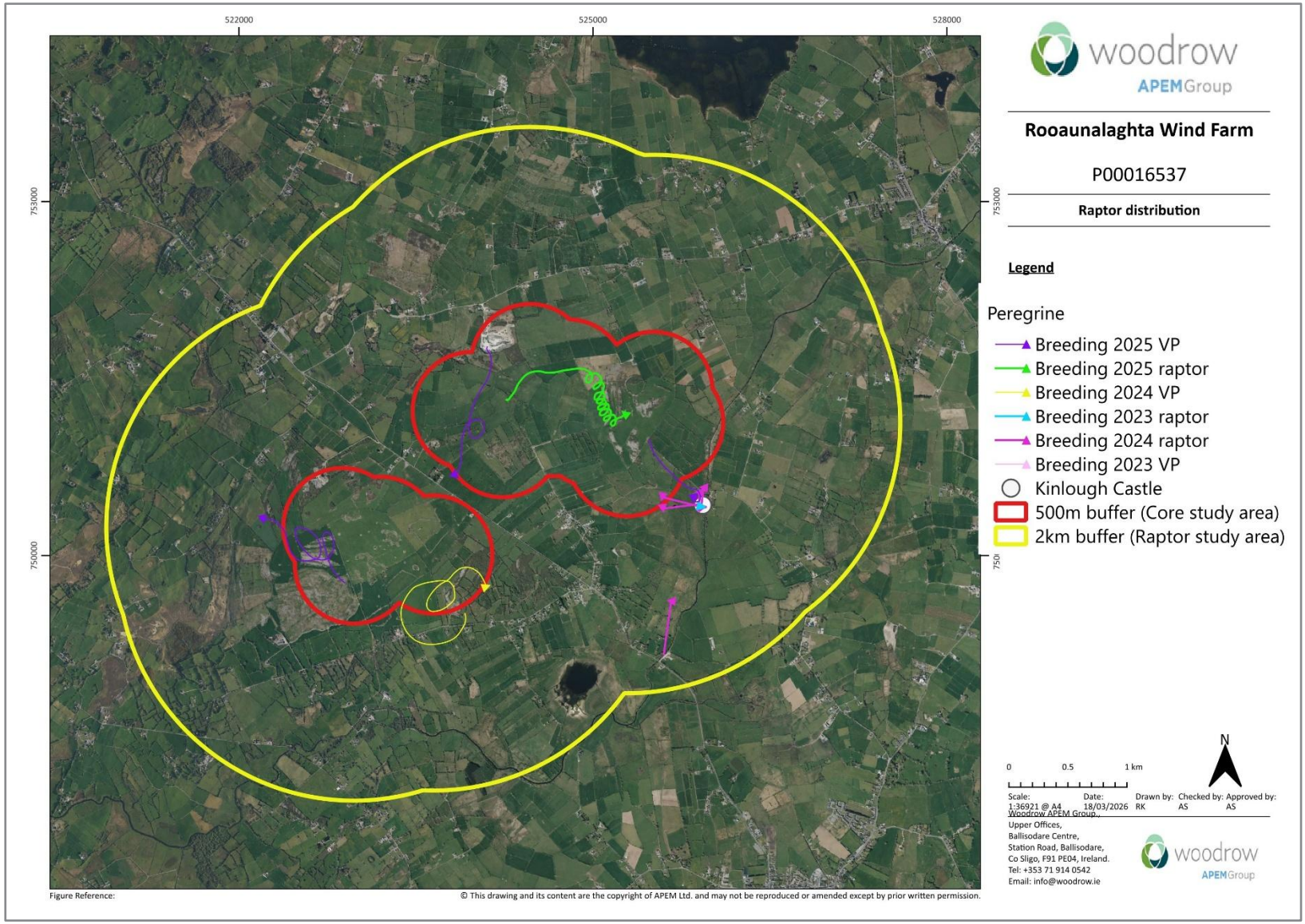


Figure 20. Peregrine flightlines recorded during breeding season surveys in Year 1, 2 and 3

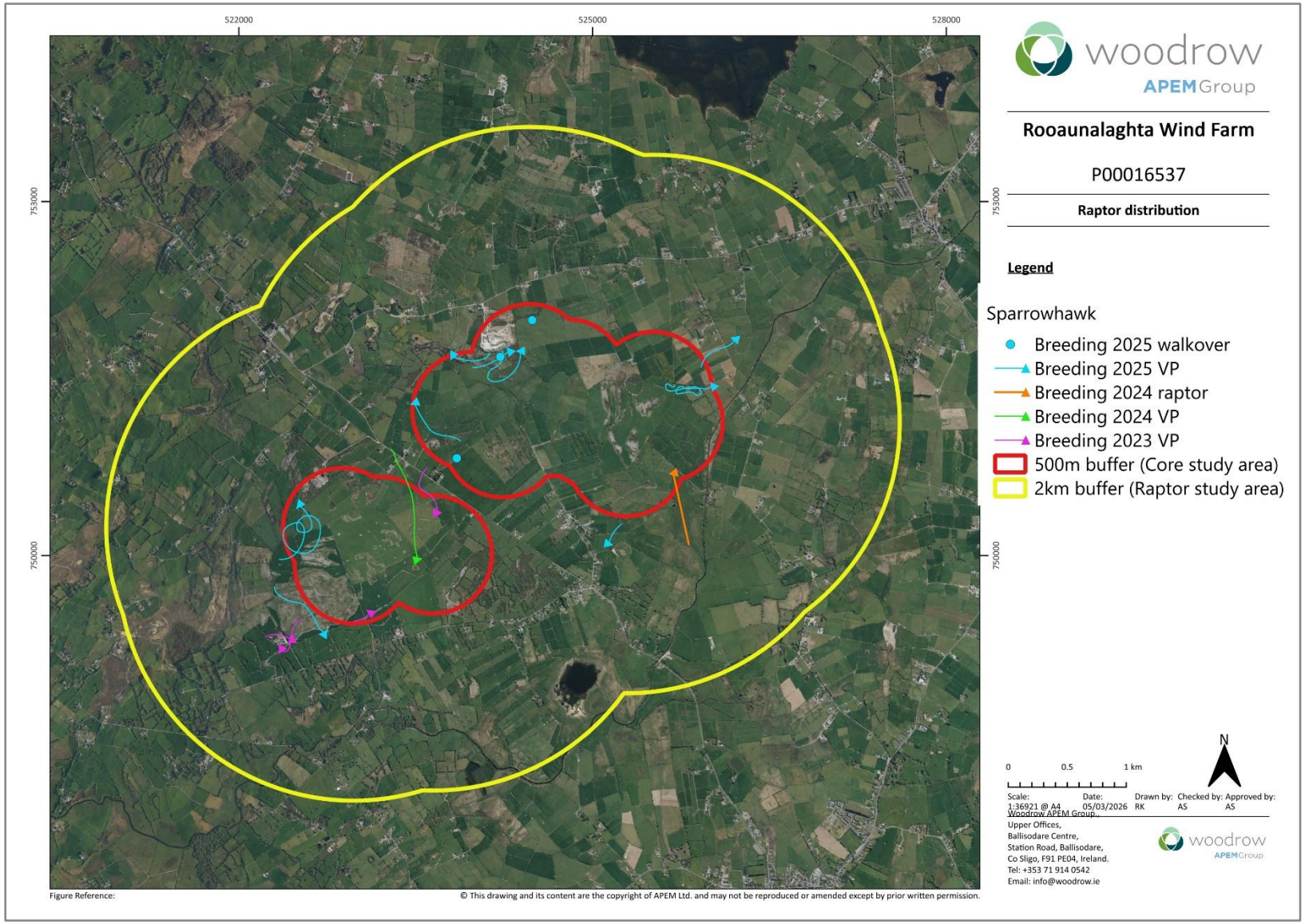


Figure 21: Sparrowhawk flightlines recorded during breeding season surveys in Year 1, 2 and 3

4.4. Winter walkover surveys

A total of 66 species were recorded during the winter walkover surveys undertaken within the core study area across three non-breeding seasons, including 12 Red-listed, 19 Amber-listed species and two Annex I Green-listed species. Bird activity is summarised across three winter season periods:

- Year 1: November 2022–March 2023
- Year 2: November 2023–March 2024
- Year 3: October 2024–February 2025

Results are summarised in Table 43, Table 44 and Table 45, with mapped distributions provided in Figure 222, Figure 233, Figure 244, Figure 255 and Figure 266, and full raw data in **Appendix 7-8: Survey results**.

Regularly recorded species included redwing, starling, meadow pipit, linnet, and mixed gull flocks. Wader species such as curlew, lapwing, and snipe were recorded intermittently, with occurrence varying in response to ground moisture and feeding conditions. The 2024–25 season supported the highest species richness and largest flock sizes, reflecting broader regional wintering patterns rather than changes in local habitat availability.

The assemblage of Red-listed species recorded in Years 1 and 2 was broadly comparable, although redshank was recorded only in Year 1. Year 2 showed a 36% increase in the occurrence of Amber-listed species, with 15 species recorded compared to 11 in Year 1. Whooper swan, absent in Year 1, was recorded in both Years 2 and 3.

In Year 3, a total of 11 Red-listed species were recorded, including additional observations of barn owl, curlew, grey wagtail, shoveler, and yellowhammer during winter walkover surveys. Amber-listed species increased to 16, with merlin and teal recorded for the first time during these surveys.

Annex I listed species were included within the results summary tables below for all winter walkover surveys where recorded.

Table 43. Summary of Red, Amber and Annex I listed species recorded during winter walkover surveys in Year 1 non-breeding season

Species *[29]	BTO code	No. Individuals			Sum of individuals	Number of observations
		Nov	Jan	Mar		
BoCCI (2020-2026) Red-listed species						
Golden plover*	GP	1	-	-	1	1
Kestrel	K.	3	-	-	3	3
Meadow pipit	MP	47	12	11	70	26
Redshank	RK	1	-	-	1	1
Redwing	RE	181	137	3	321	58
Snipe	SN	14	-	2	16	12
Woodcock	WK	1	-	-	1	1
BoCCI (2020-2026) Amber-listed species						
Black-headed gull	BH	-	85	20	105	7
Common gull	CM	1	29	75	105	13

29 Annex I listed species

Species *[29]	BTO code	No. Individuals			Sum of individuals	Number of observations
		Nov	Jan	Mar		
Goldcrest	GC	10	2	2	14	8
Greenfinch	GR	2	3	-	5	3
Greylag goose	GJ	42	-	-	42	1
Herring gull	HG	-	4	-	4	1
House sparrow	HS	7	-	-	7	1
Lesser black-backed gull	LB	-	4	-	4	1
Linnet	LI	-	100	-	100	1
Mallard	MA	1	5	-	6	4
Starling	SG	351	182	81	614	22

Table 44. Summary of Red, Amber and Annex I listed species recorded during winter walkover survey in Year 2 non-breeding season

Species *[30]	BTO code	No. Individuals					Sum of individuals	Number of observations
		Nov	Dec	Jan	Feb	Mar		
BoCCI (2020-2026) Red-listed species								
Golden plover*	GP	1	-	-	-	-	1	1
Kestrel	K.	-	1	-	2	-	3	3
Meadow pipit	MP	28	13	1	26	1	69	22
Redwing	RE	49	49	33	45	9	185	37
Snipe	SN	4	-	17	5	16	42	25
Woodcock	WK	-	-	-	3	2	5	5
BoCCI (2020-2026) Amber-listed species								
Black-headed gull	BH	-	-	-	2	16	18	3
Common gull	CM	-	-	-	362	35	397	6
Coot	CO	-	-	-	1	-	1	1
Goldcrest	GC	2	2	1	1	3	9	9
Greylag goose	GJ	-	2	-	-	-	2	1
Gull sp.	HG/CM/BH	-	-	-	120	-	120	
House sparrow	HS	5	-	-	-	-	5	2
Lesser black-backed gull	LB	-	1	-	-	2	3	3
Mallard	MA	-	-	-	2	-	2	1
Mute swan	MS	-	-	3	-	-	3	1
Skylark	SN	1	-	-	-	-	1	1
Starling	SG	53	108	44	-	-	205	13
Tufted duck	TU	-	-	-	6	-	6	1
Whooper swan*	WS	-	18	-	-	-	18	3
Wigeon	WN	-	-	-	6	-	6	1
BoCCI (2020-2026) Green-listed species								
Peregrine*	PE	-	1	-	-	-	1	1

30 Annex I listed species

Table 45. Summary of Red, Amber and Annex I listed species during winter walkover survey in Year 3 non-breeding season

Species [*31]	BTO code	No. individuals			Sum of individuals	Number of observations
		Oct	Nov	Feb		
BoCCI (2020-2026) Red-listed species						
Barn owl	BO	-	1	-	1	1
Curlew	CU	-	-	2	2	1
Golden plover*	GP	4	-	-	4	1
Grey wagtail	GL	4	3	1	8	7
Kestrel	K	2	4	1	7	6
Meadow pipit	MP	142	80	30	252	77
Redwing	RE	1	516	331	848	44
Shoveler	SV	-	-	7	7	2
Snipe	SN	13	14	16	43	24
Woodcock	WK	-	2	1	3	3
Yellowhammer	Y.	-	1	-	1	1
BoCCI (2020-2026) Amber-listed species						
Black-headed gull	BH	-	-	355	355	6
Common gull	CM	-	-	499	499	9
Coot	CO	-	-	2	2	1
Greenfinch	GR	-	1	-	1	1
Greylag goose	GJ	-	14	-	14	1
Herring gull	HG	-	-	1	1	1
House sparrow	HS	8	29	7	44	5
Lesser black-backed gull	LB	2	-	9	11	3
Linnet	LI	80	64	27	171	19
Mallard	MA	2	3	21	26	7
Merlin*	ML	-	-	2	2	2
Skylark	S.	12	1	13	26	16
Starling	SG	62	451	247	760	26
Teal	T.	-	-	43	43	4
Whooper swan*	WS	-	-	8	8	1
Wigeon	WN	-	-	14	14	1
BoCCI (2020-2026) Green-listed species						
Little egret *	ET	-	2	2	4	2

31 Annex I listed species

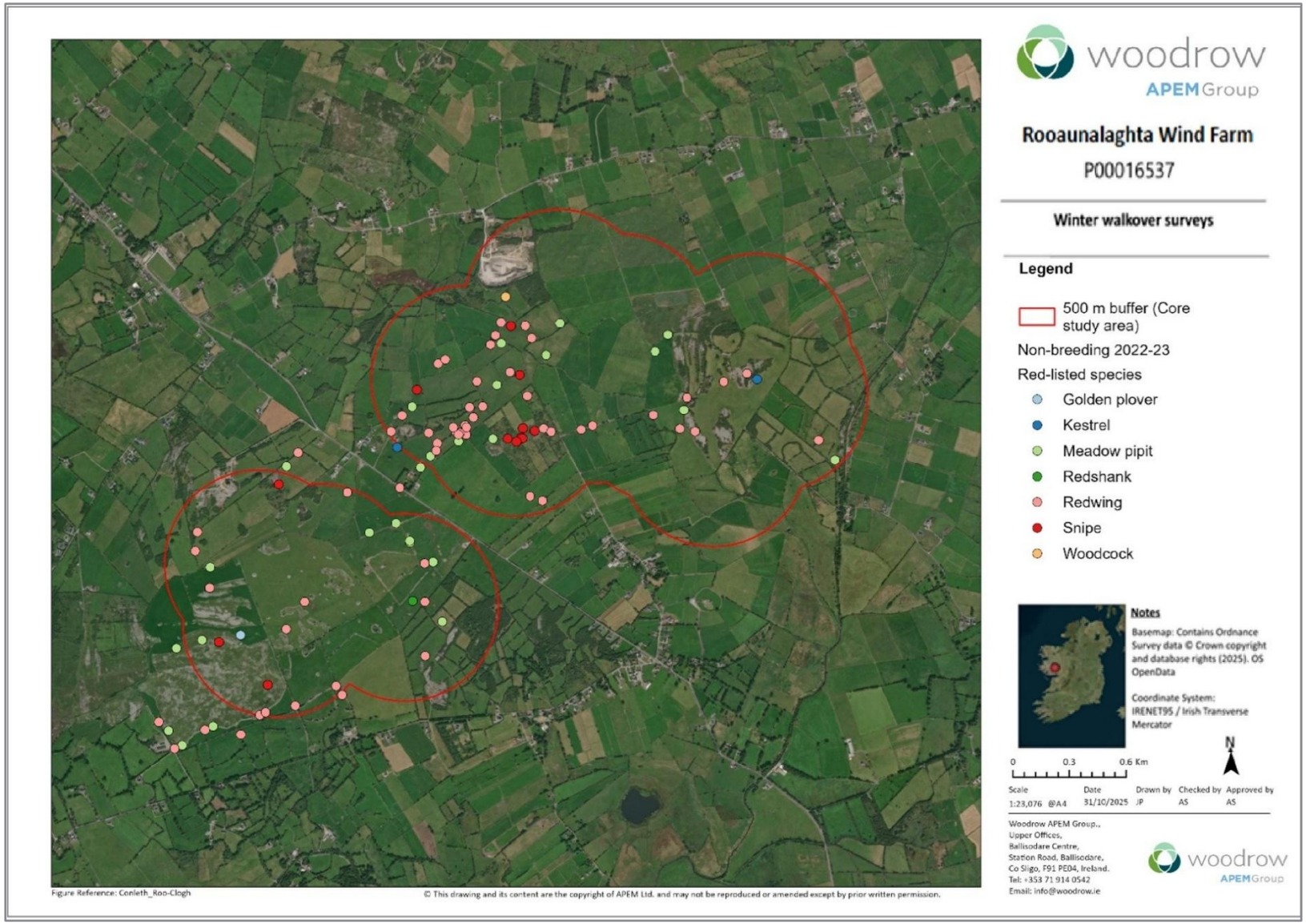


Figure 22. Red-listed species recorded during winter walkover surveys in Year 1

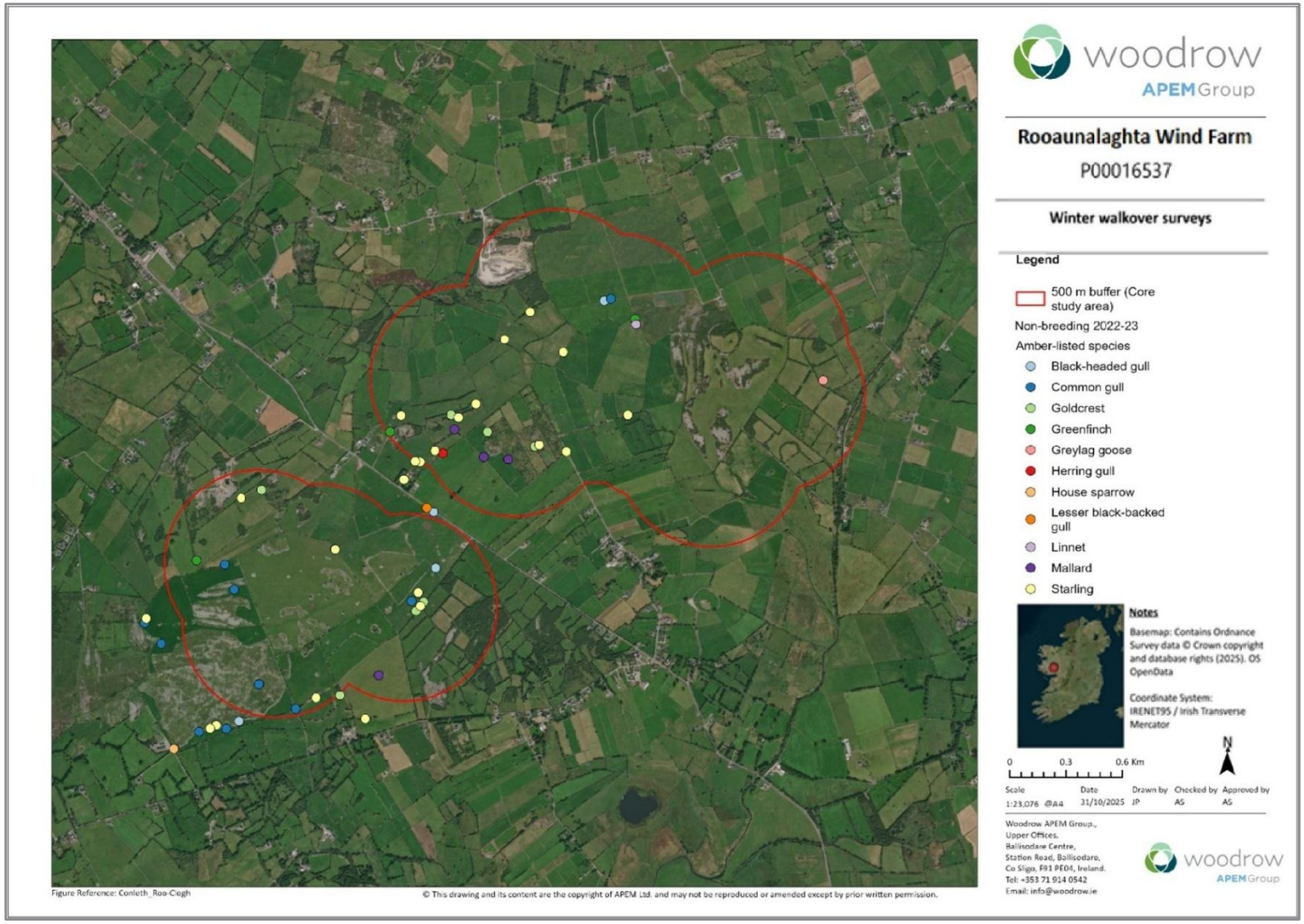


Figure 23. Amber-listed species recorded during winter walkover surveys in Year 1

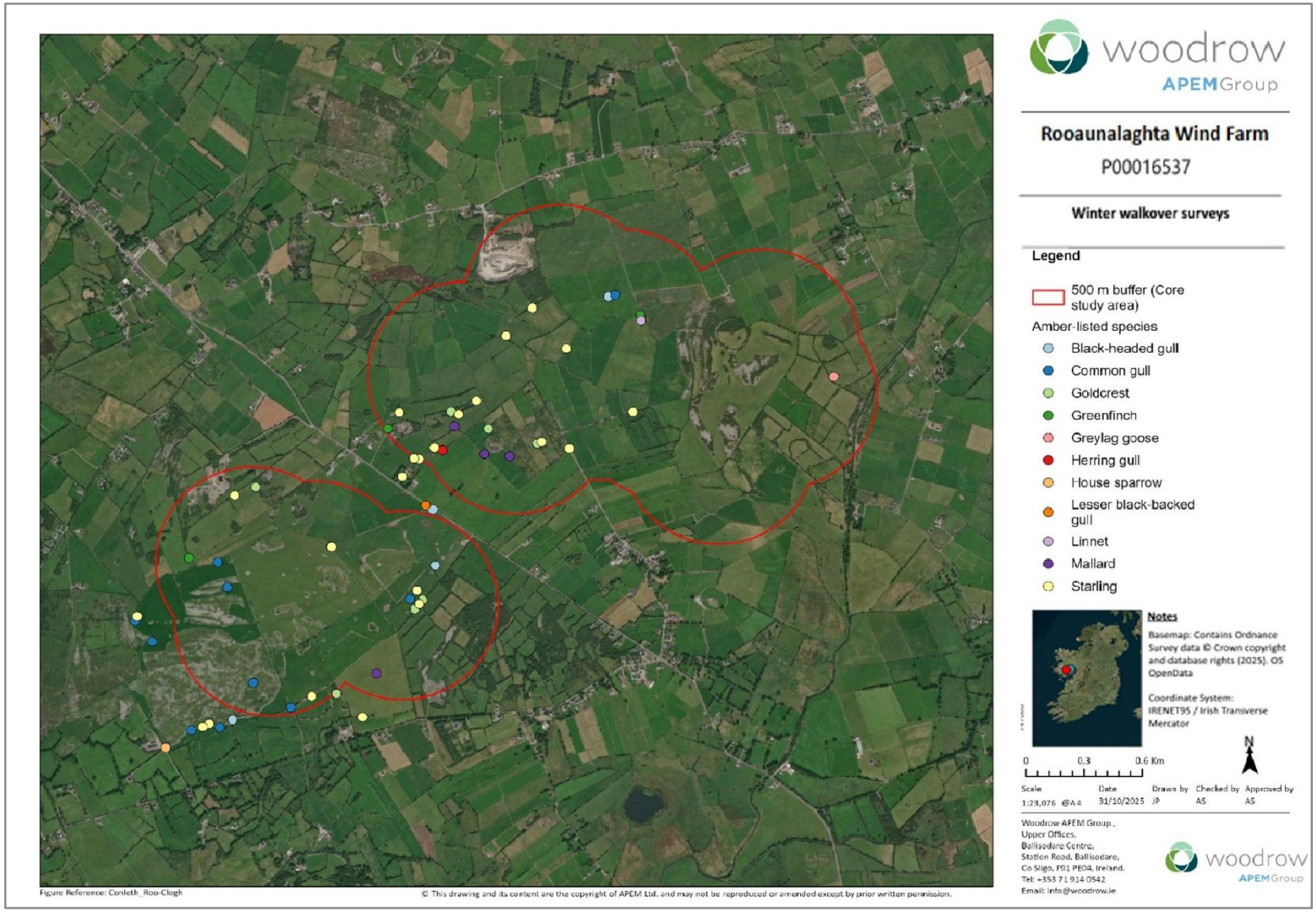


Figure 24. Amber-listed species recorded during winter walkover surveys in Year 2

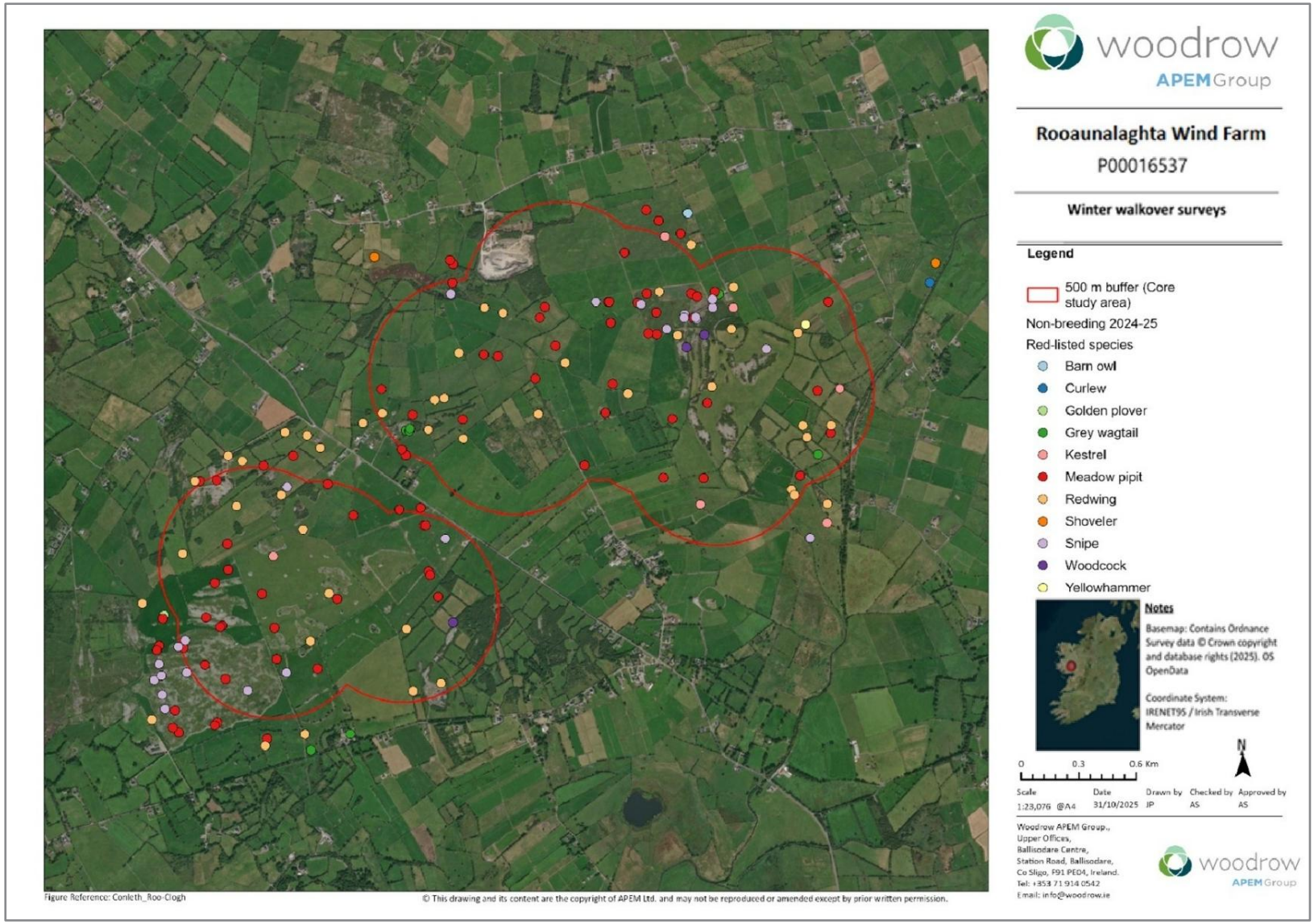


Figure 25. Red-listed species recorded during winter walkover surveys in Year 3

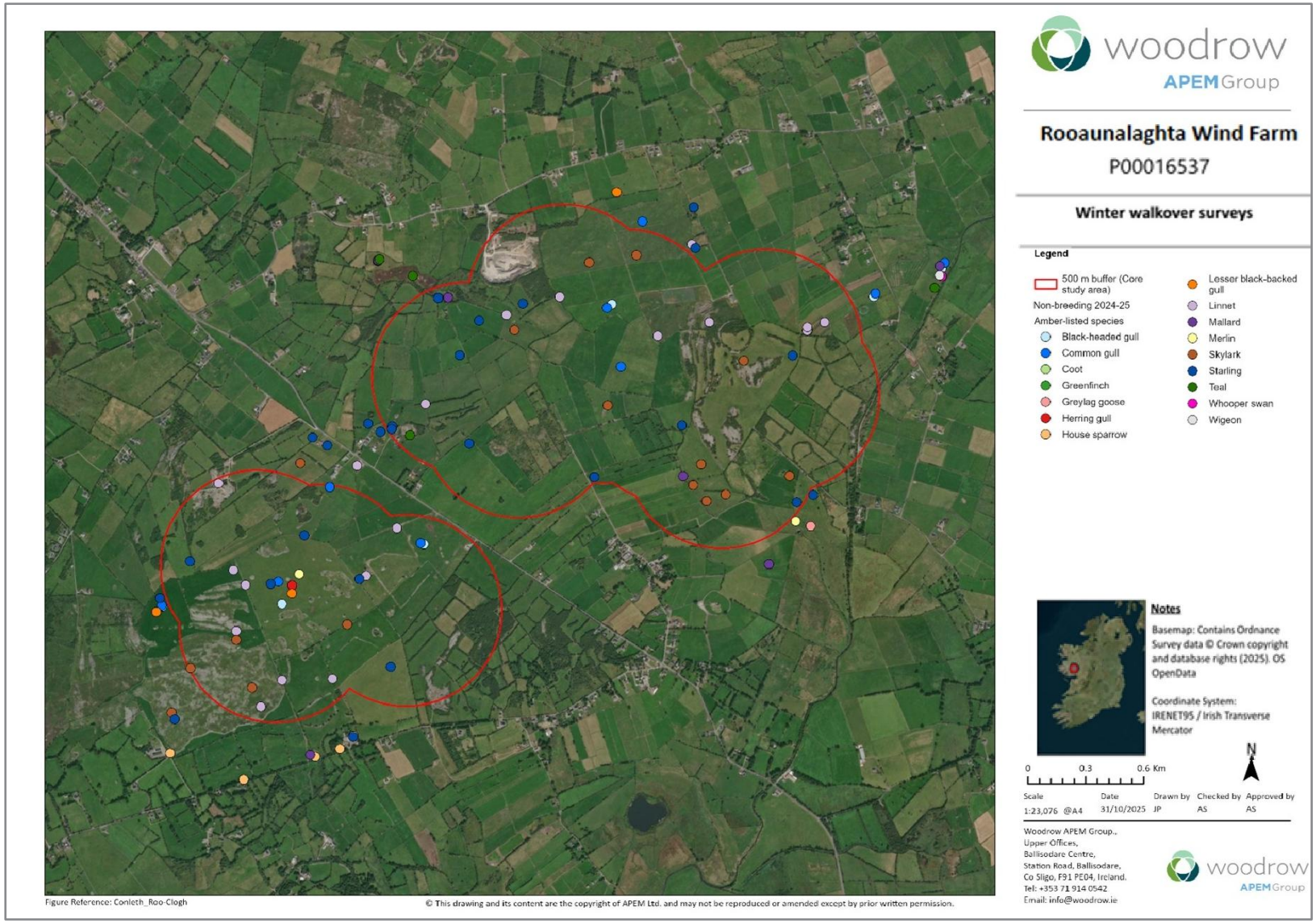


Figure 26. Amber-listed species recorded during winter walkover surveys in Year 3

4.5. Wintering waterbird surveys

Wintering waterbird surveys conducted within the Waterbird Study Area documented substantial seasonal use of Lough Corrib, Rostaff Turlough and Lough Hacket, with intermittent use of farmland habitats within the Project Site. Bird activity is summarised across three winter season periods:

- Year 1: October 2022–March 2023
- Year 2: September 2023–March 2024
- Year 3: October 2024–March 2025

Survey results are summarised in Table 46, Table 47 and Table 48, mapped outputs in Figure 277, Figure 288, Figure 2929 and Figure 300 show the locations of waterbirds during the 2022-23 winter season, Figure 311, Figure 322, Figure 333 and Figure 344 illustrate the locations of waterbirds during the 2023-24 winter season and Figure 355, Figure 366, Figure 377 and Figure 3838 display the location of waterbirds during the 2024-25 non-breeding season, with broader I-WeBS context in **Appendix A – NBDC and I-WeBS Records**. A full list of species including incidental bird species can be found in **Appendix 7-8: Survey Results**.

A total of 34 waterbird species were recorded during the surveys, comprising eight Red-listed species—black-tailed godwit (*Limosa limosa*), curlew, golden plover, lapwing, pochard (*Aythya ferina*), shoveler, snipe, and woodcock—and 17 Amber-listed species, including black-headed gull, brent goose (*Branta bernicla*), common gull (*Larus canus*), coot, cormorant (*Phalacrocorax carbo*), gadwall (*Mareca strepera*), great crested grebe (*Podiceps cristatus*), Greenland white-fronted goose, greylag goose, herring gull (*Larus argentatus*), lesser black-backed gull (*Larus fuscus*), mallard, mute swan, pintail (*Anas acuta*), teal, tufted duck, and whooper swan.

Large wintering populations of species such as whooper swan, wigeon, teal, mallard, shoveler, and tufted duck were consistently associated with nearby wetlands, some of which regularly supported nationally important numbers. Occasional records of Greenland white-fronted geese were associated with known roosting locations at Rostaff Turlough. Within the Project Site, waterbird activity was relatively low and largely confined to wet grassland, shallow depressions, and field margins. Commuting and flyover movements recorded during VP watches closely aligned with patterns observed during the waterbird surveys.

Waterbird activity along the Grid Connection Route (GCR), which was surveyed as part of the wider waterbird survey programme, was generally low. A small area associated with the Black River, located approximately 200-250 m from the GCR at its closest point, is subject to occasional winter flooding and periodically supports small groups of foraging gulls, waders, swans and geese, including whooper swan and curlew.

Table 46. Summary of Red, Amber and Annex I Green-listed species recording during wintering waterbird surveys in Year 1 non-breeding season

Species	BTO code	Number of observations						Sum of individuals	Number of observations
		Oct	Nov	Dec	Jan	Feb	Mar		
BoCCI (2020-2026) Red-listed species									
Black-tailed godwit	BW	-	-	-	-	5	-	5	1
Curlew	CU	110	79	44	53	98	-	384	21
Golden plover*	GP	-	-	58	-	-	-	58	2

Species	BTO code	Number of observations						Sum of individuals	Number of observations
		Oct	Nov	Dec	Jan	Feb	Mar		
Lapwing	L	294	163	388	69	342	-	1,256	22
Pochard	PO	16	-	-	-	-	-	16	2
Shoveler	SV	16	53	138	37	236	2	482	17
BoCCI (2020-2026) Amber-listed species									
Black-headed gull	BH	-	43	134	172	394	5	748	23
Brent goose	BG	-	4	-	-	-	-	4	1
Common gull	CM	1	64	26	38	1,593	1	1,723	15
Coot	CO	-	-	2	1	8	-	11	5
Cormorant	CA	-	12	28	11	19	-	70	16
Gadwall	GA	-	-	7	40	105	-	152	6
Great crested grebe	GG	-	-	1	-	6	-	7	5
Greenland white-fronted goose	WG	40	118	-	-	-	-	158	10
Greylag goose	GJ	-	-	274	18	20	-	312	4
Gull sp.	CM / BH	-	-	-	-	-	30	30	1
Herring gull	HG	-	3	2	18	1	-	24	1
Lesser black-backed gull	LB	31	11	1	-	11	-	54	5
Mallard	MA	46	69	127	16	64	5	327	31
Mute swan	MS	14	-	21	16	9	2	62	8
Teal	T.	77	30	146	17	200	4	474	20
Tufted duck	TU	6	441	1276	49	214	54	2,040	39
Whooper swan*	WS	19	47	201	16	18	-	301	18
Wigeon	WN	19	185	836	284	449	75	1,848	38

Table 47. Summary of Red, Amber and Annex I Green-listed species recorded during wintering waterbird surveys in Year 2 non-breeding season

Species	BTO code	Number of observations							Sum of individuals	Number of observations
		Sep	Oct	Nov	Dec	Jan	Feb	Mar		
BoCCI (2020-2026) Red-listed species										
Curlew	CU	-	106	167	201	170	34	23	701	28
Golden plover*	GP	-	320	85	205	50	-	-	660	4
Lapwing	L.	13	250	271	243	33	-	8	818	22
Pochard	PO	-	-	11	8	11	4	-	34	10
Shoveler	SV	1	76	58	188	229	89	1	642	35
Snipe	SN	-	7	1	3	2	-	-	13	2
BoCCI (2020-2026) Amber-listed species										
Black-headed gull	BH	-	42	3	161	13	2	65	286	12
Common gull	CM	1	1	3	243	2	232	444	926	13

Species	BTO code	Number of observations							Sum of individuals	Number of observations
		Sep	Oct	Nov	Dec	Jan	Feb	Mar		
Coot	CO	6	9	9	56	7	6	6	99	21
Cormorant	CA	3	5	20	36	14	5	6	89	26
Gadwall	GA	-	17	41	90	93	87	22	350	14
Great crested grebe	GG	1	2	-	4	1	3	2	13	8
Greenland white-fronted goose	WG	-	92	-	-	-	-	-	92	4
Greylag goose	GJ	-	36	374	194	285	-	6	895	18
Lesser black-backed gull	LB	-	18	-	1	1	2	5	27	3
Mallard	MA	14	241	35	249	236	34	9	818	46
Mute swan	MS	2	7	3	25	8	10	6	61	18
Teal	T.	2	382	98	443	805	326	91	2,147	47
Tufted duck	TU	15	72	650	403	189	95	66	1,490	52
Whooper swan*	WS	-	47	70	52	103	-	36	308	13
Wigeon	WN	7	275	242	464	891	731	153	2,763	78

Table 48. Summary of Red, Amber and Annex I Green-listed species recorded during wintering waterbird surveys in Year 3 non-breeding season

Species	BTO code	Number of observations					Sum of individuals	Number of observations
		Oct	Nov	Jan	Feb	Mar		
BoCCI (2020-2026) Red-listed species								
Black-tailed godwit	BW	-	5	-	-	2	7	3
Curlew	CU	63	44	88	-	4	327	16
Golden plover*	GP	-	-	-	-	25	249	5
Lapwing	L.	82	346	605	-	39	1,295	24
Pochard	PO	-	11	10	3	1	25	6
Shoveler	SV	3	27	14	38	29	111	13
Snipe	SN	-	-	1	7	1	9	6
Woodcock	WK	-	-	-	2	-	2	2
BoCCI (2020-2026) Amber-listed species								
Black-headed gull	BH	2	13	30	1831	182	2,101	24
Common gull	CM	1	2	-	2574	1034	3,611	22
Coot	CO	87	3	3	4	8	105	10
Cormorant	CA	9	9	23	21	7	69	15
Gadwall	GA	10	4	5	11	1	31	7
Great crested grebe	GG	1	1	2	-	7	11	7
Greylag goose	GJ	52	87	-	-	22	161	6
Gull sp.	CM / BH	-	-	-	70	-	70	1

Species	BTO code	Number of observations					Sum of individuals	Number of observations
		Oct	Nov	Jan	Feb	Mar		
BoCCI (2020-2026) Red-listed species								
Herring gull	HG	-	-	-	2	1	3	3
Lesser black-backed gull	LB	3	11	-	5	16	35	9
Mallard	MA	29	27	36	31	50	173	47
Mute swan	MS	16	17	3	4	5	45	16
Pintail	PT	-	-	2	-	-	2	1
Teal	T.	14	24	17	71	79	205	20
Tufted duck	TU	8	184	348	149	108	797	19
Whooper swan*	WS	4	7	8	6	104	129	10
Wigeon	WN	100	210	172	392	169	1,043	22
BoCCI (2020-2026) Green-listed species								
Little egret*	ET	-	-	-	-	1	1	1

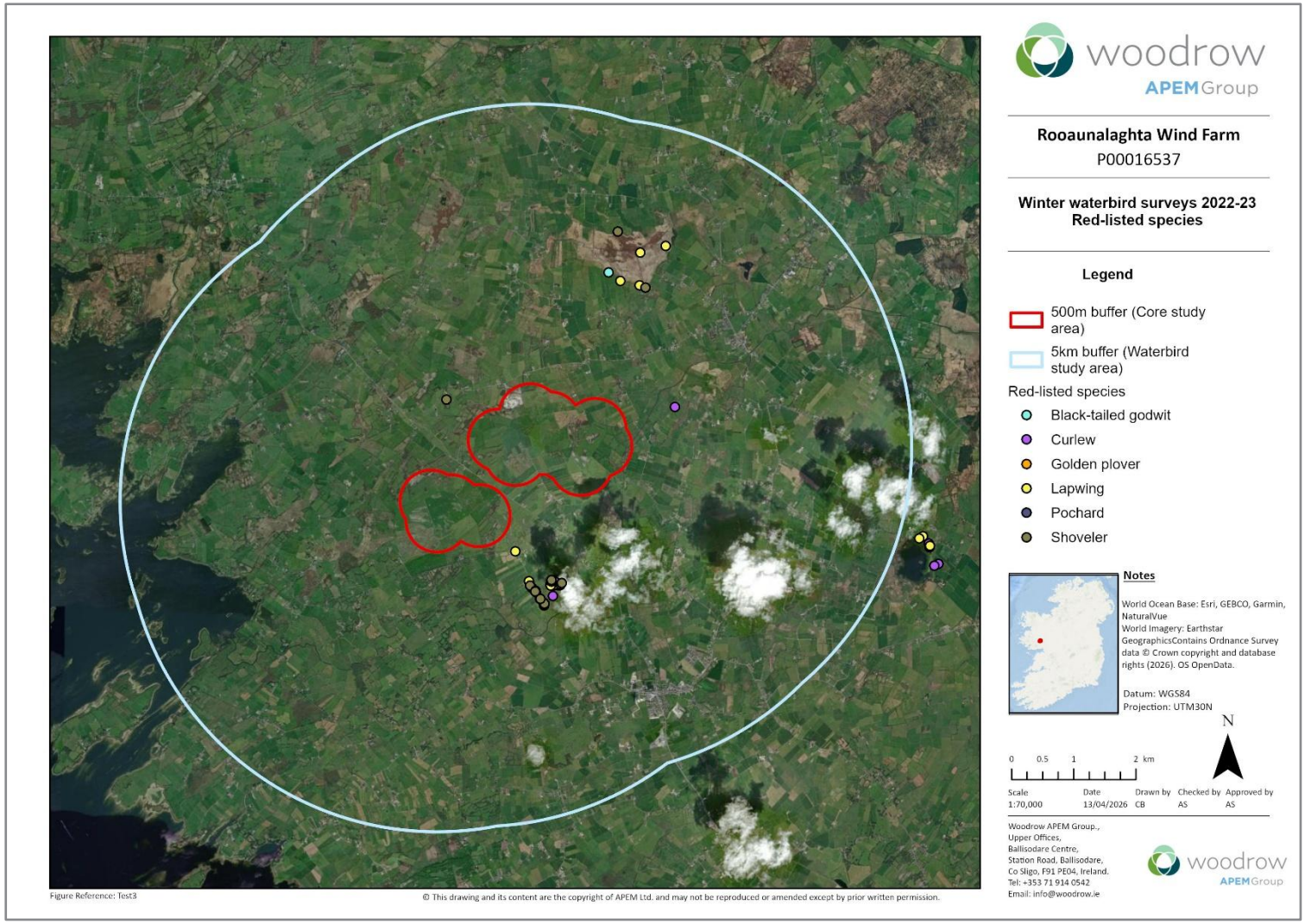


Figure 27. Red-listed species recorded during winter waterbird surveys in Year 1

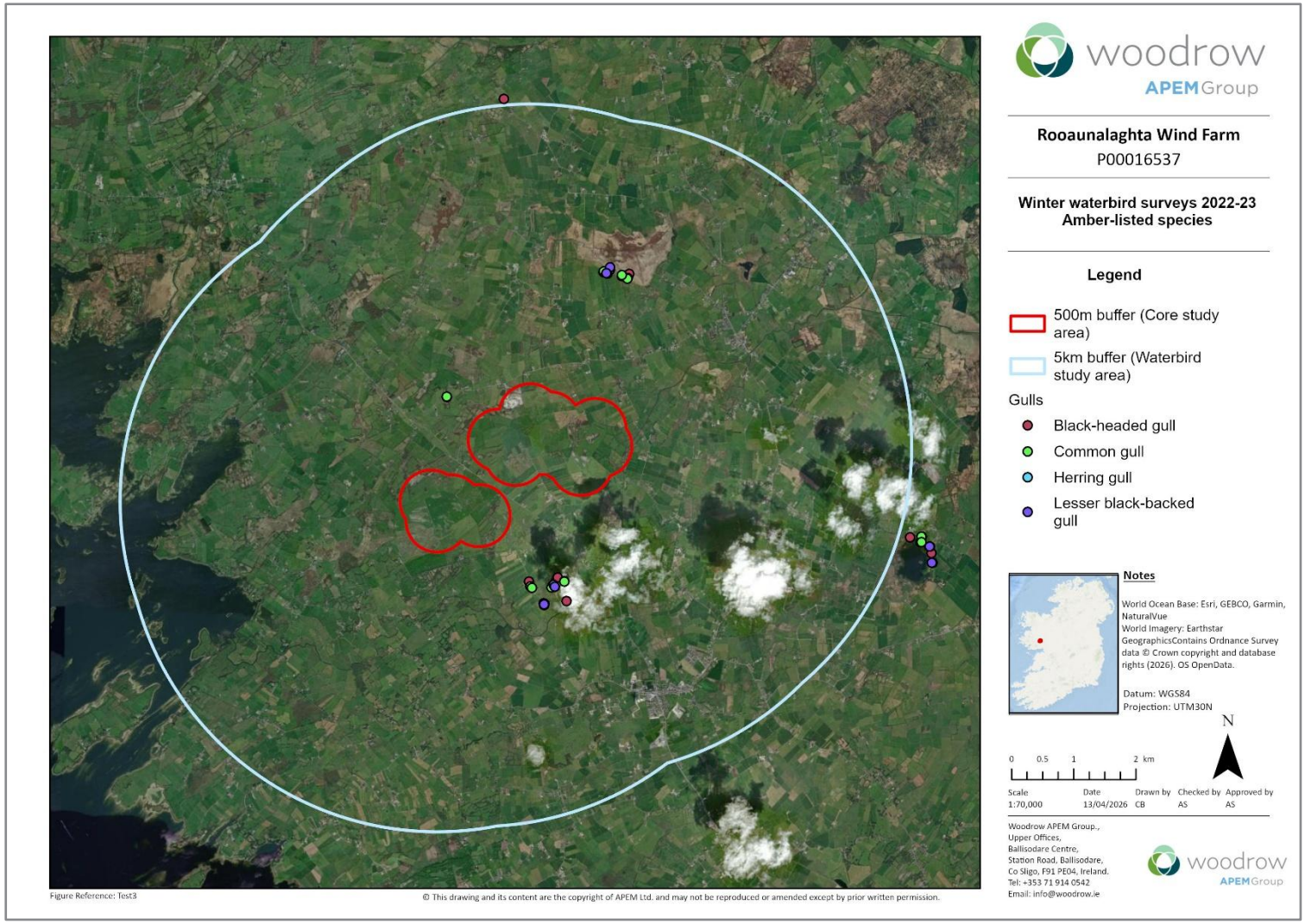


Figure 28. Amber-listed gull species recorded during winter waterbird surveys in Year 1

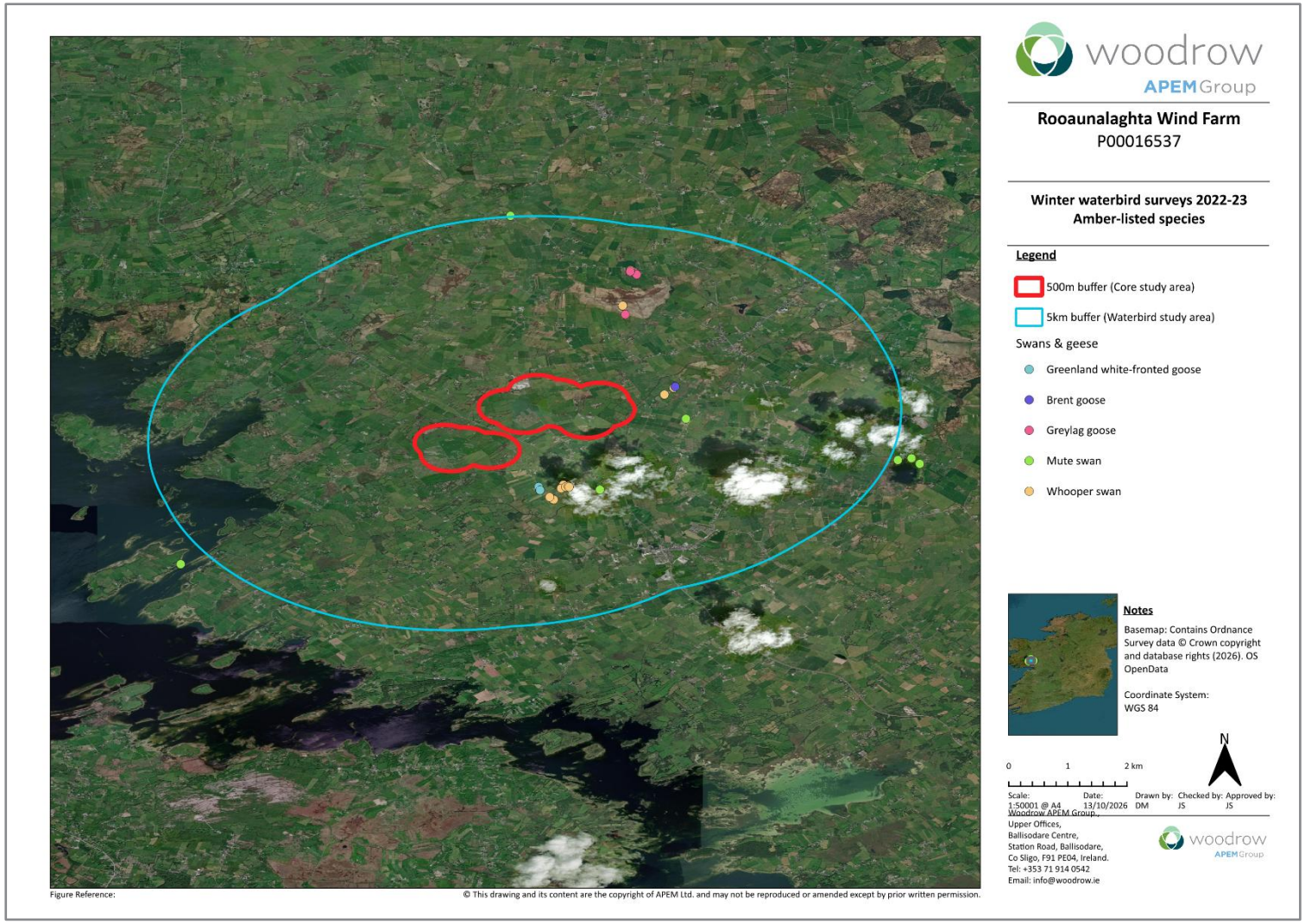


Figure 29. Amber-listed swan & goose species recorded during winter waterbird surveys in Year 1

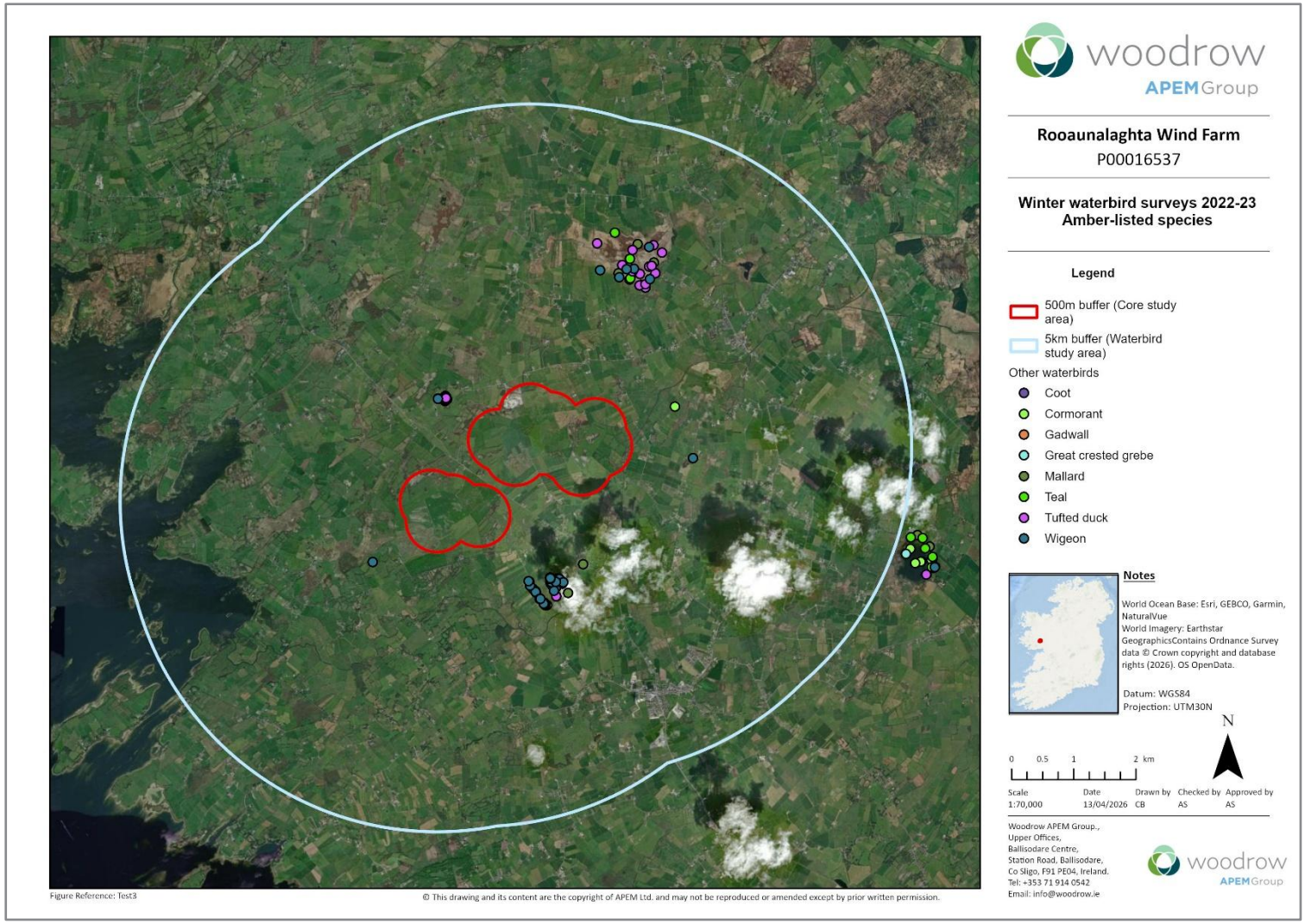


Figure 30. Amber-listed waterbird species recorded during winter waterbird surveys in Year 1

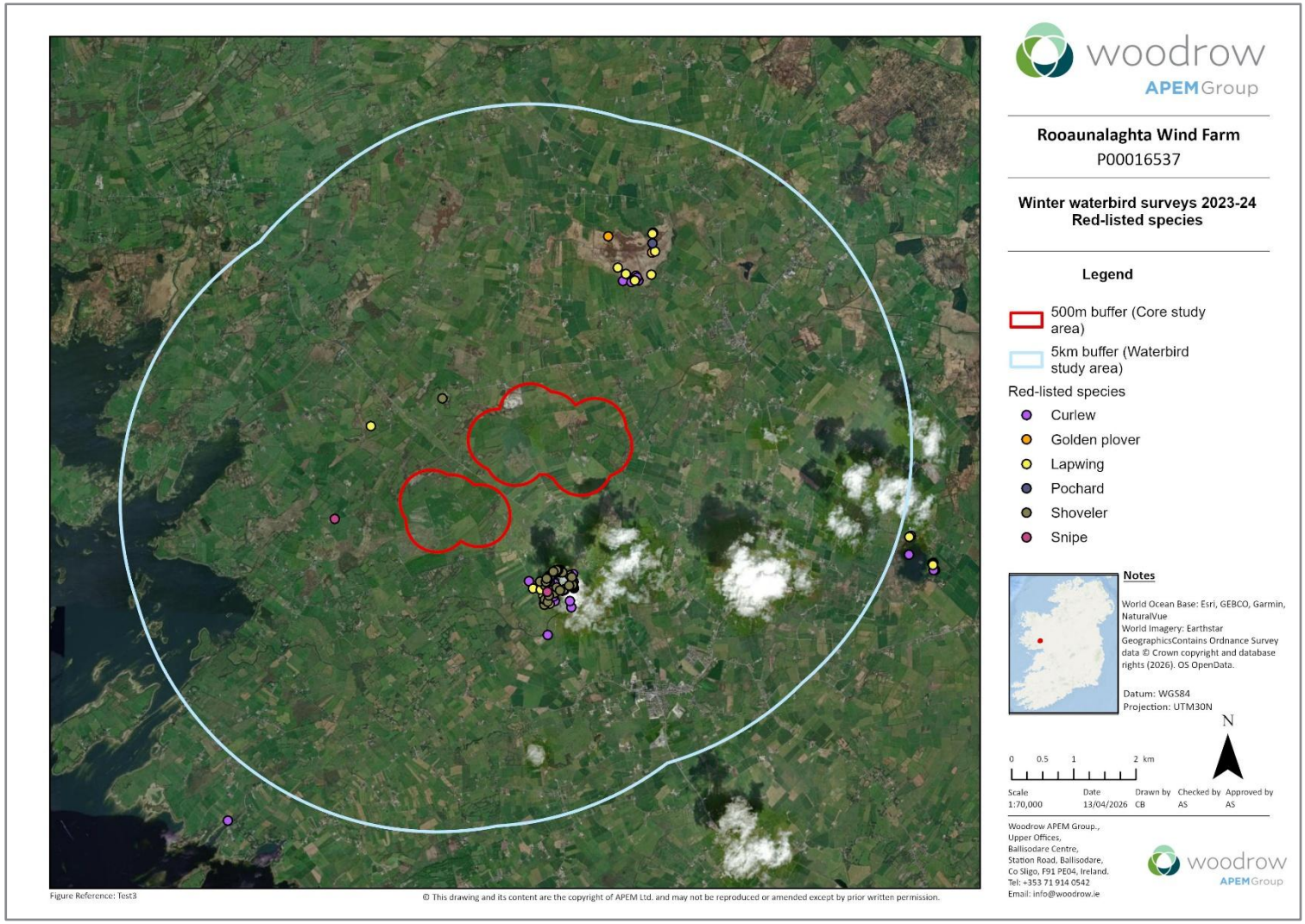


Figure 31. Red-listed species recorded during winter waterbird surveys in Year 2

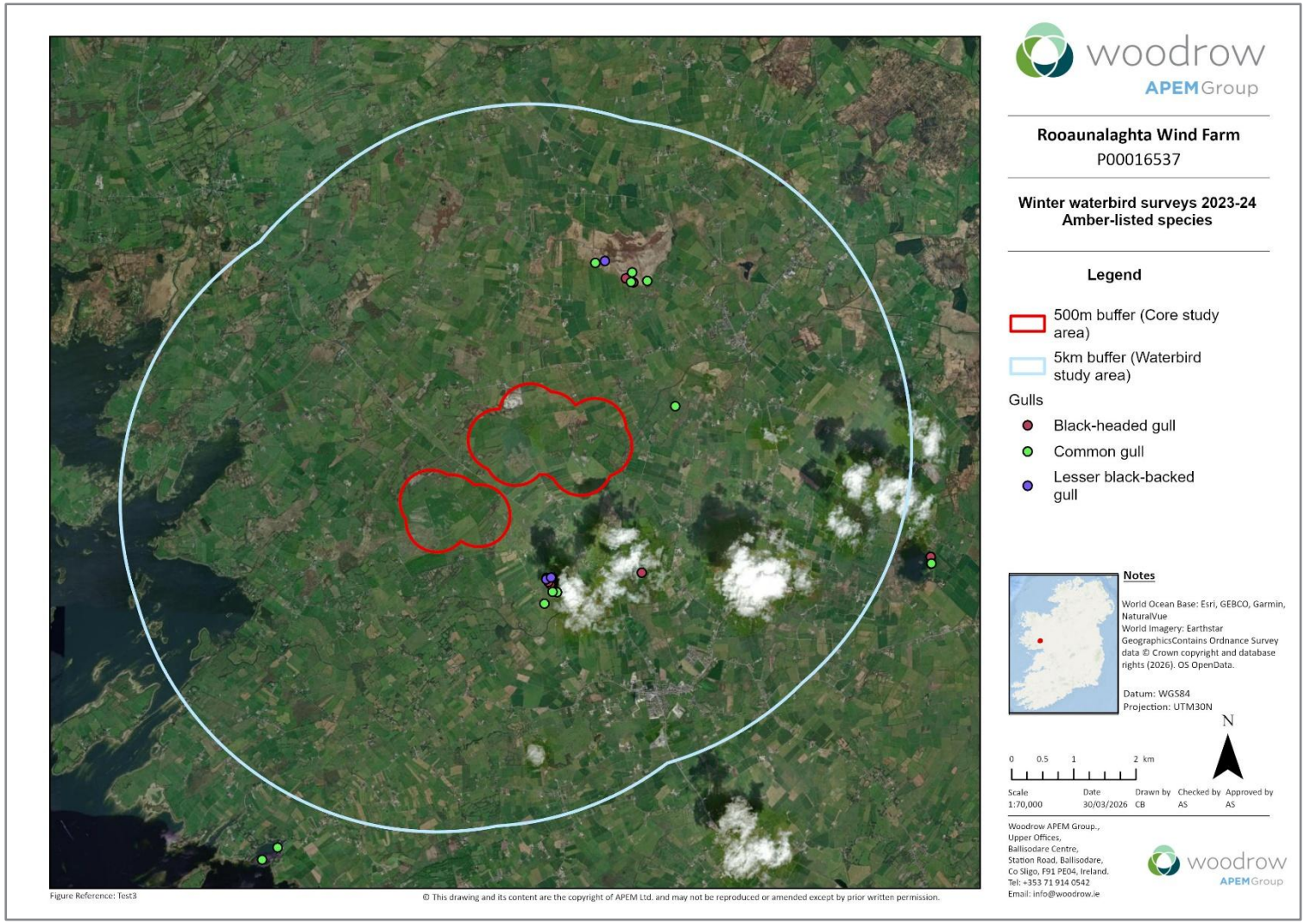


Figure 32. Amber-listed gull species recorded during winter waterbird surveys in Year 2

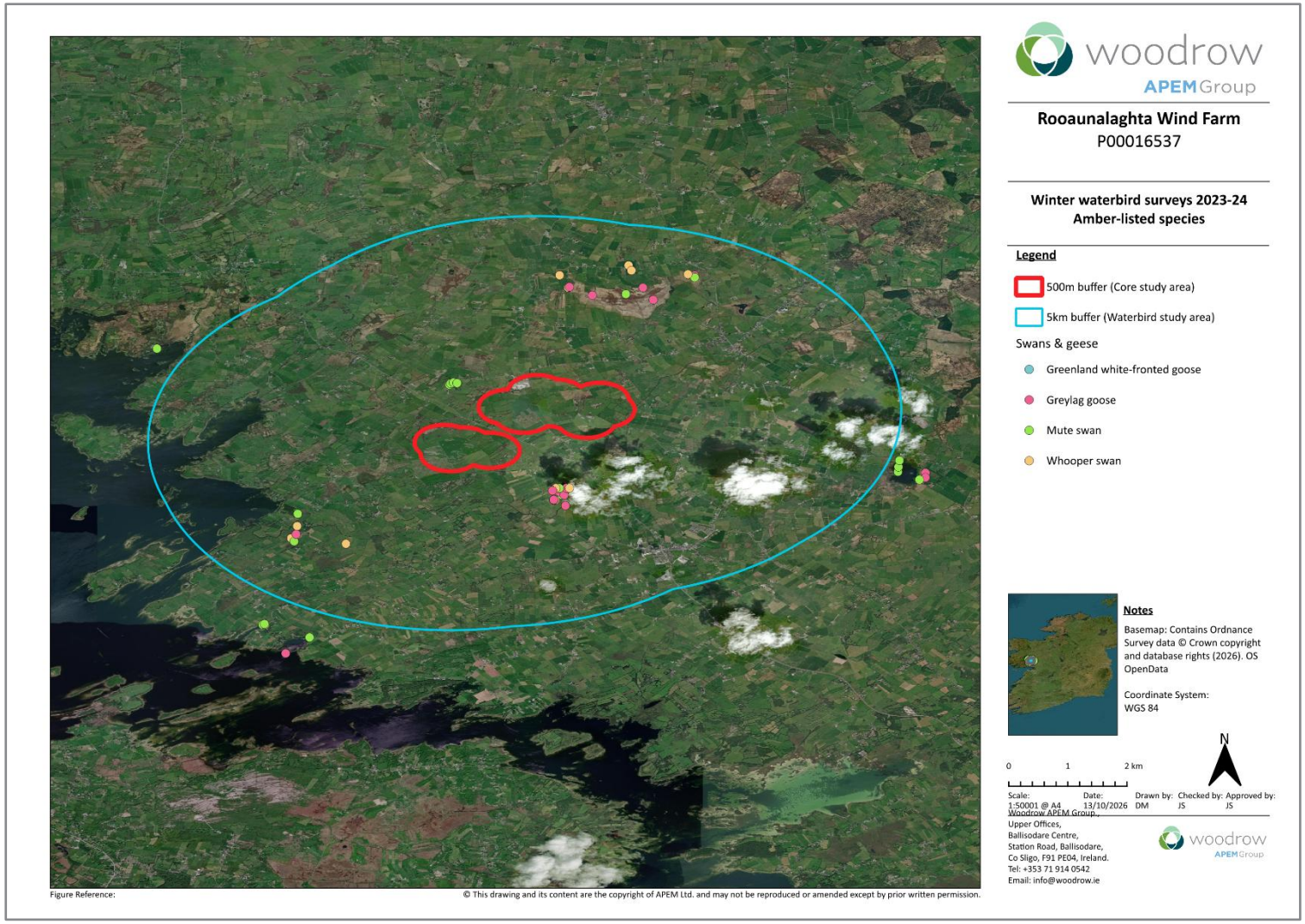


Figure 33. Amber-listed swan & goose species recorded during winter waterbird surveys in Year 2

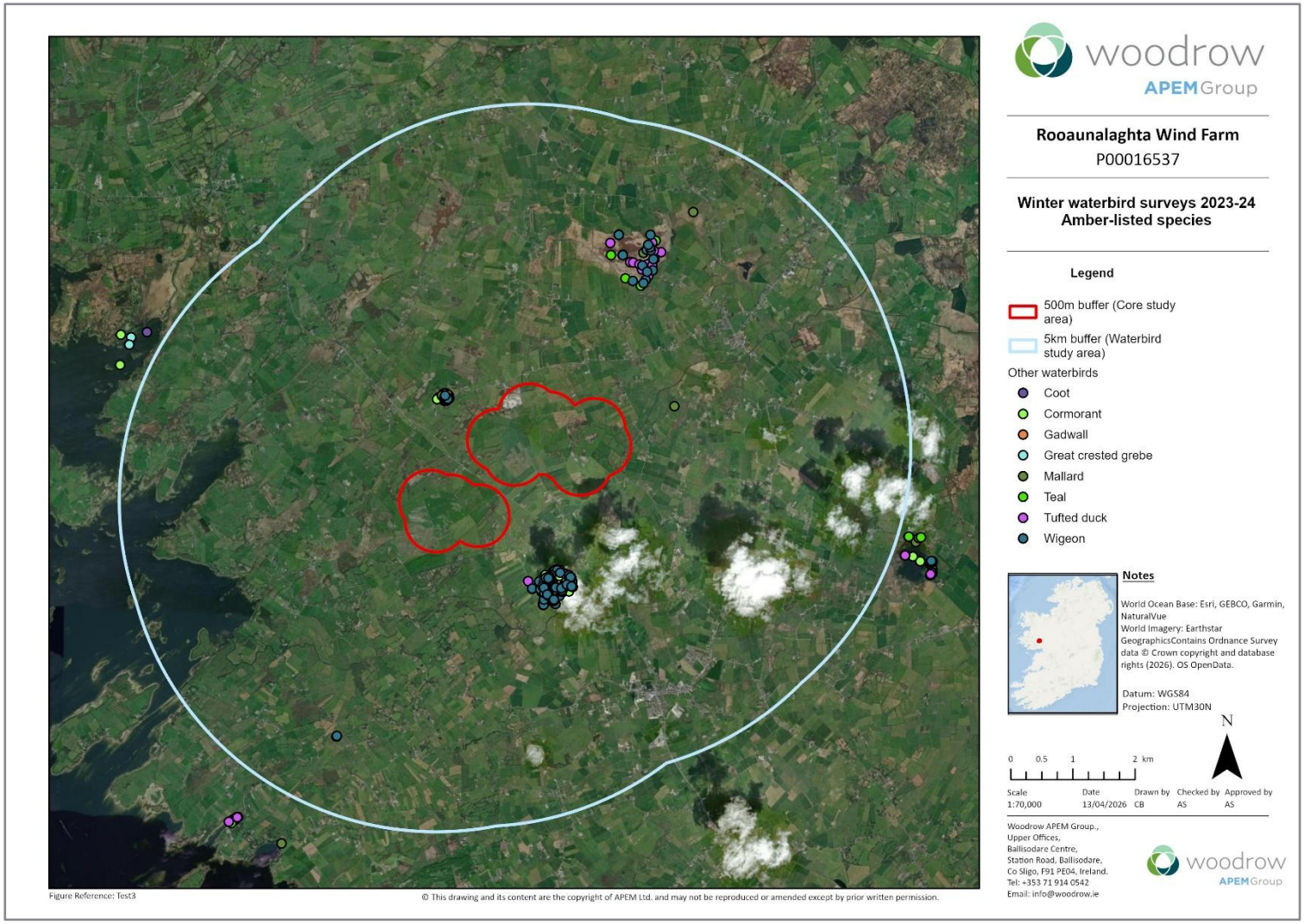


Figure 34. Amber-listed waterbird species recorded during winter waterbird surveys in Year 2

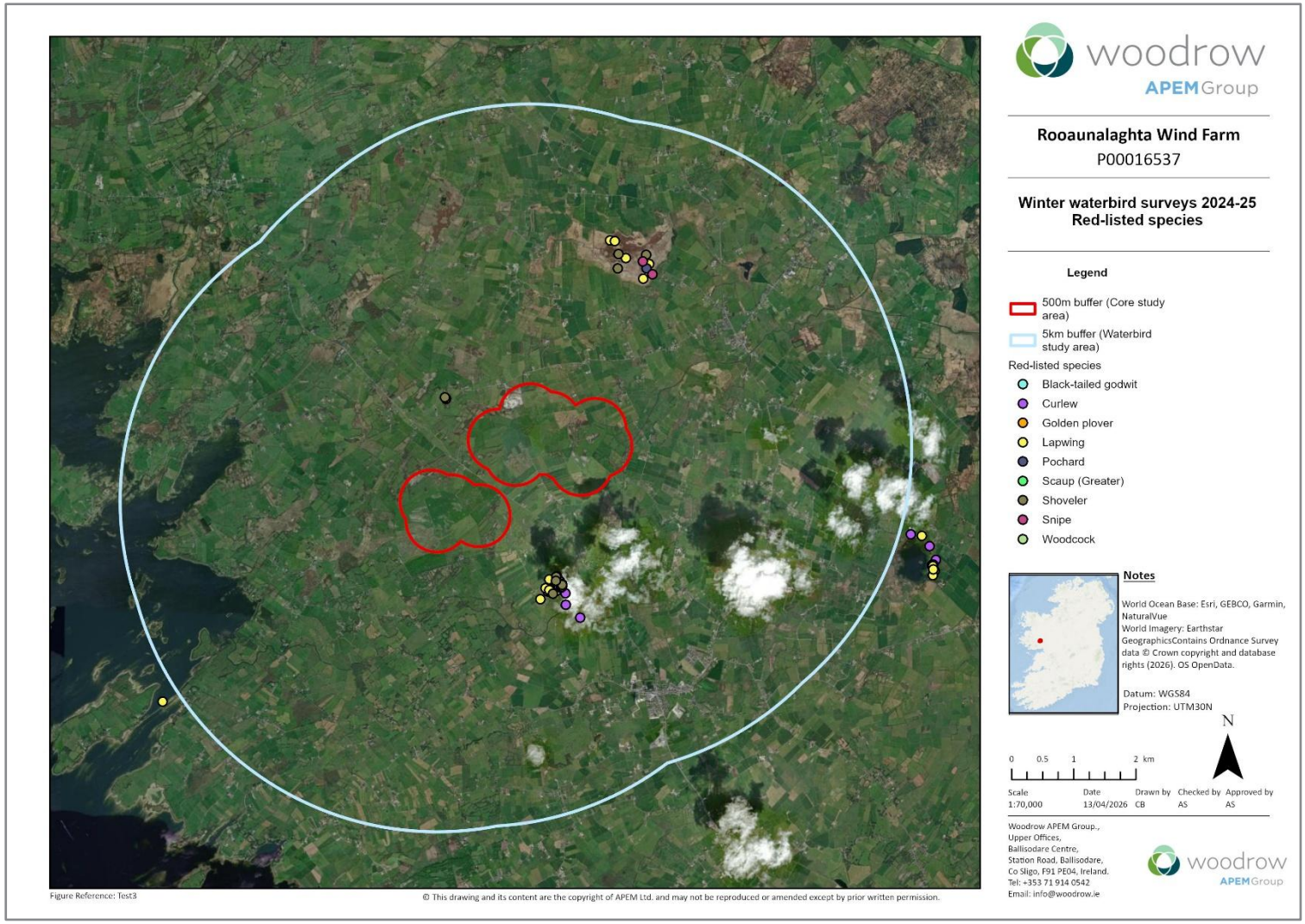


Figure 35. Red-listed species recorded during winter waterbird surveys in Year 3

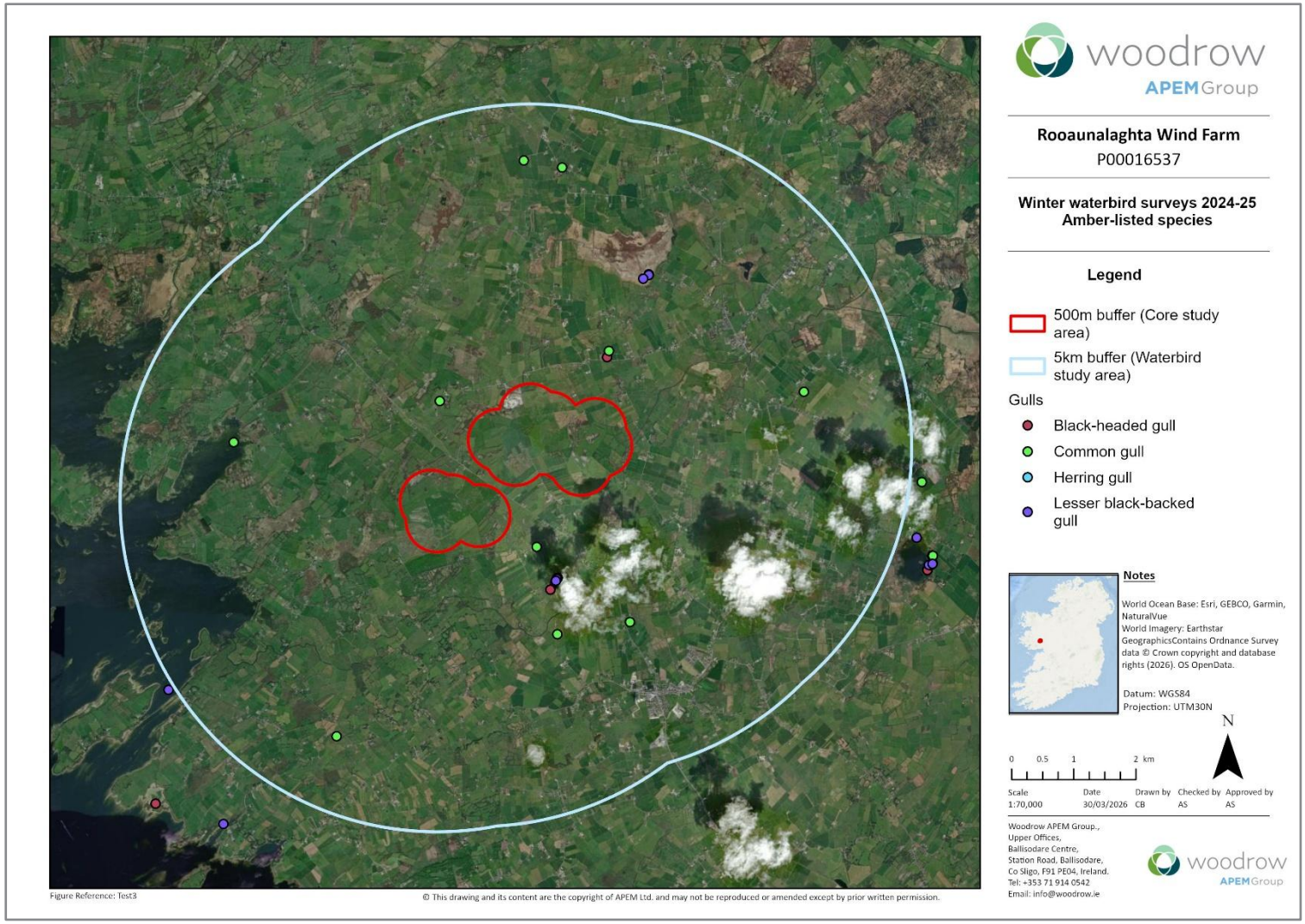


Figure 36. Amber-listed gull species recorded during winter waterbird surveys in Year 3

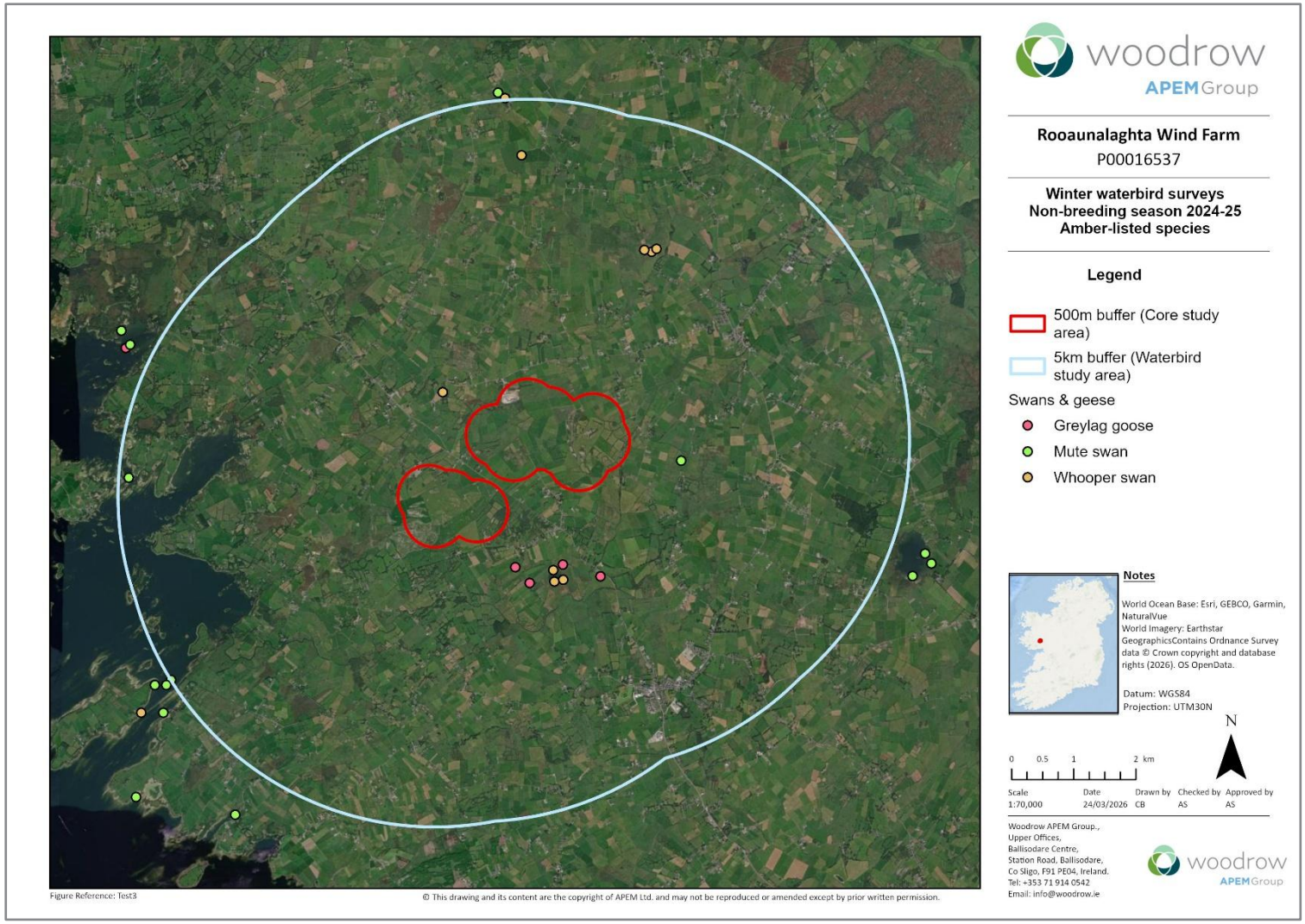


Figure 37. Amber-listed swan and goose species recorded during winter waterbird surveys in Year 3

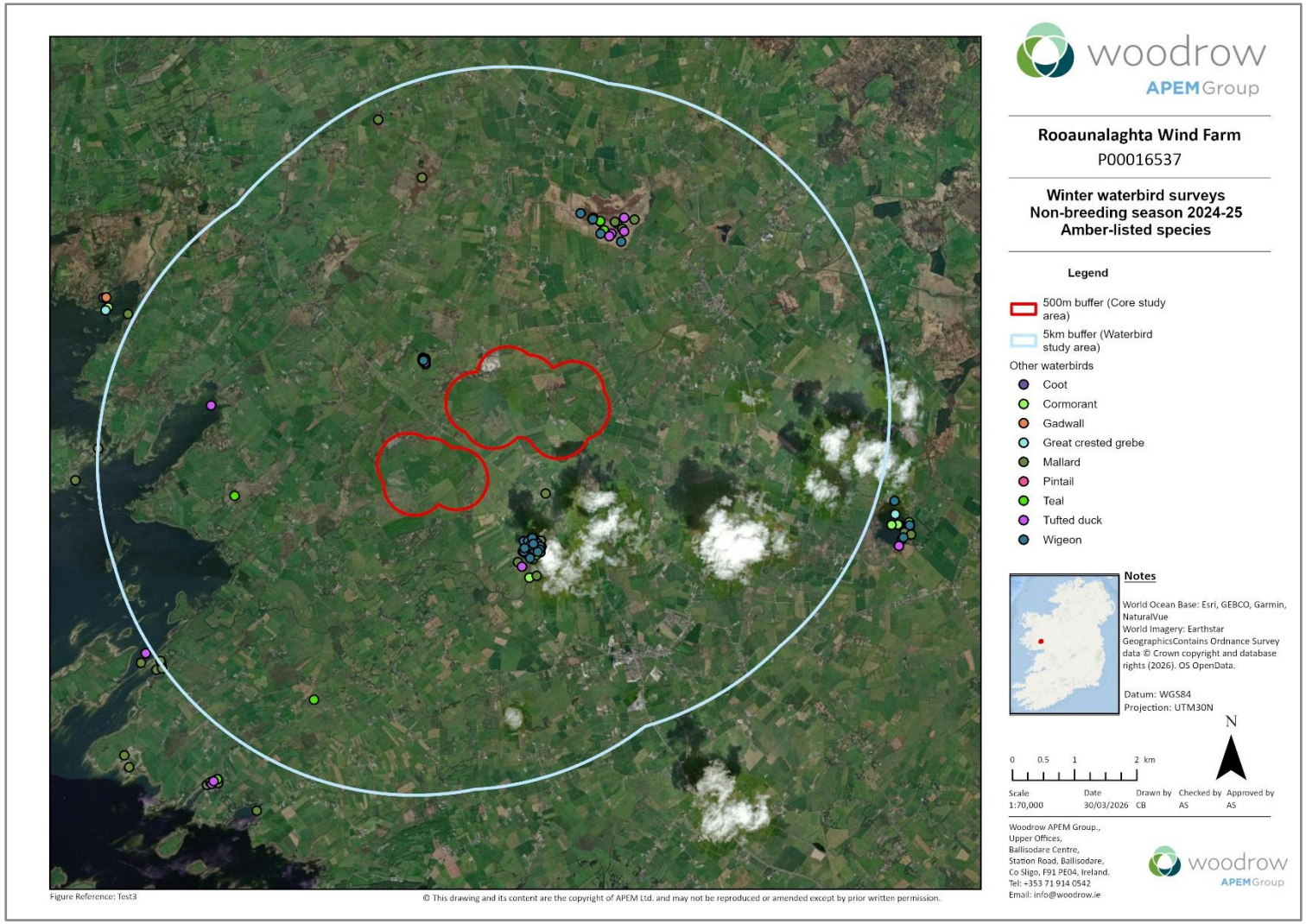


Figure 38. Amber-listed waterbird species recorded during winter waterbird surveys in Year 3

4.6. Hen harrier roost surveys

Hen harrier roost surveys recorded occasional winter flights but identified no roosts within the Raptor Study Area (2 km survey area) during any of the survey years. Bird activity is summarised across three winter season periods:

- Year 1: November 2022–February 2023
- Year 2: November 2023–January 2024
- Year 3: February–March 2025

Survey results are presented in Table 49 and Table 50, with full observations in **Appendix 7-8: Survey Results**.

The recorded flights are considered to represent low-frequency winter foraging and transit behaviour. The absence of roosting activity is consistent with the limited availability of suitable habitat within the survey area and the distribution of known regional roosts elsewhere in the wider Corrib catchment. No suitable hen harrier roosting habitat was identified within the Project Site or raptor study area. However, during the 2023–24 non-breeding season, two observations of a female hen harrier were recorded just south of the raptor study area, in proximity to a known roost site.

During dedicated hen harrier roost surveys in the 2024–25 non-breeding season, a female was recorded approximately 700 m north of the raptor study area, observed flying and subsequently landing in the vicinity of Mocorha Turlough. Additional incidental sightings (see **Appendix 7-8: Survey Results**) of a female hen harrier within 1 km of this location during the same season further indicate the likely presence of a roost site within the wider area.

Table 49. Summary of hen harrier roost survey observations during Year 2 non-breeding season

Date	Time	No. of individuals	Sex	Behaviour
15/11/2023	16:44	1	Female	Flying
15/11/2023	17:00	1	Female	Flying

Table 50. Summary of hen harrier roost survey observations during Year 3 non-breeding season

Date	Time	No. of individuals	Sex	Behaviour
22/02/2025	17:14	1	Female	Fly-land
22/02/2025	17:45	1	Female	Fly-land

4.7. Incidental observations

A total of 26 species were recorded incidentally within the Project Site and the 5 km buffer, including six Red-listed species, 12 Amber-listed species, and two Annex I Green-listed species. A full list of incidental records is provided in **Appendix 7-8: Survey Results**.

Notably, evidence of breeding lapwing was recorded within the Project Site during the 2023 breeding season, with a nesting pair located in the northwest (9.152967 W, 53.5114714 N). The male was observed displaying and alarm-calling in response to a fox, confirming active breeding behaviour.

Four observations of peregrine were recorded at the known breeding site at Kinlough Castle, supporting the likelihood of probable breeding within the Project Site.

Hen harrier was recorded incidentally within the raptor survey area during the non-breeding season, utilising turlough habitats for foraging. A flock of whooper swan, with a maximum count of 15 individuals, was observed at Rostaff Turlough in late March during the 2024 breeding season. While this species is a typical winter visitor, departure for Iceland can occasionally be delayed, explaining the later seasonal record.

Two additional Annex I species not recorded during structured surveys, white-tailed eagle (Red-listed) and short-eared owl (Amber-listed), were observed outside the 5 km buffer at a known hen harrier roost site approximately 19 km south of the Project Site.

Overall, incidental observations provided useful supplementary context on occasional or opportunistic use of the wider landscape, complementing the structured survey results without indicating sustained or concentrated activity within the Project Site.

5. ORNITHOLOGICAL BASELINE

The following sections provide the ornithological baseline for the occurrence of target species in relation to the Project Site. The below sections consolidate the ornithological data collected for target species and the avian assemblages recorded during the survey period October 2022 to September 2025, including all incidental observations of target species across surveys. Where appropriate, the findings from the desk study are included.

5.1. Summary of waterbird assemblage

The following sections on waterbirds detail how each species utilises the Project Site, and importantly, provide context to assessing the overall significance of the wider area for the assemblage of wintering waterbirds.

In summary across all surveys, there have been 40 species of waterbird recorded during the three-year survey period, including 11 Red-listed, 20 Amber-listed and nine Green-listed species, one of which is Annex I listed.

5.1.1. Non-breeding season 2022-23 waterbird summary

VP watches undertaken during the 2022–23 non-breeding season recorded a diverse assemblage of waterbirds and water-associated species, with flight activity dominated by gulls, wildfowl and waders. Black-headed gull, common gull, and lesser and great black-backed gull accounted for the majority of recorded flights, with extended flight times indicating regular commuting between feeding and roosting areas within the wider landscape. Lapwing, curlew, snipe and golden plover were recorded in low to moderate numbers, typically in short-distance movements over agricultural land.

Wildfowl activity comprised mallard, teal, wigeon and tufted duck, alongside small numbers of whooper swan and greylag goose. Most flights occurred at low to moderate heights and represented transit movements rather than sustained aerial use of the Project Site. Little egret was recorded on a single occasion. Overall, VP data indicate regular winter use of the surrounding landscape by waterbirds, reflecting local movement patterns between feeding and roosting areas.

Winter walkover and wintering waterbird surveys undertaken during the same non-breeding season recorded a diverse assemblage of waterbirds within the core study area and the wider waterbird survey area. Red-listed waterbird species included golden plover, redshank, snipe and woodcock, while Amber-listed species were dominated by black-headed gull, common gull and greylag goose. Species composition and abundance were characteristic of improved pastoral farmland with associated wet features, including drainage channels, wet grassland and shallow flooded areas, which supported a range of wintering waders, wildfowl and gulls. Distribution patterns reflected regular use of these habitats for foraging and loafing throughout the season.

Wintering waterbird surveys recorded 34 waterbird species, including six Red-listed and 18 Amber-listed species. Curlew and lapwing were present throughout the season in moderate to large numbers, frequently accompanied by flocks of golden plover. Dabbling and diving ducks were particularly well represented, with high seasonal totals of wigeon (n=1,848), teal (n=474), tufted duck (n=2,040),

mallard and shoveler. Whooper swan was recorded regularly (n=301), alongside greylag goose and mute swan. Greenland white-fronted goose were recorded in both October (n=40) and November (n-118), with birds associated with traditional roost locations away from the Site. There were no records of Greenland white-fronted geese during VP surveys during the 2022-23 non-breeding season. Red-listed pochard and black-tailed godwit were also recorded during the season.

Overall, the 2022–23 non-breeding season indicates moderate to high winter usage of the 5 km study area and surrounding landscape by waterbirds, particularly within wet grasslands, drainage features and shallow flooded areas, with mixed gull flocks occurring widely across the core survey area.

5.1.2. Breeding season 2023 waterbird summary

During the 2023 breeding season, VP watches recorded relatively low levels of waterbird flight activity. Gulls, particularly lesser black-backed gull and black-headed gull, dominated observations, reflecting foraging movements between breeding colonies and feeding areas. Mallard, mute swan and teal were recorded infrequently, typically as short-distance flights.

Breeding bird surveys recorded small numbers of breeding or possibly breeding waterbirds, including mallard and black-headed gull, with no evidence of significant breeding concentrations. Waders were largely absent during the breeding season, and overall waterbird activity was limited, consistent with seasonal dispersal away from inland agricultural habitats.

5.1.3. Non-breeding season 2023-24 waterbird summary

Vantage Point (VP) watches undertaken during the 2023–24 non-breeding season recorded a marked increase in waterbird flight activity compared to 2022–23. Flight activity was dominated by gulls, particularly black-headed gull, common gull, and lesser black-backed gull, with frequent and prolonged flights indicating regular commuting between feeding and roosting areas across the wider landscape. Wader activity included golden plover, lapwing, and curlew, generally in small flocks moving between feeding areas.

Wildfowl diversity increased relative to Year 1, with mallard, teal, wigeon, tufted duck, gadwall, greylag goose and whooper swan were recorded in transit flights, indicating use of the wider landscape rather than site-specific residency. Little egret was recorded on two occasions during the non-breeding season. Overall, VP data reflect higher winter waterbird usage, likely linked to favourable wet ground conditions within the surrounding area.

Winter walkover surveys recorded 66 species, including six Red-listed and 15 Amber-listed species. Red-listed waterbirds included golden plover, snipe, and woodcock, while redshank was absent. Amber-listed species increased by ~36% compared to Year 1, largely due to higher numbers of common gull and additional wetland-associated species including coot, tufted duck, wigeon, and mute swan. Whooper swan was recorded consistently throughout early and mid-winter.

Wintering waterbird surveys recorded 34 species during the 2023-24 non-breeding season, including seven Red-listed and 18 Amber-listed species. Curlew, golden plover, and lapwing occurred in high numbers and were widely distributed. Dabbling ducks showed substantial increases relative to Year 1, with high totals of teal (n=2147), wigeon (n=2763), and mallard (n=818). Diving ducks, particularly tufted duck (n=1490), remained abundant. Greylag goose (n=895) and whooper swan (n=308) were recorded regularly. Greenland white-fronted goose were recorded in October (n=92) during wetland

bird surveys, with birds associated with traditional roost locations away from the Site. There were two records of Greenland white-fronted geese in flight seen during VP surveys. Flocks of 16 and 6 were seen within the Core Survey Area.

Overall, the 2023–24 non-breeding season reflected pronounced waterbird activity, particularly among dabbling ducks and wintering gulls. Wet grasslands, shallow flooded areas, and drainage features were used extensively for foraging and loafing, resulting in the highest combined waterbird abundance of the three survey years.

5.1.4. Breeding season 2024 waterbird summary

During the 2024 breeding season, VP watches recorded continued but moderate levels of waterbird activity. Lesser black-backed gull remained the most frequently observed species, with sustained flight times suggesting regular foraging movements. Black-headed gull, herring gull and common gull were also recorded.

Breeding bird surveys identified limited breeding activity by water-associated species, including mallard, black-headed gull and lesser black-backed gull. No significant breeding wader populations were identified, though isolated records of lapwing and golden plover were noted during VP watches. Overall, waterbird use during the breeding season remained low and opportunistic, with no indication of key breeding habitats within the core survey area.

5.1.5. Non-breeding season 2024-25 waterbird summary

The 2024–25 non-breeding season recorded the highest level of waterbird flight activity across the three survey years. VP watches documented very high numbers and extended flight times for black-headed gull, common gull, and lesser black-backed gull, reflecting frequent commuting between feeding and roosting areas within the wider landscape. Wader activity also increased compared to previous seasons, with regular records of lapwing, golden plover, curlew, and snipe, including several larger flock movements.

Wildfowl were well represented during VP watches, including mallard, teal, wigeon, tufted duck, greylag goose, and whooper swan, with some larger flocks recorded in transit flights. Little egret and great egret were observed occasionally. Overall, VP data indicate extensive winter use of the surrounding landscape by waterbirds, consistent with highly favourable wintering conditions.

Winter walkover surveys recorded the highest waterbird species richness of the three years, with 11 Red-listed and 16 Amber-listed species, as well as one Annex I species (little egret). Notable additions to the Red-listed waterbird assemblage included curlew and shoveler. Large numbers of waders and gulls were observed throughout the season, particularly lapwing, golden plover, and snipe. Dabbling and diving ducks were abundant, including mallard, teal, wigeon, tufted duck, shoveler, greylag goose, mute swan, and whooper swan, with some larger flocks recorded in transit. The consistent presence of whooper swan and occasional sightings of little egret indicate widespread use of wet grasslands, shallow pools, drainage features, and flooded field margins.

Wintering waterbird surveys recorded 33 species during the 2024-25 non-breeding season, including eight Red-listed and 17 Amber-listed species. Lapwing and golden plover remained abundant, with peak lapwing counts exceeding 1,200 individuals, while curlew was consistently recorded throughout the season. Black-tailed godwit occurred on multiple visits. Very large numbers of black-headed gull

(n=2,058), common gull (n=3,494), wigeon (n=1,043), teal, tufted duck, and mute swan were recorded. Whooper swan numbers increased further compared to previous seasons (n=129), with occasional records of woodcock and little egret. There were no records of Greenland white-fronted goose during the wintering waterbird surveys, and a single record of 17 birds in flight during VP surveys, within the Core Survey Area.

Overall, the 2024–25 non-breeding season represents a high-activity winter period for waterbirds, characterised by extensive foraging and loafing across the wider landscape. The increased species richness and abundance observed across VP watches, winter walkover surveys, and wintering waterbird surveys indicate highly favourable habitat conditions and winter weather for waterbirds during this period.

5.1.6. Breeding season 2025 waterbird summary

VP watches during the 2025 breeding season recorded relatively low levels of waterbird activity, similar to previous breeding seasons. Lesser black-backed gull and black-headed gull again dominated records, with shorter flight durations compared to non-breeding periods. Mallard, teal and occasional lapwing flights were recorded at low frequency.

Breeding bird surveys recorded limited breeding or probable breeding activity by water-associated species, including mallard, gulls and occasional teal. No breeding concentrations of waders were identified, and overall waterbird presence was sparse. The results indicate that the Project Site and its immediate surroundings are of limited importance for breeding waterbirds, with use largely confined to foraging movements and transient activity.

5.2. Summary of raptor assemblage

Breeding raptor surveys over the three-year period recorded low to moderate activity, dominated by buzzard, kestrel, and peregrine.

Non-breeding season surveys for hen harrier (2023–24 and 2024–25) recorded occasional females in flight near the study area, but no suitable roosting habitat or regular roosting was identified within the raptor study area.

Overall, the data indicates continued use of the wider landscape by breeding raptors, with possible breeding by buzzard and peregrine, probable breeding by kestrel in 2024, and only sporadic use of the area by hen harrier outside the breeding season.

5.2.1. Breeding season 2023 raptor summary

Breeding raptor surveys in 2023 recorded low to moderate raptor activity, dominated by buzzard, peregrine and kestrel. Buzzard activity suggested possible breeding within the Project Site, with repeated observations of individuals and a pair between late March and mid-May, including behaviour indicative of pair bonding. Peregrine was recorded in association with the known breeding site at Kinlough Castle, where separate observations of male and female birds in late March indicate possible breeding.

Kestrel, a BoCCI Red-listed species, was recorded only once during the breeding raptor surveys, when a single individual was observed being mobbed by hooded crows in mid-May. No breeding behaviour was recorded for this species during the season. Sparrowhawk was not recorded.

Overall, breeding raptor activity in 2023 was limited, with possible breeding by buzzard and peregrine within or adjacent to the Project Site, and no confirmed breeding by other raptor species.

5.2.2. Breeding season 2024 raptor summary

Breeding raptor surveys in 2024 recorded a notable increase in raptor activity, particularly for kestrel, buzzard and peregrine. Buzzard was frequently recorded throughout the season, with two birds observed together in late March and courtship behaviour recorded within the wider 2 km survey area in late April, indicating possible breeding. Subsequent records primarily involved single birds using the area for foraging.

Kestrel activity increased markedly compared to 2023, with 1–2 individuals recorded on 11 occasions between April and July. Early-season behaviour and frequent foraging within the Project Site suggest probable breeding in the wider surrounding area, although no nest or fledglings were located.

Peregrine was recorded regularly in April and May, with repeated observations of birds associating with the known breeding site at Kinlough Castle, again indicating possible breeding. Sparrowhawk was recorded once during mid-May, when a single individual was observed hunting; no breeding behaviour was noted.

Overall, the 2024 breeding season indicates heightened raptor activity, with possible breeding by buzzard and peregrine and probable breeding by kestrel in the wider landscape.

5.2.3. Breeding season 2025 raptor summary

Breeding raptor surveys in 2025 recorded moderate raptor activity, again dominated by buzzard, kestrel and peregrine, although at lower levels than in 2024. Buzzard was recorded regularly between late March and late July, with single birds observed on multiple occasions and three birds soaring together in early July. This pattern suggests possible breeding in the wider area, although no nest or juvenile birds were recorded.

Kestrel was recorded on five occasions between April and July, with all observations involving single individuals and no evidence of breeding behaviour. Peregrine was recorded once in late May, when a calling individual, likely a female, was heard from the direction of the known breeding site at Kinlough Castle before soaring out of sight, consistent with possible continued breeding at this established location.

Sparrowhawk was recorded three times, with singles observed in low-level hunting flight in late March and again in late July when a group of four recently fledged birds were also observed.

Overall, breeding raptor surveys in 2025 indicate continued low to moderate raptor use, with possible breeding by buzzard and peregrine within the wider area and confirmed breeding by sparrowhawk.

5.2.4. Non-breeding season hen harrier summary

During the 2023–24 and 2024–25 non-breeding seasons, no suitable hen harrier roosting habitat was identified within the raptor study area. In 2023–24, two observations of a female hen harrier were recorded just south of the study area in November 2023, in proximity to a known roost site. Both records involved birds in late-afternoon flight, with no confirmed roosting behaviour observed within the study area.

Similarly, dedicated hen harrier roost surveys undertaken during the 2024–25 non-breeding season recorded a female approximately 700 m north of the raptor study area, observed flying and landing in the vicinity of Mocorha Turlough in February 2025. Additional incidental sightings of a female hen harrier within 1 km of this location during the same season suggest the presence of a possible roost site in the wider surrounding area, although no roost was confirmed within the study area boundary.

Overall, data from both non-breeding seasons indicate sporadic use of the wider landscape by hen harrier, with no evidence of regular roosting or functional dependence on habitats within the raptor study area.

5.3. Summary of passerine assemblage

The study area supported a diverse assemblage of passerines across both the breeding and non-breeding seasons. Red-listed species including meadow pipit were frequently recorded, with the species often abundant, while other Red-listed species such as grey wagtail were recorded regularly but in low numbers. Yellowhammer, also Red-listed, was recorded infrequently, with only a small number of records during the survey period. Redwing, an Amber-listed winter visitor, was regularly recorded during the non-breeding season and was often locally abundant.

Amber-listed species including starling, linnet, skylark, and house sparrow were widespread and frequently observed, with several species forming large flocks during winter. Passerine distribution reflected habitat availability, with open grasslands, hedgerows, field margins, and scattered scrub providing key foraging, roosting, and nesting habitats.

During the breeding season, summer visitors such as willow warbler were present, contributing to overall species richness. Overall, passerines formed a prominent component of the avian community throughout the survey period, reflecting regular use of the farmland and wet grassland mosaic across the wider landscape.

6. CONCLUSION

Three years of ornithological baseline surveys confirm that the Project Site supports a diverse but regionally typical assemblage of farmland and wetland birds. Across the three breeding seasons, 76 species were recorded within the Core Study Area, while vantage point watches documented 37 target species. These datasets show consistent use of the site by widespread passerines such as meadow pipit, skylark, willow warbler, linnet and starling, many of which exhibited probable breeding behaviour.

Raptor activity within and around the Project Site was generally low. Buzzard, kestrel and peregrine were observed regularly, although no confirmed nesting territories were identified within the site during any of the three years of surveys. Occasional records of Annex I raptors such as hen harrier and merlin were limited to transient individuals passing through the area, consistent with the lack of suitable breeding habitat.

Wader activity was also low, consistent with habitat quality. Golden plover was recorded only occasionally and primarily as a passage/winter visitor, with no evidence of breeding. Curlew and snipe were detected sporadically but without confirmation of breeding, which aligns with the site's limited extent of suitable wet grassland or bogland habitat.

Winter waterbird use of the Project Site itself was limited, although nearby wetlands, including Rostaff Turlough, Lough Corrib, Lough Hacket and Shrule Turlough, supported regionally and nationally important numbers of species such as whooper swan, shoveler, greylag goose, mute swan, tufted duck and coot. These areas form part of a wider wetland network supporting significant waterbird populations, but functional linkage to the Project Site was weak, with most observations involving fly-overs rather than on-site foraging or roosting.

Across all species groups, the Project Site is assessed as being of generally low suitability for high-sensitivity species. Habitat within the site is dominated by farmland, scrub and improved grassland, supporting mostly widespread and adaptable species. No evidence was found of breeding by Annex I species such as curlew, hen harrier, merlin or barn owl.

Overall, the three-year dataset is comprehensive and robust, meeting and in many cases exceeding recommended survey effort under NatureScot (2025) guidance. The information collected is considered fully sufficient to inform collision-risk modelling, displacement assessments and the ornithological impact assessment in EIAR Chapter 7.

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APPENDIX A: NBDC AND I-WEBS RECORDS

Table A-1: NBDC and I-WeBS bird records for target species within the 10 km national grid squares M24 and M25

Common Name[32]	Scientific Name	EU Birds Directive	BoCCI4 status[33]	Date of last record	Data source
American wigeon	*Mareca americana*		N/A	1998	NBDC
Black swan	*Cygnus atratus*		N/A	2018	I-WeBS
Canada goose	*Branta canadensis*		N/A	2001	NBDC
Great white egret	*Ardea alba*		N/A	2017	I-WeBS
Greylag goose (domestic)	*Anser anser*		N/A	2015	I-WeBS
Ruddy duck	*Oxyura jamaicensis*		N/A	2001	NBDC
Unidentified duck	*Anatinae sp*		N/A	2019	I-WeBS
Bar-tailed godwit	*Limosa lapponica*	Annex I	Red Win	2021	I-WeBS
Barn owl	*Tyto alba*		Red Br	2024	NBDC
Black-tailed godwit	*Limosa limosa*		Red Win	2024	I-WeBS
Bewick's swan	*Cygnus columbianus*	Annex I	Red Win	2004	I-WeBS
Curlew	*Numenius arquata*		Red Br&Win	2024	I-WeBS
Corncrake	*Crex crex*	Annex I	Red Br	1972	NBDC

[32] Species are listed alphabetically by conservation status.

[33] The BOCCI4 column refers to whether conservation concern status applies to wintering (Win) or breeding (Br) populations.

Common Name[32]	Scientific Name	EU Birds Directive	BoCCI4 status[33]	Date of last record	Data source
Dunlin	*Calidris alpina*	Annex I	Red Br&Win	2023	I-WeBS
Golden plover	*Pluvialis apricaria*	Annex I	Red Br&Win	2024	I-WeBS
Goldeneye	*Bucephala clangula*		Red Win	2024	I-WeBS
Grey partridge	*Perdix perdix*		Red Br	1972	NBDC
Grey plover	*Pluvialis squatarola*		Red Win	2001	NBDC
Grey wagtail	*Motacilla cinerea*		Red Br	2023	NBDC
Kestrel	*Falco tinnunculus*		Red Br	2023	NBDC
Lapwing	*Vanellus vanellus*		Red Br&Win	2024	I-WeBS
Long-tailed duck	*Clangula hyemalis*		Red Win	2001	NBDC
Meadow pipit	*Anthus pratensis*		Red Br	2021	NBDC
Oystercatcher	*Haematopus ostralegus*		Red Br&Win	2022	I-WeBS
Pochard	*Aythya ferina*		Red Br&Win	2023	I-WeBS
Quail	*Coturnix coturnix*		Red Br	1972	NBDC
Redshank	*Tringa tetanus*		Red Br&Win	2024	I-WeBS
Redwing	*Turdus iliacus*		Red Win	2020	NBDC
Scaup	*Anas marila*		Red Win	2020	I-WeBS
Shoveler	*Spatula clypeata*		Red Br&Win	2024	I-WeBS

Common Name[32]	Scientific Name	EU Birds Directive	BoCCI4 status[33]	Date of last record	Data source
Slavonian grebe	*Podiceps auritus*	Annex I	Red Win	2018	I-WeBS
Snipe	*Gallinago gallinago*		Red Br&Win	2024	I-WeBS
Stock dove	*Columba oenas*		Red Br	1991	NBDC
Swift	*Apus apus*		Red Br	2024	NBDC
Whinchat	*Saxicola rubetra*		Red Br	1972	NBDC
Woodcock	*Scolopax rusticola*		Red Br	2023	NBDC
Yellowhammer	*Emberiza citrinella*		Red Br	2014	NBDC
Arctic tern	*Sterna paradisaea*	Annex I	Amber Br	1991	NBDC
Barnacle goose	*Branta leucopsis*	Annex I	Amber Win	2024	I-WeBS
Black tern	*Chlidonias niger*	Annex I	Amber Pa	2001	NBDC
Black-headed gull	*Chroicocephalus ridibundus*		Amber Br&Win	2024	I-WeBS
Brambling	*Fringilla montifringilla*		Amber Win	2011	NBDC
Brent goose	*Branta bernicla*		Amber Win	2023	I-WeBS
Common gull	*Larus canus*		Amber Br&Win	2024	I-WeBS
Common sandpiper	*Actitis hypoleucos*		Amber Br	2016	NBDC
Common tern	*Sterna hirundo*	Annex I	Amber Br	2011	NBDC
Coot	*Fulica atra*		Amber Br&Win	2024	I-WeBS

Common Name[32]	Scientific Name	EU Birds Directive	BoCCI4 status[33]	Date of last record	Data source
Cormorant	*Phalacrocorax carbo*		Amber Br&Win	2024	I-WeBS
Teal	*Anas crecca*		Amber Br&Win	2024	I-WeBS
Wigeon	*Mareca penelope*		Amber Br&Win	2024	I-WeBS
Gadwall	*Mareca strepera*		Amber Br&Win	2024	I-WeBS
Goldcrest	*Regulus regulus*		Amber Br	2022	NBDC
Great crested grebe	*Podiceps cristatus*		Amber Br&Win	2024	I-WeBS
Great northern diver	*Gavia immer*	Annex I	Amber Win	2021	I-WeBS
Greenfinch	*Chloris chloris*		Amber Br	2023	NBDC
Greenland white-fronted goose	*Anser albifrons flavirostris*	Annex I	Amber Win	2024	I-WeBS
Greylag goose	*Anser anser*		Amber Win	2024	I-WeBS
Hen harrier	*Circus cyaneus*	Annex I	Amber Br	2013	NBDC
Herring gull	*Larus argentatus*		Amber Br&Win	2024	I-WeBS
House martin	*Delichon urbicum*		Amber Br	2021	NBDC
House sparrow	*Passer domesticus*		Amber Br	2023	NBDC
Kingfisher	*Alcedo atthis*	Annex I	Amber Br	2019	NBDC
Lesser black-backed gull	*Larus fuscus*		Amber Br&Win	2023	I-WeBS
Linnet	*Linaria cannabina*		Amber Br	2023	NBDC

Common Name[32]	Scientific Name	EU Birds Directive	BoCCI4 status[33]	Date of last record	Data source
Mallard	*Anas platyrhynchos*		Amber Br&Win	2024	I-WeBS
Marsh harrier	*Circus aeruginosus*	Annex I	Amber Br	2011	NBDC
Merlin	*Falco columbarius*	Annex I	Amber Br	2011	NBDC
Mute swan	*Cygnus olor*		Amber Br&Win	2024	I-WeBS
Pintail	*Anas acuta*		Amber Win	2017	I-WeBS
Red-breasted merganser	*Mergus serrator*		Amber Br&Win	2024	I-WeBS
Red-throated diver	*Gavia stellata*	Annex I	Amber Br&Win	2001	NBDC
Ringed plover	*Charadrius hiaticula*		Amber Br&Win	2016	I-WeBS
Ruff	*Calidris pugnax*		Amber Pa	2001	NBDC
Sand martin	*Riparia riparia*		Amber Br	2023	NBDC
Shelduck	*Tadorna tadorna*		Amber Br&Win	2020	I-WeBS
Short-eared owl	*Asio flammeus*	Annex I	Amber Br	2017	NBDC
Skylark	*Alauda arvensis*		Amber Br	2023	NBDC
Smew	*Mergellus albellus*	Annex I	Amber Win	2022	I-WeBS
Spotted flycatcher	*Muscicapa striata*		Amber Br	2019	NBDC
Spotted redshank	*Tringa erythropus*		Amber Pa	2001	I-WeBS
Starling	*Sturnus vulgaris*		Amber Br	2023	NBDC

Common Name[32]	Scientific Name	EU Birds Directive	BoCCI4 status[33]	Date of last record	Data source
Swallow	*Hirundo rustica*		Amber Br	2023	NBDC
Tree sparrow	*Passer montanus*		Amber Br	2018	NBDC
Tufted duck	*Aythya fuligula*		Amber Br&Win	2024	I-WeBS
Wheatear	*Oenanthe oenanthe*		Amber Br	2011	NBDC
Whooper swan	*Cygnus cygnus*	Annex I	Amber Br&Win	2024	I-WeBS
Willow warbler	*Phylloscopus trochilus*		Amber Br	2022	NBDC
Blackbird	*Turdus merula*		Green	2023	NBDC
Blackcap	*Sylvia atricapilla*		Green	2022	NBDC
Blue tit	*Cyanistes caeruleus*		Green	2023	NBDC
Bullfinch	*Pyrrhula pyrrhula*		Green	2023	NBDC
Buzzard	*Buteo buteo*		Green	2024	NBDC
Chaffinch	*Fringilla coelebs*		Green	2023	NBDC
Chiffchaff	*Phylloscopus collybita*		Green	2011	NBDC
Coal tit	*Periparus ater*		Green	2023	NBDC
Collared dove	*Streptopelia decaocto*		Green	2023	NBDC
Cuckoo	*Cuculus canorus*		Green	2023	NBDC
Dunnock	*Prunella modularis*		Green	2023	NBDC

Common Name[32]	Scientific Name	EU Birds Directive	BoCCI4 status[33]	Date of last record	Data source
Fieldfare	*Turdus pilaris*		Green	2011	NBDC
Glaucous gull	*Larus hyperboreus*		Green	2019	I-WeBS
Goldfinch	*Carduelis carduelis*		Green	2023	NBDC
Grasshopper warbler	*Locustella naevia*		Green	2011	NBDC
Great black-backed gull	*Larus marinus*		Green	2024	I-WeBS
Great tit	*Parus major*		Green	2023	NBDC
Greenshank	*Tringa nebularia*		Green	2017	I-WeBS
Grey heron	*Ardea cinerea*		Green	2024	I-WeBS
Hooded crow	*Corvus cornix*		Green	2023	NBDC
Jack snipe	*Lymnocryptes minimus*		Green	2018	NBDC
Jackdaw	*Corvus monedula*		Green	2023	NBDC
Jay	*Garrulus glandarius*		Green	2022	NBDC
Lesser redpoll	*Carduelis flammea / cabaret*		Green	2013	NBDC
Little egret	*Egretta garzetta*	Annex I	Green	2024	I-WeBS
Little grebe	*Tachybaptus ruficollis*		Green	2024	I-WeBS
Little stint	*Calidris minuta*		Green	2001	NBDC
Long-eared owl	*Asio otus*		Green	2024	NBDC

Common Name[32]	Scientific Name	EU Birds Directive	BoCCI4 status[33]	Date of last record	Data source
Long-tailed tit	*Aegithalos caudatus*		Green	2021	NBDC
Magpie	*Pica pica*		Green	2023	NBDC
Mistle thrush	*Turdus viscivorus*		Green	2018	NBDC
Moorhen	*Gallinula chloropus*		Green	2024	I-WeBS
Peregrine	*Falco peregrinus*	Annex I	Green	2015	NBDC
Pheasant	*Phasianus colchicus*		Green	2023	NBDC
Pied wagtail	*Motacilla alba yarrellii*		Green	2023	NBDC
Raven	*Corvus corax*		Green	2022	NBDC
Reed bunting	*Emberiza schoeniclus*		Green	2022	NBDC
Ring-billed gull	*Larus delawarensis*		Green	2018	I-WeBS
Robin	*Erithacus rubecula*		Green	2023	NBDC
Rook	*Corvus frugilegus*		Green	2023	NBDC
Sedge warbler	*Acrocephalus schoenobaenus*		Green	2022	NBDC
Siskin	*Spinus spinus*		Green	2011	NBDC
Song thrush	*Turdus philomelos*		Green	2023	NBDC
Sparrowhawk	*Accipiter nisus*		Green	2022	NBDC
Stonechat	*Saxicola rubicola*		Green	2023	NBDC

Common Name[32]	Scientific Name	EU Birds Directive	BoCCI4 status[33]	Date of last record	Data source
Treecreeper	*Certhia familiaris*		Green	2021	NBDC
Water rail	*Rallus aquaticus*		Green	2024	I-WeBS
Whimbrel	*Numenius phaeopus*		Green	2022	I-WeBS
Whitethroat	*Sylvia communis*		Green	2011	NBDC
Woodpigeon	*Columba palumbus*		Green	2023	NBDC
Wren	*Troglodytes troglodytes*		Green	2023	NBDC

Table A-2: I-WeBS peak counts for Lough Carra (0D098) – winters 2016-17 to 2023/24

Species*	1% National	1% International	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Black-headed gull										37
Common gull										14
Cormorant	110	1200	7							14
Curlew	350	7600	28							23
Gadwall	20	1200								5
Golden plover*	920	9300								50
Goldeneye	40	11400	43							66
Great black-backed gull										2

Species*	1% National	1% International	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Great crested grebe	30	6300	1							9
Grey heron	25	5000								4
Greylag goose (resident)	35	980								50
Lapwing	850	72300								30
Little egret*	20	1100								2
Little grebe	20	4700	9							16
Mallard	280	53000	7							45
Moorhen										5
Mute swan	90	100	6							22
Redshank	240	2400								17
Snipe										4
Teal	360	5000	6							61
Tufted duck	270	8900	120							149
Water rail										3
Whooper swan*	150	340								31
Wigeon	560	14000	1							
*Denotes species listed under Annex I of the EU Birds Directive										

Table A-3: I-WeBS peak counts for Kilglassan Turlough/Greaghan's (0D017) – winters 2013/14 to 2023/24

Species*	1% National	1% International	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Barnacle goose*	160	810									1
Black-headed gull			372	145			184			180	92
Black-tailed godwit	200	1100									1
Coot	190	15500					0				9
Curlew	350	7600	40	136			121			55	59
Dunlin*	460	13300								6	
Gadwall	20	1200									13
Golden plover*	920	9300		500			30			470	184
Great black-backed gull			10								2
Great crested grebe	30	6300					0				2
Greenland white-fronted goose*	100	190		55			0				
Grey heron	25	5000	4	2			2		1	5	6
Greylag goose (resident)	35	980		129			26			358	426
Lapwing	850	72300	112	470			70			305	117
Lesser black-backed gull				7			2		1	2	2

Species*	1% National	1% International	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Light-bellied brent goose	350	400					12			61	
Little egret*	20	1100									5
Little grebe	20	4700									2
Mallard	280	53000	180	107			135		5	253	233
Moorhen											3
Mute swan	90	100	16	5			47		1	10	12
Pochard	110	2000	9				0				
Red-breasted merganser	25	860		1			0				
Redshank	240	2400					2				
Shoveler	20	650	36	87			66			232	203
Snipe											11
Teal	360	5000	70	70			127		6	150	359
Tufted duck	270	8900	139	50			155			274	262
Whooper swan*	150	340	123	80			39		1	217	112
Wigeon	560	14000	270	563			437			400	799
***Denotes species listed under Annex I of the EU Birds Directive**											

Table A-4: I-WeBS peak counts for Carras Lough (0D010) – winters 1994/95 to 1998/99

Species*	1% National	1% International	1994/95	1995/96	1996/97	1997/98	1998/99
Black-headed gull				30	25		
Common gull				4			
Coot	190	15500		11		6	
Cormorant	110	1200	1	2	1	4	
Curlew	350	7600	35	22	16	29	
Dunlin*	460	13300	10				
Gadwall	20	1200	5	6	6		
Great crested grebe	30	6300	2		2		
Grey heron	25	5000	2	1	2	2	
Lapwing	850	72300	37	20	16	11	
Little grebe	20	4700	3	2	1	2	
Mallard	280	53000	115	83	160	103	7
Moorhen			4	2	4		
Mute swan	90	100	2	4	7	4	4
Pochard	110	2000		9			12
Redshank	240	2400	2		5		

Species*	1% National	1% International	1994/95	1995/96	1996/97	1997/98	1998/99
Shoveler	20	650	14				4
Snipe			18	25	12		
Teal	360	5000	70	24	27	44	56
Tufted duck	270	8900	18	16	17	8	32
Water rail					4	2	
Whooper swan*	150	340					250
Wigeon	560	14000					90
Woodcock				1	2		
*Denotes species listed under Annex I of the EU Birds Directive							

Table A-5: I-WeBS peak counts for North Central Galway Lakes (0G005) – winters 1994/95 to 2003/04

Species*	1% National	1% International	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04
Barnacle goose*	160	810				1						
Bewick's swan*	20	220	11	1	9						4	12
Black-headed gull			230	749	548	696	1515	779	292	142	48	125
Black-tailed godwit	200	1100				20		35				

Species*	1% National	1% International	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04
Common gull			22	4	72	10				60	60	
Coot	190	15500	57	6	83	10	12	43	5	25		1
Cormorant	110	1200	18	12	10	19	3	5	4	1	4	3
Curlew	350	7600	463	315	218	345	500	121	459	35	42	175
Dunlin*	460	13300		10	145		300	150	150	1	200	8
Gadwall	20	1200	10	6	4	6						
Golden plover*	920	9300	1260	1325	1090	6900	2200	800	1760	1200	850	410
Goldeneye	40	11400		10	11	12	11	5			2	
Great black-backed gull				1		16		1				
Great crested grebe	30	6300	3	4	5		1	1		1	1	
Greenland white-fronted goose*	100	190	180	180	124	207	105			70	67	56
Grey heron	25	5000	6	5	7	6		1	1	2		1
Herring gull						48						
Jack snipe				2								
Lapwing	850	72300	1224	1594	1326	3972	2007	470	3255	1450	320	601

Species*	1% National	1% International	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04
Lesser black-backed gull			5									
Little grebe	20	4700	7	2	6	2			1			
Mallard	280	53000	259	243	340	579	134	141	104	73	48	49
Moorhen			9	8	6	6						
Mute swan	90	100	18	18	17	13	10	15	14	20	11	4
Pintail	20	600		3			20		1			
Pochard	110	2000	317	172	426	66	536	14	57	100	117	88
Redshank	240	2400	9	8	6	12	6	14	14	2	4	36
Ringed plover	120	540					2					
Shelduck	100	2500						1				
Shoveler	20	650	50	17	39	17	8	27	32	32	71	32
Snipe			37	32	20	10						
Spotted redshank										1		
Teal	360	5000	205	181	235	855	228	182	286	513	224	199
Tufted duck	270	8900	111	70	195	74	131	99	59	62	72	44

Species*	1% National	1% International	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04
Water rail			1	2	3	8						
Whooper swan*	150	340	223	104	131	179	224	263	452	209	323	256
Wigeon	560	14000	1903	1350	1866	2669	1340	900	1336	615	539	986
Woodcock			3	5	4	1						
*Denotes species listed under Annex I of the EU Birds Directive												

Table A-6: I-WeBS peak counts for North Central Galway Lakes (0G005) – winters 2004/05 to 2013/14

Species*	1% National	1% International	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Barnacle goose*	160	810									1	
Black-headed gull			457	450	449	36	24	184	50	210	9	152
Common gull			103	243	3							
Coot	190	15500		6		1						1
Cormorant	110	1200	7	3	3	4	1	1		1	2	
Curlew	350	7600	58	53	69	178	150	30	25	107	1	
Dunlin*	460	13300			66				2	8		

Species*	1% National	1% International	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Gadwall	20	1200						4				
Golden plover*	920	9300	500	1050	1030	185	300	705	70	400	890	60
Goldeneye	40	11400		2								
Great black-backed gull						1						
Great crested grebe	30	6300			2							
Greenland white-fronted goose*	100	190	52	82	101	85	30	24	45	63		51
Grey heron	25	5000	1	1	2	5				1		
Greylag goose (resident)	35	980									48	13
Herring gull					2							
Lapwing	850	72300	1208	394	850	777	548	270	97	525	699	282
Lesser black-backed gull				31								
Mallard	280	53000	119	106	94	278	46	285	230	107	215	21
Moorhen			3		1							1
Mute swan	90	100	15	7	17	17	7	25		9	8	23
Pintail	20	600							1			

Species*	1% National	1% International	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Pochard	110	2000	110	146	109	97	113	27	75	56	126	8
Redshank	240	2400	14	9	15	2	11	9	1	7		
Shelduck	100	2500								1		
Shoveler	20	650	35	35	88	32	32	29	40	30	52	160
Snipe			1			2						
Teal	360	5000	421	145	152	79	59	152	80	270	680	20
Tufted duck	270	8900	59	77	69	88	109	48	21	250	232	214
Whooper swan*	150	340	210	41	181	247	208	225	194	265	136	193
Wigeon	560	14000	1101	806	1171	1090	395	1075	1106	702	488	1200
***Denotes species listed under Annex I of the EU Birds Directive**												

Table A-7: I-WeBS peak counts for North Central Galway Lakes (0G005) – winters 2014/15 to 2023/25

Species*	1% National	1% International	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Black-headed gull				220	28			37			115	190
Black-tailed godwit	200	1100									7	
Common gull											11	

Species*	1% National	1% International	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Coot	190	15500		2				0			2	
Cormorant	110	1200						0				
Curlew	350	7600		100	80			50			44	25
Dunlin*	460	13300		64				0			9	
Gadwall	20	1200										8
Golden plover*	920	9300		922				410			20	800
Great black-backed gull								2			1	8
Great crested grebe	30	6300						0				2
Greenland white-fronted goose*	100	190		95	45			0			46	36
Grey heron	25	5000						1			1	5
Greylag goose (resident)	35	980						365			44	218
Herring gull											15	8
Lapwing	850	72300		779	250			400			310	124
Lesser black-backed gull								9			5	14
Little egret*	20	1100			2							4

Species*	1% National	1% International	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Little grebe	20	4700									2	
Mallard	280	53000		137	381			313			330	105
Moorhen												3
Mute swan	90	100		11	1			8			5	8
Pochard	110	2000										143
Red-breasted merganser	25	860						0				
Redshank	240	2400		8								
Ringed plover				4								
Shoveler	20	650		127	72			0			453	70
Snipe												2
Teal	360	5000		110	211			80			354	252
Tufted duck	270	8900		612	64			141			600	251
Whooper swan*	150	340		317	133			52			156	155
Wigeon	560	14000		1918	737			228			1114	881
***Denotes species listed under Annex I of the EU Birds Directive**												

Table A-8: I-WeBS peak counts for River Clare (0G302) – winters 2013/14 to 2022/3

Species*	1% National	1% International	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Black swan				1						
Black-headed gull				2	271	174	41	5	287	
Common gull				4	74	4				26
Cormorant	110	1200			1	4	10	10	9	6
Curlew	350	7600			8	3	30	20	13	
Golden plover*	920	9300		220		20		1000	1000	
Great black-backed gull					26	10	2		2	1
Great crested grebe	30	6300			1					
Grey heron	25	5000		4	5	6	8	4	8	7
Greylag goose (resident)	35	980		4				11	55	29
Herring gull					12	3	1	3	15	2
Lapwing	850	72300			2	47	283	288	444	111
Lesser black-backed gull				6	178					2
Little egret*	20	1100		1	1	1	1		2	
Little grebe	20	4700			2					

Species*	1% National	1% International	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Mallard	280	53000	2	8	14	9	10	16	22	7
Moorhen						1	1	2	4	1
Mute swan	90	100		25	60	49	32	17	64	3
Pintail	20	600		2						
Snipe				2	1		8		1	
Teal	360	5000					8		8	
Whimbrel							7	114	6	
Whooper swan*	150	340	50	110	98	111	115	78	105	5
Wigeon	560	14000							45	12
***Denotes species listed under Annex I of the EU Birds Directive**										

Table A-9: I-WeBS peak counts for Rostaff Lake (0D305) – winters 2013/14 to 2022/23

Species *	1% National	1% International	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Bar-tailed godwit*	170	1500									2	
Black-headed gull			124	170	106	120	47	54	163		70	20
Common gull			200	260	350	400	140	350	400		250	550

Species *	1% National	1% International	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Coot	190	15500								1		
Cormorant	110	1200	2	2	4	6	4	4	2	3	2	1
Curlew	350	7600	70	401	100	70	140	80	64	20	100	33
Gadwall	20	1200		2					25		8	
Glaucous gull								1				
Golden plover*	920	9300		85					300		1000	
Great black-backed gull					1		2				1	
Great crested grebe	30	6300			1				1	1	1	1
Greenland white-fronted goose	100	190			34							
Grey heron	25	5000	1		1	1		1	1	2	1	1
Greylag goose (domestic)				3								
Greylag goose (resident)	35	980		55	30	45	2	170	5	50	20	100
Herring gull			1		1				4			
Lapwing	850	72300	85	300	250	70	40	190	450	23	800	140
Lesser black-backed gull			4	2							2	2

Species *	1% National	1% International	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Little egret*	20	1100						1		1		
Little grebe	20	4700		1								
Mallard	280	53000	19	64	110	90	20	14	33	36	46	50
Moorhen							1					
Mute swan	90	100			2		2	3	2		3	1
Pochard	110	2000	10	40		9	16	7	7	1	7	14
Ring-billed gull							6					
Scaup	25	3100							3			
Shoveler	20	650	190	44	140	10	60	43	60	50	20	40
Smew*												1
Snipe				1	3							
Teal	360	5000	50	20	198	30	80	8	15	15	9	16
Tufted duck	270	8900	20	340	43	30	43	68	50	7	265	200
Unidentified duck									200			
Whooper swan*	150	340	24	25	23	10	14	2	16	9	12	10
Wigeon	560	14000	400	300	500	330	366	450	300	88	120	140

Species *	1% National	1% International	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
*Denotes species listed under Annex I of the EU Birds Directive												

Table A-10: I-WeBS peak counts for Doologuh Headford (Turloughcor) (0G317) – winters 2013/14 to 2022/23

Species *	1% National	1% International	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Black-headed gull			30			3	30				6	
Black-tailed godwit	200	1100				5						
Common gull						38			300		70	300
Coot	190	15500			2							
Cormorant	110	1200	1	2				2	3		1	2
Curlew	350	7600	7	3		2	2	2		2		
Gadwall	20	1200	10	50	30	27	60	68	68	40	64	70
Golden plover*	920	9300		100		200			500	158	1050	
Great black-backed gull				1								
Great crested grebe	30	6300									2	
Grey heron	25	5000		1	1	1		2	6		1	
Greylag goose (resident)	35	980			10							40

Species *	1% National	1% International	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Herring gull									1		4	
Lapwing	850	72300	23	80		10		40	158	100	430	200
Lesser black-backed gull								9	1			1
Little egret*	20	1100										1
Little grebe	20	4700	8	2		1		1	7	3	1	1
Mallard	280	53000	30	20	120	64	48	63	30	5	15	8
Moorhen			2	1								1
Mute swan	90	100	2	2	2	2	3	3	3	2	2	2
Pochard	110	2000			6							
Shoveler	20	650	86	50	35	57	90	70	150	60	70	176
Slavonian grebe*							1					
Snipe									3		2	
Teal	360	5000	100	78	151	105	80	80	86	10	128	80
Tufted duck	270	8900	135	37	44	38	80	33	50	20	130	23
Whooper swan*	150	340	19	40	1	14	23	40	20			5
Wigeon	560	14000	252	272	150	280	294	562	350	162	249	460

Species *	1% National	1% International	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
*Denotes species listed under Annex I of the EU Birds Directive												

Table A-11: I-WeBS peak counts for Lough Corrib (0G004) – winters 2013/24 to 2022/23

Species *	1% National	1% International	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Bar-tailed godwit*	170	1500				2						
Black-headed gull			143	27	82	96	70	200	24		14	15
Common gull			105	41	52	4	255	113	155		150	465
Coot	190	15500	263	195	4	3061	6372					
Cormorant	110	1200	57	48	7	79	71	2	2	4	6	
Curlew	350	7600	21	34	7	63	27		8			
Dunlin*	460	13300	12		12	35						
Gadwall	20	1200	16	8	4	68		3			4	
Golden plover*	920	9300	6923	553	420	790	135	277	10			
Goldeneye	40	11400	48	36		41	5					
Great black-backed gull			13	8	1	18	10	2				
Great crested grebe	30	6300	6	2		9	12		3		2	

Species *	1% National	1% International	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Great northern diver*	20	50	2	2	2	3	2	1	1		2	
Great white egret						2	1					
Greenland white-fronted goose*									13			
Greenshank	20	3300					1					
Grey heron	25	5000	27	14	1	9	4		3		1	
Greylag goose (resident)	35	980	47	160	69	51	160	32	11	50		
Herring gull			1	3		1	1					
Kingfisher*				1				1				
Lapwing	850	72300	2302	610	38	387	235	35	30	7	15	
Lesser black-backed gull			3	2		1		1	1	2	1	
Little egret*	20	1100	2	1		4	1	1	3			6
Little grebe	20	4700	47	45	8	30	19	4	11	5	3	3
Mallard	280	53000	89	193	45	156	156	33	31	14	12	4
Moorhen			17	7	2	7	2	1	3		3	2
Mute swan	90	100	288	315	8	277	370	7	13	22	11	20

Species *	1% National	1% International	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Oystercatcher	610	8200									2	
Pintail	20	600	4			10						
Pochard	110	2000	801	1261		17	14					
Red-breasted merganser	25	860		5	1	10	2					
Redshank	240	2400	4	4	3	10		1	4			
Ringed plover					2							
Shelduck										50		
Shoveler	20	650	4		10	30					2	
Snipe			22	3	1	6	2	5	2		1	
Teal	360	5000	144	12	43	111	2	13			10	
Tufted duck	270	8900	1276	6586	43	577	718	7	2	6	2	
Unidentified duck				4004								
Water rail				1		3	1			1		
Whooper swan*	150	340	122	150	68	41	96	58	29	15	250	15
Wigeon	560	14000	283	240	30	66	35	2	4		130	
***Denotes species listed under Annex I of the EU Birds Directive**												

Species *	1% National	1% International	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23

Table A-12: I-WeBS peak counts for Lough Adrehid (0GS28) – winters 2024/15 to 2021/22

Species	1% National	1% International	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Cormorant	110	1200	1							
Mallard	280	53000								2

Table A-13: I-WeBS peak counts for Lough Mask (0D005) – winters 2013/24 to 2023/24

Species *	1% National	1% International	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Black-headed gull				1	11	162	90	28	21				7
Common gull				13	6	174	238	10	79				53
Common sandpiper									2			2	
Coot	190	15500	27	8	15	140	28	37	15		6	17	7
Cormorant	110	1200	35	78	40	54	53	45	96		55	83	59
Curlew	350	7600	44	48	78	7	36	33	43		41	34	27
Dunlin*	460	13300									7	1	
Gadwall	20	1200							2			1	11

Species *	1% National	1% International	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Golden plover*	920	9300				74					10		15
Goldeneye	40	11400	30	71	36	67	274	64	93		38	27	33
Great black-backed gull			6	13	10	6	31	12	17		31	19	10
Great crested grebe	30	6300	5	9	6	15	10	27	12		9	9	18
Great northern diver*	20	50	4	3		1	6	2	5		1	1	13
Greenland white-fronted goose*	100	190	5	8									
Greenshank											2		2
Grey heron	25	5000	6	10	8	11	4	15	21		10	10	4
Greylag goose (domestic)				10	66	27	8	33	57				
Greylag goose (resident)	35	980	15						53		39	27	43
Herring gull											2		11
Kingfisher*				2			1					1	
Lapwing	850	72300	91	96	66	56	65	32	89		116	132	95

Species *	1% National	1% International	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Lesser black-backed gull					11	16	20	1				1	12
Little egret*								3			1	1	
Little grebe	20	4700	30	35	18	26	30	31	50		18	33	51
Little stint											1		
Long-tailed duck						2							
Mallard	280	53000	193	552	212	148	104	140	165		249	439	103
Moorhen			18	9	4	15	7	6	6		4	11	7
Mute swan	90	100	91	111	66	135	133	78	152		99	88	121
Oystercatcher						2	4						
Pochard	110	2000	10	39		1	2	5					
Red-breasted merganser				13	4	15	3	1	6		19	8	4
Redshank				1	1		2					1	1
Ringed plover				3		3					3	6	
Ring-necked duck											1	1	

Species *	1% National	1% International	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Scaup					1		1	1	2				
Shelduck								3					
Snipe			2	8	8	26	17	3	27		9	4	2
Teal	360	5000	27	87	98	24	52	13	56		46	194	52
Tufted duck	270	8900	344	686	376	494	343	442	622		425	236	172
Whooper swan*	150	340	67	54	60	144	16	21	29		22	4	16
Wigeon	560	14000	259	247	308	122	197	90	123		148	286	167
***Denotes species listed under Annex I of the EU Birds Directive**													

Table A-14: I-WeBS peak counts for Ballybackagh (0DS30) – winters 2014/15 to 2018/19

Species *	1% National	1% International	2014/15	2015/16	2016/17	2017/18	2018/19
Black-headed gull			60	19			36
Black-tailed godwit	200	1100	1				
Common gull			39	34			
Coot	190	15500		2			

Species *	1% National	1% International	2014/15	2015/16	2016/17	2017/18	2018/19
Cormorant	110	1200		1			
Curlew	350	7600	7	66			51
Dunlin*	460	13300	8	15			
Gadwall	20	1200		4			
Golden plover*	920	9300	800	660			150
Great black-backed gull				1			1
Great crested grebe	30	6300	1	1			
Greenland white-fronted goose*	100	190	8	3			13
Grey heron	25	5000		2			1
Greylag goose (resident)	35	980	110	53			
Lapwing	850	72300	500	176			305
Little grebe	20	4700	6	2			
Mallard	280	53000	33	57			8
Moorhen			2	1			
Mute swan	90	100	2	5			3

Species *	1% National	1% International	2014/15	2015/16	2016/17	2017/18	2018/19
Pintail	20	600		1			
Pochard	110	2000	2	1			
Shoveler	20	650	5	19			5
Snipe			5	1			1
Teal	360	5000	7	36			2
Tufted duck	270	8900	67	171			28
Water rail			1	1			
Whimbrel				19			
Whooper swan*	150	340	25	80			
Wigeon	560	14000	80	117			78
Woodcock				1			
***Denotes species listed under Annex I of the EU Birds Directive**							