

# Breeding Bird Survey Report 2023

Lissinagroagh Wind Farm,  
Co. Leitrim





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# Table of Contents

<b>1.</b>	<b>SUMMARY .....</b>	<b>4</b>
<b>2.</b>	<b>INTRODUCTION .....</b>	<b>5</b>
2.1	Site Description.....	5
2.2	Details of Proposed Development.....	5
2.3	Purpose of this Report.....	5
2.4	Relevant Legislation .....	5
<b>3.</b>	<b>METHODS.....</b>	<b>6</b>
3.1	Scope.....	6
3.1.1	Description of Study Area.....	6
3.1.2	Ecological Features Considered.....	6
3.1.3	Consultation.....	6
3.2	Desk Study.....	6
3.3	Field Surveys .....	7
3.3.1	Flight Activity Surveys.....	7
3.3.2	Foraging Vantage Point Surveys.....	9
3.3.3	Breeding Raptor Surveys .....	10
3.4	Project Team.....	10
3.4.1	Field Survey Team .....	10
3.5	Survey Limitations.....	10
<b>4.</b>	<b>RESULTS .....</b>	<b>11</b>
4.1	Desk Study.....	11
4.1.1	Sites Designated for Nature Conservation.....	11
5.1.1	Previous Survey Data.....	11
5.2	Field Surveys .....	13
5.2.1	Flight Activity Surveys.....	13
5.2.2	Breeding Raptor Surveys .....	14
5.2.3	Foraging Vantage Point Surveys.....	15
5.2.4	Incidental Observations .....	15
<b>6.</b>	<b>DISCUSSION .....</b>	<b>17</b>
	<b>REFERENCES .....</b>	<b>18</b>

## 1. **SUMMARY**

Ornithological surveys have been undertaken at the site of Lissinagroagh Wind Farm, Manorhamilton, Co. Leitrim since 2018. This report outlines the findings from surveys completed during the 2023 breeding season. The following surveys were undertaken:

- > Vantage Point Surveys (VPs)
- > Breeding Raptor Surveys
- > Foraging Vantage Point Surveys (FVPs)

The key observations during surveys relate to breeding hen harrier. Hen harrier was recorded frequently, with multiple birds present, and a pair were confirmed nesting approximately 800m from the site boundary. A second pair were also present in the study area with probable breeding behaviour recorded, however a second nest site was not identified.

## 2. INTRODUCTION

MKO was appointed to carry out ornithological surveys at Lissinagroagh Wind Farm, Manorhamilton, Co. Leitrim (hereafter “the site”) for the 2023 breeding season. This report describes the survey methods and findings for the period April 2023 to September 2023 inclusive.

### 2.1 Site Description

The site is located north of Manorhamilton (Grid Ref: X 591484.00 Y 842226.00). The dominant habitat on site is forestry, upland blanket bog and rough grassland. The wider surroundings are predominantly upland blanket bog, rough grassland, forestry, and improved agricultural grassland.

### 2.2 Details of Proposed Development

Appendix 1 Figure 1-0 shows the wind farm site boundary, based on the most up to date 14 turbine layout.

### 2.3 Purpose of this Report

This report describes the ornithological survey methods employed, and survey data collected at Lissinagroagh Wind Farm for the period April 2023 to September 2023 inclusive. It does not include an assessment or discussion of the potential impacts of the proposed development on birds. Instead, this report aims to provide robust baseline ornithological survey data for the breeding period. This data will be used to inform a separate ecological impact assessment and appropriate assessment for the proposed wind farm.

### 2.4 Relevant Legislation

The following key legislative provisions are applicable to wild birds in Ireland: Irish Wildlife Acts 1976 to 2022.; the European Union Birds Directive (EU Directive 2009/147/EC on the conservation of wild birds); the European Communities (Birds and Natural Habitats) Regulations 2011, as amended (S.I. no. 477 of 2011) and the International Convention on Wetlands of International Importance (the Ramsar Convention), 1971.

### 3. METHODS

#### 3.1 Scope

##### 3.1.1 Description of Study Area

The ornithology study area was defined as a 500m radius of the viable area for turbines (see Figure 1.0). This boundary accounts for both detecting birds that use the wind farm site occasionally and spatial inaccuracies in observational data, as well as ancillary structures. The ornithology study area was used for vantage point surveys, following Scottish Natural Heritage (SNH; now NatureScot) 2017 guidance (SNH, 2017) that flight activity surveys encompass an area extending 500m beyond the potential outermost proposed turbines. A 5km radius of the ornithology study area boundary was used for breeding raptor surveys, based on the core foraging range of hen harrier, which this area is known to support. The novel foraging vantage point surveys (FVPs) were located at nest site/sites as they were located, irrespective of the windfarm site boundary.

##### 3.1.2 Ecological Features Considered

Ecological features considered in the scope of the surveys were the habitats present on the site and hinterland, as reviewed by aerial photography and reconnaissance visits, and the Special Protection Areas (SPA) designated under the Birds and Habitats (92/43/EEC) Directives Natura 2000 network within foraging range for SCI species and/or 15km of the site. Bird species of conservation interest were also considered, including those listed on Annex I of the Birds Directive that occur in Ireland, species that are a Special Conservation Interest (SCI) of SPAs within foraging range for SCI species and/or 15km of the site, species on the Red List of Birds of Conservation Concern in Ireland (Gilbert *et al.*, 2021) and all raptor species that occur in Ireland, because these species are particularly sensitive to wind farm developments.

##### 3.1.3 Consultation

MKO undertook a consultation exercise to inform the scope of the surveys. Table 3-1 provides a list of the organisations consulted and notes where responses have been received.

Table 3-1 Consultation Response Summary

No.	Consultee	Response to Consultation
1	BirdWatch Ireland	No Response
2	National Parks and Wildlife Service (NPWS)	Initial response received 18/06/2018. Confirmation received 30/12/2019 from NPWS that no more recent information was available.

#### 3.2 Desk Study

A comprehensive desk study was undertaken in 2019 to search for any relevant information on species of conservation concern which potentially use the site. The assessment included a thorough review of the available ornithological data including:

- Review of sites designated for birds.
- Review of breeding bird atlases (Balmer *et al.*, 2013).
- Review of Birds of Conservation Concern (BoCCI) in Ireland 2020-2026 (Gilbert *et al.* 2021).
- Review of specially requested records from the NPWS Rare and Protected Species Database. An information request was sent to the NPWS requesting records from the Rare and Protected Species Database.

- Review of the 2015 National Survey of Breeding Hen Harrier in Ireland Report (Ruddock *et al.*, 2016).

### 3.3 Field Surveys

The approach to breeding bird surveys for the proposed wind farm is based on recommendations given in SNH (2017). This guidance is recognised as standard good practice guidance throughout the UK and Ireland for surveying birds to inform impact assessment for onshore wind farms. Field surveys were undertaken from April 2023 to September 2023 inclusive. Individual survey types are described below.

#### 3.3.1 Flight Activity Surveys

Vantage point surveys were undertaken following the guidance of SNH (2017) from four vantage point locations during the 2023 breeding season. Vantage point surveys aim to quantify the flight activity of primary and secondary ‘target species’ within the study area. The main purpose of vantage point surveys is to collect data on primary target species that will enable estimates to be made of:

- The time spent flying over the site.
- The relative use by birds of different parts of the site.
- The proportion of flying time spent within the provisional upper and lower risk height limits as determined by the potential rotor diameter and rotor hub height.
- The analysis of the potential risk of collision of birds with rotating turbines.

#### Vantage Point Locations and Viewshed Analysis

Viewshed analysis was carried out to confirm the sufficiency of the chosen vantage point locations (VP1 at ITM X592930 Y842236, VP2 at ITM X592615 Y842428, VP3 at ITM X593496 Y843692 and VP4 at ITM X 590407 Y 840997). The initial viewshed analysis was conducted in 2018 and reviewed in 2020. Viewsheds were calculated using Resoft Wind Farm ZTV (Zone of Theoretical Visibility) software in combination with MapInfo Professional (Version 10.0) using a notional layer suspended at 25m, which is representative of the minimum height considered for the Potential Collision Risk Area based on the turbine model at the time the vantage point locations were selected. Note that while the relevance of being able to view as much of the site to ground level is acknowledged, the SNH guidance emphasises the importance of visibility of the ‘collision risk volume’ when the data is to be used to estimate the risk of collision with turbines by birds. Therefore, the viewshed analysis aims to identify the most suitable locations to site vantage points such that the airspace of the turbine rotor swept area is in view using the fewest possible number of vantage points. The vantage point locations were tested for visibility coverage by creating a viewshed point 1.75m in height (to represent the height of observer) on a map using 10m contours terrain data. The relative height of any surrounding trees and its effects on visibility is also accounted for in the analysis. Using the ZTV software, a viewshed of 360° was produced calculating an area 25m from ground level up to a 2km radius. The resulting viewshed image was then cropped to 180° to give the viewshed.

#### Survey Effort

A total of 36 hours of watches was undertaken at each of the four vantage point locations from April to September 2023 inclusive. This equates to a total of six hours per vantage point per month. Survey effort undertaken during the 2023 breeding season is summarised in Table 3-2 and full details are presented in Appendix 2 of this report, including dates, times, duration, and weather conditions. A map of the vantage point locations is provided in Appendix 1 Figure 1.0.

Table 3.2 Summary of vantage point survey effort undertaken at the proposed Lissinagroagh Wind Farm from April 2023 to September 2023.

	VP1 ITM <sup>1</sup> X 592930 Y 842236	VP2 ITM X 592615 Y 842428	VP3 ITM X 593496 Y 843692	VP4 ITM X 590407 Y 840997
Month	Hours			
April	13/4/23 6 hours	20/4/23 6 hours	20/4/23 6 hours	27/4/23 6 hours
May	31/5/23 6 hours	30/5/23 6 hours	18/5/23 6 hours	10/5/23 6 hours
June	21/6/23 6 hours	N/A	N/A	N/A
July	17/7/23 6 hours	11/7/23 6 hours 20/7/23 6 hours	12/7/23 6 hours	13/7/23 6 hours
August	9/8/23 6 hours	18/8/23 6 hours	17/8/23 6 hours 30/8/23 6 hours	16/8/23 6 hours 29/8/23 6 hours
September	29/9/23 6 hours	21/9/23 6 hours	22/9/23 6 hours	19/9/23 6 hours
<b>Total Hours</b>	<b>36:00</b>	<b>36:00</b>	<b>36:00</b>	<b>36:00</b>

### Primary Target Species

The target species for vantage point surveys were defined by legal and/or conservation status, following SNH (2017) guidance, which states that “*in most circumstances the target species will be limited to those species which are afforded a higher level of legislative protection.*” A list of primary target species was drawn from the following sources:

- Species that are SCIs of the SPAs within 15km of the site.
- Species listed on Annex I of the Birds Directive that occur in Ireland.
- Species listed on the Red List of Birds of Conservation Concern in Ireland (Gilbert *et al.*, 2021) with the exception of Red List passerines, as these are generally not significantly impacted by wind energy developments.

### Secondary Target Species

SNH (2017) also states that “*local circumstances may indicate that survey information should also be acquired on other species, especially those of regional conservation concern.*” A list of secondary target species comprised:

- All other waterbirds that occur in Ireland that are not included as primary target species.
- All raptors that occur in Ireland that are not included as primary target species.

### Data Collection

Data on bird observations and flight activity was collected by the surveyor by scanning the arc of 180° and a 2km radius from the fixed location. Surveys were scheduled to provide a spread over the full daylight period including at dawn and dusk (starting or ending an hour before dawn or an hour after dusk on alternate months for April, May, August, and September) to coincide with the highest peaks of bird activity and to record any wildfowl migration or crepuscular species. Breaks of at least 30 minutes were taken every 3 hours to minimise observer fatigue. A 10-minute settling in period was allowed for at the start of each

<sup>1</sup> Irish Transverse Mercator Co-Ordinates

vantage point to allow the surveyor to get into place, and to minimise the impact of surveyor disturbance on flight activity. For each primary target species observation, the following details were recorded:

- Date, time, and location of observation.
- Number of species recorded.
- Total duration of flightline observation.
- Duration at each of flightline at each height band.
- Species age and sex (where determinable).
- Habitat(s).
- Behaviour.

Recording height bands were determined based on the likely turbine specifications under consideration at the time of survey (upper tip height 175m and lower tip height 25m). Flight heights were attributed to four distinct height bands as follows:

- Band 1 = 0 - 15m (below the likely rotor swept area).
- Band 2 = 15 - 25m (potentially within the likely rotor swept area, at least in part).
- Band 3 = 25 - 175m (within the likely rotor swept area, potential collision height, PCH).
- Band 4 = >175m (above the likely rotor swept area).

Although recording of secondary species is subsidiary to recording of primary target species, secondary target species were also recorded to provide an index of flight activity for secondary target species within the site.

### 3.3.2 Foraging Vantage Point Surveys

Foraging vantage point surveys (FVPs) were undertaken to provide additional information on foraging areas utilised by hen harrier breeding in the study area. FVPs were selected based on the number of nests located and the available viewshed in each case. Given the large core foraging area of birds and the extensive effort required to cover all potential foraging areas simultaneously, it was decided the nest sites would be directly observed and all visible activity recorded to provide as much information on areas utilised for foraging as possible given limitations on survey effort. Surveys were carried out during daylight hours and in accordance with peak activity hours for the species where possible. Surveys lasted from 3 to 6 hours.

FVPs began in June 2023 once a nest site had been identified to the south and continued into August 2023 when breeding birds had left the area. The single nest site identified was surveyed from two FVPs. Two FVPs were required to monitor all routes to and from the nest adequately. On each occasion a bird was observed its flight path was followed until it was lost from view. The key undertaking during these observations was to identify the areas utilised by foraging hen harrier. For each hen harrier observation, the following details were recorded:

- Flightline including direction of flight.
- Date, time, and location of observation.
- Number of species recorded.
- Species age and sex (where determinable).
- Habitat(s).
- Behaviour.

FVP locations are presented in Appendix 1 Figure 3.0.

### 3.3.3 Breeding Raptor Surveys

Breeding raptor (i.e. birds of prey) surveys were undertaken to identify occupied raptor territories and ascertain whether breeding was successful. Surveys were carried out during the core breeding season period from April to August 2023.

Methodology followed Hardey *et al.* (2013). Surveys involved a combination of raptor vantage point watches of 3 hours and transects in areas deemed most likely to hold breeding raptors based on habitat and observed movements of raptor species in the study area. There were 21 breeding raptor survey locations. Once breeding activity was observed, vantage point and transect locations were adjusted with the aim of pinpointing breeding locations. Each breeding raptor survey location was visited four times to complete a full round of breeding season surveys. The purpose of the four visits is (1) to establish occupancy, (2) to establish active nests, (3) to check for chicks and (4) to check for fledglings. Timings of these visits vary by species as set out in Hardey *et al.* (2013). Although visits between April and July are advised, nests identified during surveys were still active at the end of July, therefore surveys were extended into August. Survey effort is provided in Appendix 2 of this report, including dates, times, duration and weather conditions. A map of the breeding raptor survey locations is presented in Appendix 1 Figure 2.0.

## 3.4 Project Team

This report has been prepared by Andrew O'Donoghue (B.Sc.), Project Ornithologist with MKO and reviewed by Pdraig Cregg (B.Sc., M.Sc.), Principal Ornithologist. Both are suitably qualified ornithologists with experience in completing avifaunal assessments and competent experts for the purposes of the preparation of this report, following SNH (2017) and CIEEM (2017) ecological reporting guidelines.

### 3.4.1 Field Survey Team

The field surveys were undertaken in the 2023 breeding season by Andrew O'Donoghue, Kate Bismilla (B.Sc.), and Niall McHugh (B.Sc.). Surveyors are suitably qualified competent experts in field ornithology. Andrew has eight years of experience in ornithological surveys, Kate has eight years of experience, and Niall has five years of experience, including vantage point, breeding raptor and breeding walkover surveys.

## 3.5 Survey Limitations

A comprehensive suite of bird surveys was undertaken at the site between April and September 2023, as detailed in this report. There were no significant gaps in viewsheds during vantage point surveys. It was possible to schedule surveys to avoid potential human disturbances (e.g., forestry operations, agriculture, peat extraction, recreational activity). Surveys were not carried out in unsuitable weather conditions where visibility or bird activity would be impacted. On occasions where weather turned unsuitable or dangerous (e.g. lightning) after the survey had begun, surveys were postponed. Results from the 2023 breeding season are derived from a continuous six months of surveying undertaken following best practice guidance (SNH, 2017). The survey duration and scope are considered entirely satisfactory.

The foraging vantage points mentioned above in Section 3.3.2, were selected to identify where nesting hen harriers were foraging. And foraging areas were successfully identified. However, as hen harriers forage over a large area, the two No. FVP locations are unlikely to have provided full coverage of all areas utilised for foraging.

## 4. RESULTS

### 4.1 Desk Study

#### 4.1.1 Sites Designated for Nature Conservation

Using GIS software, sites designated for nature conservation within the potential zone of influence of the proposed wind farm development were identified. In the absence of any specific European or Irish guidance, SNH (2016) was consulted. This document provides guidance in relation to the identification of connectivity between proposed development proposals and SPAs. It takes into consideration the distances some species may travel beyond the boundary of their SPAs and outlines information on dispersal and foraging ranges of certain bird species. In addition, taking a precautionary approach, sites within a 15km radius of the proposed wind farm were identified. Sites designated for birds are listed below in Table 4-1.

Table 4-1 Designated sites within 15km of the site

Designated site and code	Distance from proposed works (km)
<b>Special Protection Areas (SPA)</b>	
Sligo/Leitrim Uplands (002384)	9.2
<b>Natural Heritage Areas (NHA)</b>	
Dough/Thur Mountains (002384)	0.1
Aghavoghil Bog (002430)	4.2
Crockauns/Keelogyboy Bogs (002435)	9.0

### 5.1.1 Previous Survey Data

#### 5.1.1.1 Breeding Bird Atlas Records

'Bird Atlas 2007-11: The breeding and wintering birds of Britain and Ireland' (Balmer *et al.*, 2013) is the most recent comprehensive work on breeding birds in Ireland. It provides information on species and their breeding status in 10km hectads. The site lies within hectad G94. Table 5-1 presents a list of nine species of conservation interest recorded within this hectad.

Table 5-1 Bird atlas 2007-11 records

Species Name	Hectad (G94)	Conservation Status
Golden plover	Non-Breeding	Annex I EU Birds Directive, BoCCI Red Listed
Peregrine	Probable Breeding	Annex I EU Birds Directive, SCI of SPA within 15km
Hen harrier	Confirmed Breeding	Annex I EU Birds Directive
Merlin	Possible Breeding	Annex I EU Birds Directive

Species Name	Hectad (G94)	Conservation Status
Red grouse	Probable Breeding	BoCCI Red Listed

### 5.1.1.2 Rare and Protected Species Dataset

An information request was sent to the NPWS requesting records from the Rare and Protected Species Database. The sections below provide records obtained from the NPWS (on 18<sup>th</sup> of June 2018) of the rare and protected breeding bird species hen harrier, peregrine and red grouse.

#### Hen Harrier

Table 5-2 below presents the NPWS records for hen harrier nest sites to defined radii of the development site.

Table 5-2 NPWS Hen Harrier Nest Site Records

Year	Within site boundary	0-1km from site boundary	1-3km from site boundary	3-5km from site boundary
2015	No Records	1 confirmed breeding site	No Records	1 confirmed breeding site
2010	No Records	3 confirmed breeding sites	1 sighting	1 confirmed breeding site, 1 additional sighting
2005	No Records	3 sightings	No records	No records
1998-2004	No Records	No Records	No Records	No records

#### Peregrine

The NPWS identified one confirmed peregrine nest site within 3-5km of the site. The observation was recorded during a survey in 2002.

#### Red Grouse

The NPWS hold records of red grouse in the area. Between 2000 and 2011 this species was recorded on nine occasions. One observation was recorded on site. There were two records located approximately 500m from the site - one just south of Dough Mountain and the other just north of Killea. The remainder of the observations were recorded over 3km from the site, three of which were in the vicinity of Thur Mountain.

## 5.2 Field Surveys

### 5.2.1 Flight Activity Surveys

During vantage point surveys, hen harrier were recorded regularly on site, including some time spent at potential collision height (PCH). White -tailed eagle, merlin, red grouse, golden plover, snipe, woodcock, buzzard, and kestrel were also recorded on site, including at PCH (Individual species accounts of primary and secondary target species are provided below).

#### 5.2.1.1 Primary Target Species

##### Hen harrier

Hen harrier were observed 34 times during vantage point surveys, all on site or within 500m of site. A total of 1,570s of flight was recorded at PCH. All observations involved adult male or female birds flying, hunting and foraging. Maps are presented in Appendix 1 Figure 1.1.

##### White tailed eagle

White tailed eagle was observed once during surveys. In August a single bird was observed soaring at Dough Mountain. A total of 450s was spent at PCH. Maps are presented in Appendix 1 Figure 1.2.

##### Merlin

Merlin were recorded once during vantage point surveys, on site. No time was observed at PCH. In May a single bird was observed in flight near Tawnyfeacle. Maps are presented in Appendix 1 Figure 1.3.

##### Red grouse

Red grouse were recorded four times during vantage point surveys, within 500m of the site. No time was observed at PCH. In April a single bird was observed in flight and calling at Killea. Maps are presented in Appendix 1 Figure 1.4.

##### Woodcock

Woodcock were recorded once during vantage point surveys, within 500m of the site. No time was observed at PCH. A single bird was observed in flight at Tawnyfeacle in April. Maps are presented in Appendix 1 Figure 1.5.

##### Snipe

Snipe were recorded 25 times during vantage point surveys, all on site or within 500m of the site. A total of 1,155s was spent at PCH. Observations involved single birds or flocks of up to six birds in flight, calling and displaying. Displaying birds were observed near Killea, Tawnyfeacle and Dough Mountain. Maps are presented in Appendix 1 Figure 1.6.

Kestrel were recorded eight times during vantage point surveys. A total of 1,095s were spent at PCH. Observations involved single birds foraging, hovering or flying. Maps are presented in Appendix 1 Figure 1.7.

### 5.2.1.2 Secondary Target Species

#### Buzzard

Buzzard were recorded 36 times during vantage point surveys, all on site or within 500m of site. A total of 6,275s was spent at PCH. Observations included single birds or pairs soaring, travelling, or foraging in both the northern and southern sections of the site. Maps are presented in Appendix 1 Figure 1.8.

#### Sparrowhawk

Sparrowhawk were recorded five times during vantage point surveys, all on site or within 500m of site. No time was observed at PCH. Observations involved single birds flying over, foraging, or perched. Young birds were recorded calling on site near Tawnyfeacle in August. Maps are presented in Appendix 1 Figure 1.9.

## 5.2.2 Breeding Raptor Surveys

#### Hen harrier

Hen harrier were observed 59 times during breeding raptor surveys. On the 4<sup>th</sup> of April a pair were recorded in courtship flight and displaying in the vicinity of the historic nest site to the south of the site indicating occupancy of the territory. On the 23<sup>rd</sup> of May, male and female birds were observed alarm calling confirming a nest location at [REDACTED], approx. 800m from the site boundary. Several observations recorded male and female provisioning this active nest location. On the 26<sup>th</sup> of July three chicks were observed flying around the nest site indicating successful fledging. Map of confirmed nest site in Confidential Appendix 3 Figure 5.0.

To the north, off site at [REDACTED] in the vicinity of a historic territory, a second pair was recorded. On the 4<sup>th</sup> of April, a male was recorded foraging indicating occupancy of the territory. On the 3<sup>rd</sup> of May a male was recorded carrying prey in the same area, likely as part of courtship rather than provisioning young given the early date. On the 4<sup>th</sup> of May, a pair was recorded in courtship and display flight in the same area. On the 24<sup>th</sup> of May, the male from the southern pair was observed with the northern male flying northwards. The 10<sup>th</sup> of May was the last time a female was observed in the northern area at [REDACTED]. The last observation of a male in the northern area was on the 14<sup>th</sup> of June flying uphill at Dough Mountain.

Maps are presented in Appendix 1 Figure 2.1.

#### White-tailed eagle

White-tailed eagle were recorded twice on site during breeding raptor surveys. Two observations were of the same bird on the 2<sup>nd</sup> of August. An adult bird flew low across the site at Killea, perching in heather. It then proceeded to fly north off-site. Maps are presented in Appendix 1 Figure 2.2.

#### Merlin

Merlin were observed twice during breeding raptor surveys. On the 27<sup>th</sup> of July, a female was twice observed in flight and hunting meadow pipits at Faughery on site and within 500m of site. Maps are presented in Appendix 1 Figure 2.3.

Kestrel were recorded seven times during breeding raptor surveys. Observations all involved single birds flying and hunting/foraging on and off site. In August a juvenile bird was observed foraging at Killea indicating breeding in the wider area. Maps are presented in Appendix 1 Figure 2.4.

#### Buzzard

Buzzard were recorded 19 times during breeding raptor surveys. Observations involved single birds or pairs flying or soaring both on and off site in the areas of Faughery, Raheelin and Boleyboy. Breeding behaviour was not confirmed. Maps are presented in Appendix 1 Figure 2.5.

#### Sparrowhawk

Sparrowhawk were recorded 12 times during breeding raptor surveys. Observations involved single birds in flight foraging or carrying prey. Breeding was confirmed on site west of Killea with a female at a historic nest site. Breeding was confirmed off site at Raheelin in two separate locations both approx. 1.5km from the site, confirmed through observations of adults carrying prey. Maps are presented in Appendix 1 Figure 2.6.

### 5.2.3 Foraging Vantage Point Surveys

#### Hen harrier

Hen harrier were observed 99 times during FVPs, of these, 63 observations involved foraging behaviour throughout or for part of the observation. Foraging observations centred around Faughery, the South of Saddle Hill, and in suitable habitat in the vicinity of the nest site at [REDACTED].

Prey carrying and food passes were observed 40 times. Other behaviours observed included flying, travelling, soaring, and mobbing. Individual adult male and female birds, pairs, and recently fledged chicks were all recorded. On the 18<sup>th</sup> of July, two chicks were observed flying to meet the adult female with prey confirming successful breeding. On the 21<sup>st</sup> of July, three chicks were observed at the nest. One chick was last observed in flight at the nest site on the 4th of August indicating successful fledging.

Maps are presented in Appendix 1 Figures 3.1, 3.2 and 3.3.

### 5.2.4 Incidental Observations

#### Hen harrier

Hen harrier were observed five times as incidental observations. Single adult males and females were recorded foraging and travelling at Boleyboy and Dough Mountain on site and within 500m of site and at Lisnabrack off site. Maps are presented in Appendix 1 Figure 4.0.

#### Red grouse

Red grouse were recorded three times as incidental observations. Single birds and a pair were recorded calling or in flight at Dough Mountain and Killea indicating probable breeding in these areas. Maps are presented in Appendix 1 Figure 4.1.

Kestrel were recorded on one occasion as an incidental observation. One bird was observed in flight at Tawnyfeacle in August. Maps are presented in Appendix 1 Figure 4.2.

### Snipe

Snipe were recorded seven times as incidental observations. In May and June, birds were observed drumming (displaying) on site or within 500m of site at Killea, Dough Mountain, and Tawnyfeacle and off site at Raheelin. Maps are presented in Appendix 1 Figure 4.3.

### Sparrowhawk

Sparrowhawk were recorded on five occasions as incidental observations. Single birds were recorded in flight on site at Tawnyfeacle and Boleyboy. Two recently fledged juveniles were also observed on site at Faughery in August confirming breeding here. Maps are presented in Appendix 1 Figure 4.4.

### Buzzard

Buzzard were recorded on ten occasions. Single birds were recorded at Tawnyfeacle, Saddlehill, and Killea. A pair with a recently fledged chick was observed on site at Tawnyfeacle in July, confirming breeding here. Maps are presented in Appendix 1 Figure 4.5.

## 6. DISCUSSION

Ornithological surveys were conducted at the Lissinagroagh wind farm site from April to September 2023 inclusive. During these surveys, breeding territories were identified for hen harrier, red grouse, snipe and sparrowhawk.

Hen harrier were regularly recorded on site during surveys. Male and female birds were observed to the north and south of site in April and May indicating two pairs occupying territories in the area.

To the south of the site, on the 4<sup>th</sup> of April, a pair were recorded in courtship flight and displaying in the vicinity of a historic nest site to the south of the site indicating occupancy of the territory. On the 23<sup>rd</sup> of May, male and female birds were observed alarm calling confirming a nest location at [REDACTED], approx. 800m from the site boundary. Upon location of the nest site FVPs were then carried out from two locations. Foraging observations centred around Faughery, the South of Saddle Hill, and in suitable habitat in the vicinity of the nest site at [REDACTED]. On the 21<sup>st</sup> of July three chicks were recorded in flight at the nest site, these birds were last seen on the 4<sup>th</sup> of August, indicating successful fledging from this nest.

To the north of the site, on the 4<sup>th</sup> of April, a male was recorded foraging indicating likely occupancy of a territory. On the 3<sup>rd</sup> of May, a male was recorded carrying prey at [REDACTED] in the vicinity of the historic 2021 nest off site, likely as part of courtship rather than provisioning young given the early date. On the 4<sup>th</sup> of May, a pair were recorded in courtship and display flight in the same area. The 10<sup>th</sup> of May was the last time a female was observed in the northern area at Killea in flight. On the 24<sup>th</sup> of May, the male from the southern pair was observed in flight with the northern male. The last observation of a male to the north was on the 16<sup>th</sup> of June flying uphill at Dough Mountain. It is unlikely breeding was successful for this northern pair given the lack of observations confirming breeding, such as provisioning flights or fledged chicks.

It is noted that 2021 was the last time a nest was confirmed in this northern area ([REDACTED]). It is further noted that the forestry operations (felling) in this area in 2022 may have made the area unsuitable for nesting. The male from this pair was recorded foraging on-site to the north, however as a nest was not located FVPs were not carried out. All other previously identified historic nest sites to the north and south of the site (i.e. To the north, on site at [REDACTED] To the south, historic nest sites on site around [REDACTED], and off site at [REDACTED]) were unoccupied.

Sparrowhawk were confirmed breeding in two locations off site at Raheelin, and an adult female was seen at a historic nest site on site west of Killea. Additionally, the recently fledged juvenile kestrel present on site in August indicated breeding in the wider area. The nest site was not located.

Red grouse were recorded as probable breeding on site or within 500m of the site at Dough Mountain and Killea with the presence of calling birds. Snipe were also probable breeders with displaying birds recorded within 500m of the site at Killea, Tawnyfeacle, and Dough Mountain, and off site at Raheelin. Woodcock was recorded on one occasion in suitable breeding habitat at Tawnyfeacle indicating possible breeding.

Other birds of conservation concern recorded during the surveys were white-tailed eagle, golden plover and merlin. These species were observed on site or within 500m of the site during the breeding season. There was a low frequency of observations, and no breeding behaviour was observed.

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# APPENDIX 1

*FIGURES*



### Map Legend

- Site Boundary  
(500m radius of 14T Layout)
- 500m radius of  
site boundary
- ▲ VP Locations



Drawing Title

Vantage Point (VP) Locations

Project Title

Lissinagroagh

Drawn By

AO'D

Checked By

SD

Project No.

200217-h

Drawing No.

Fig 1.0

Scale

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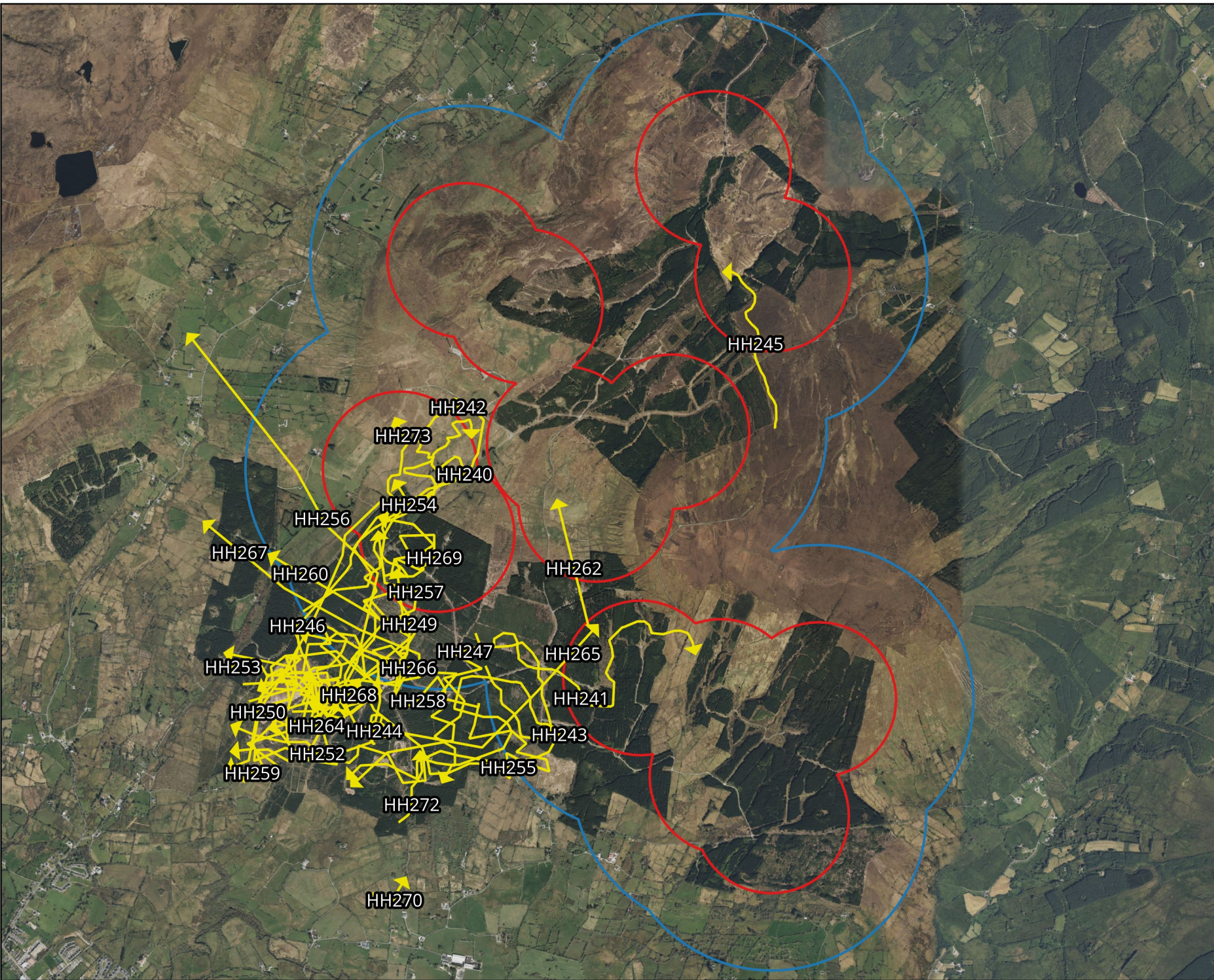
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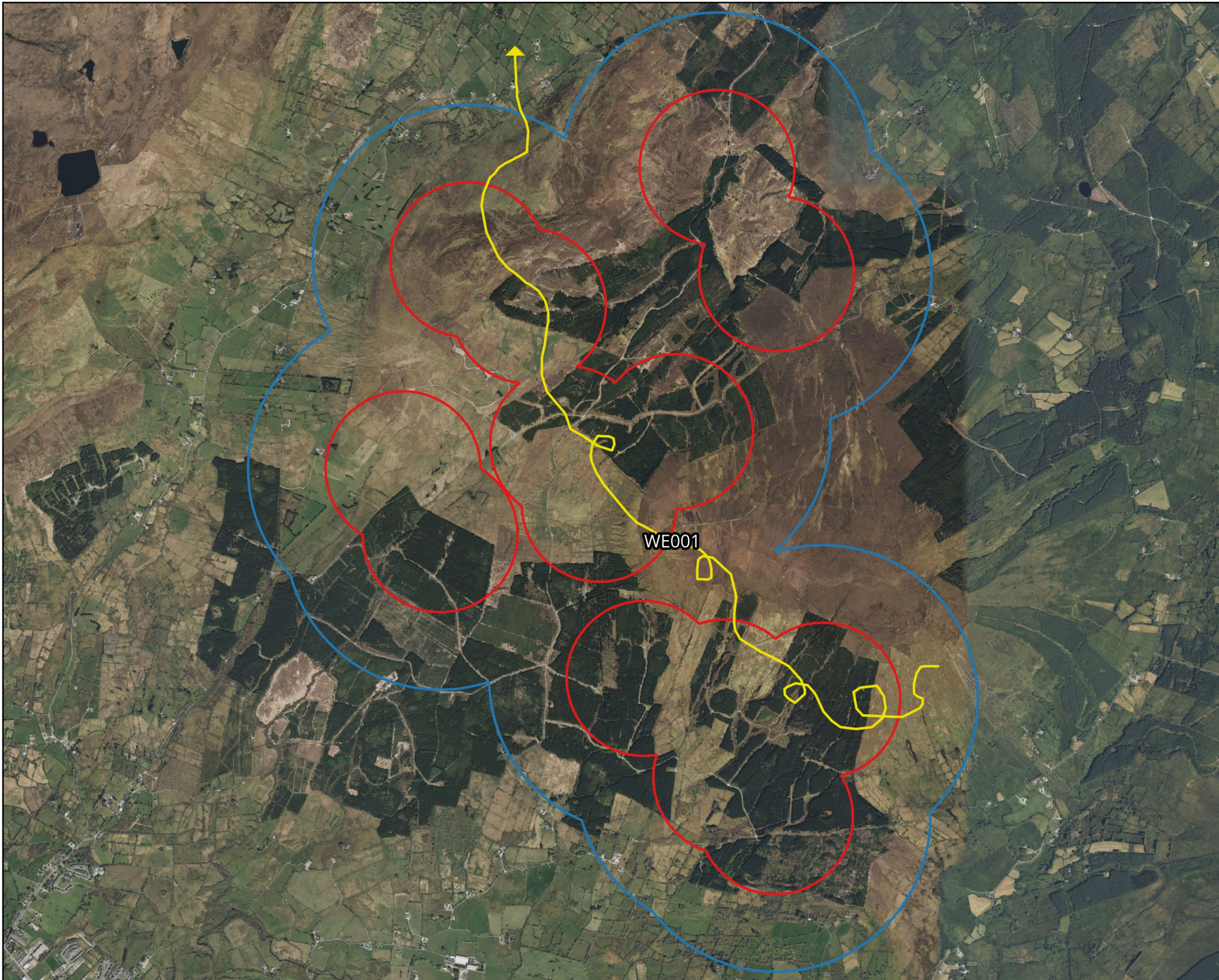
- Site Boundary
- 500m radius of site boundary
- Flightlines



North

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Drawing Title	
Hen Harrier VP Flightlines	
Project Title	
Lissinagroagh	
Drawn By	Checked By
AO'D	SD
Project No.	Drawing No.
200217-h	Fig 1.1
Scale	Date
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### Map Legend

- Site Boundary
- 500m radius of site boundary
- Flightlines



Drawing Title

White-tailed eagle VP Flightlines

Project Title

Lissinagroagh

Drawn By

AO'D

Checked By

SD

Project No.

200217-h

Drawing No.

Fig 1.2

Scale

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Date

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- Site Boundary
- 500m radius of site boundary
- ➔ Flightlines



Drawing Title	
<b>Merlin VP Flightlines</b>	
Project Title	
<b>Lissinagroagh</b>	
Drawn By	Checked By
<b>AO'D</b>	<b>SD</b>
Project No.	Drawing No.
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Scale	Date
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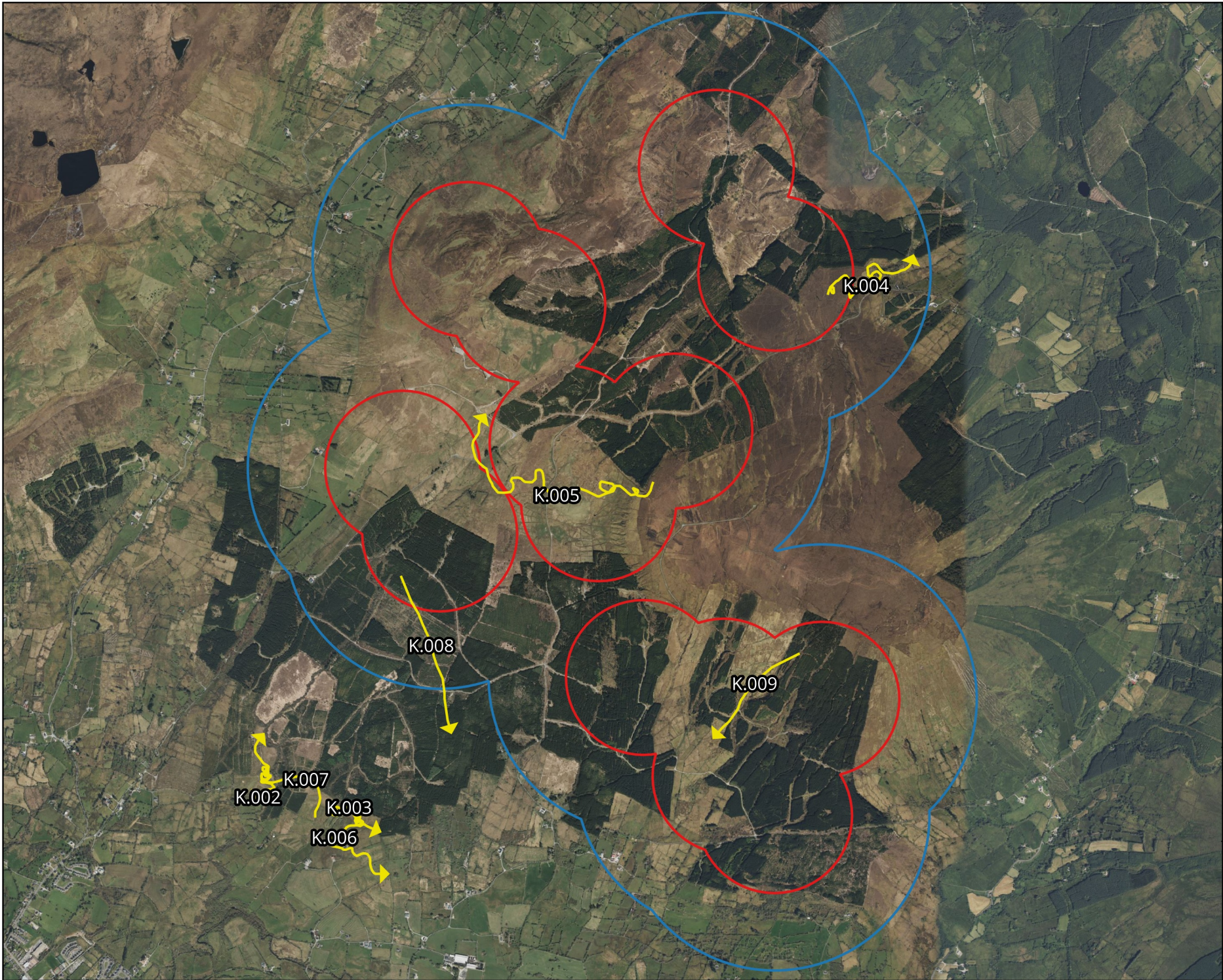
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- 500m radius of site boundary
- ➔ Flightlines

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Drawing Title	
Red grouse VP Flightlines	
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Project No.	Drawing No.
200217-h	Fig 1.4
Scale	Date
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**Map Legend**

- Site Boundary
- 500m radius of site boundary
- Flightlines



Drawing Title

**Kestrel VP Flightlines**

Project Title

**Lissinagroagh**

Drawn By

**AO'D**

Checked By

**SD**

Project No.

**200217-h**

Drawing No.

**Fig 1.5**

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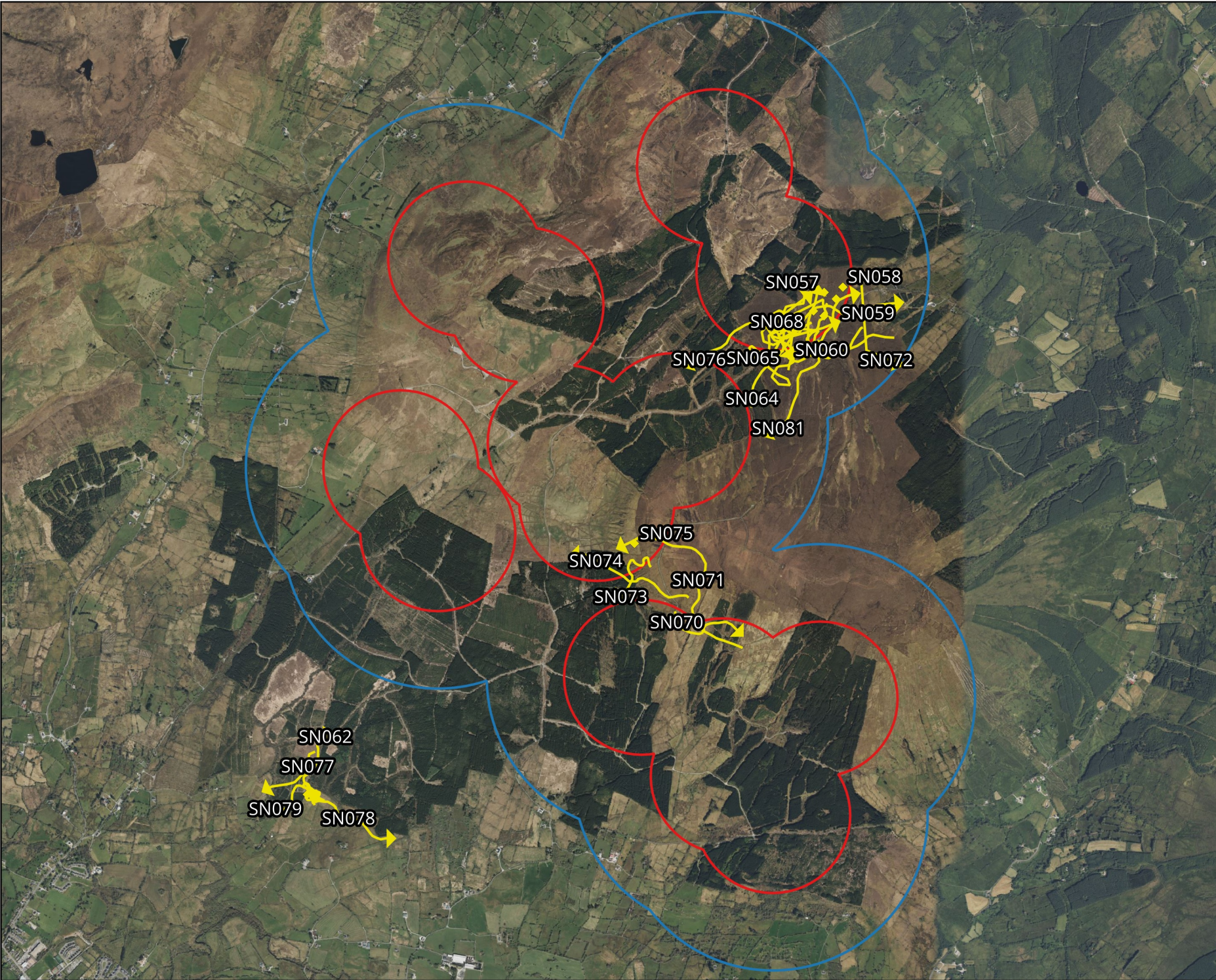
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**Map Legend**

- Site Boundary
- 500m radius of site boundary
- Flightlines



Drawing Title	
Snipe VP Flightlines	
Project Title	
Lissinagroagh	
Drawn By	Checked By
AO'D	SD
Project No.	Drawing No.
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Scale	Date
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Drawing Title

**Woodcock VP Flightlines**

Project Title

**Lissinagroagh**

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**AO'D**

Checked By

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Project No.

**200217-h**

Drawing No.

**Fig 1.7**

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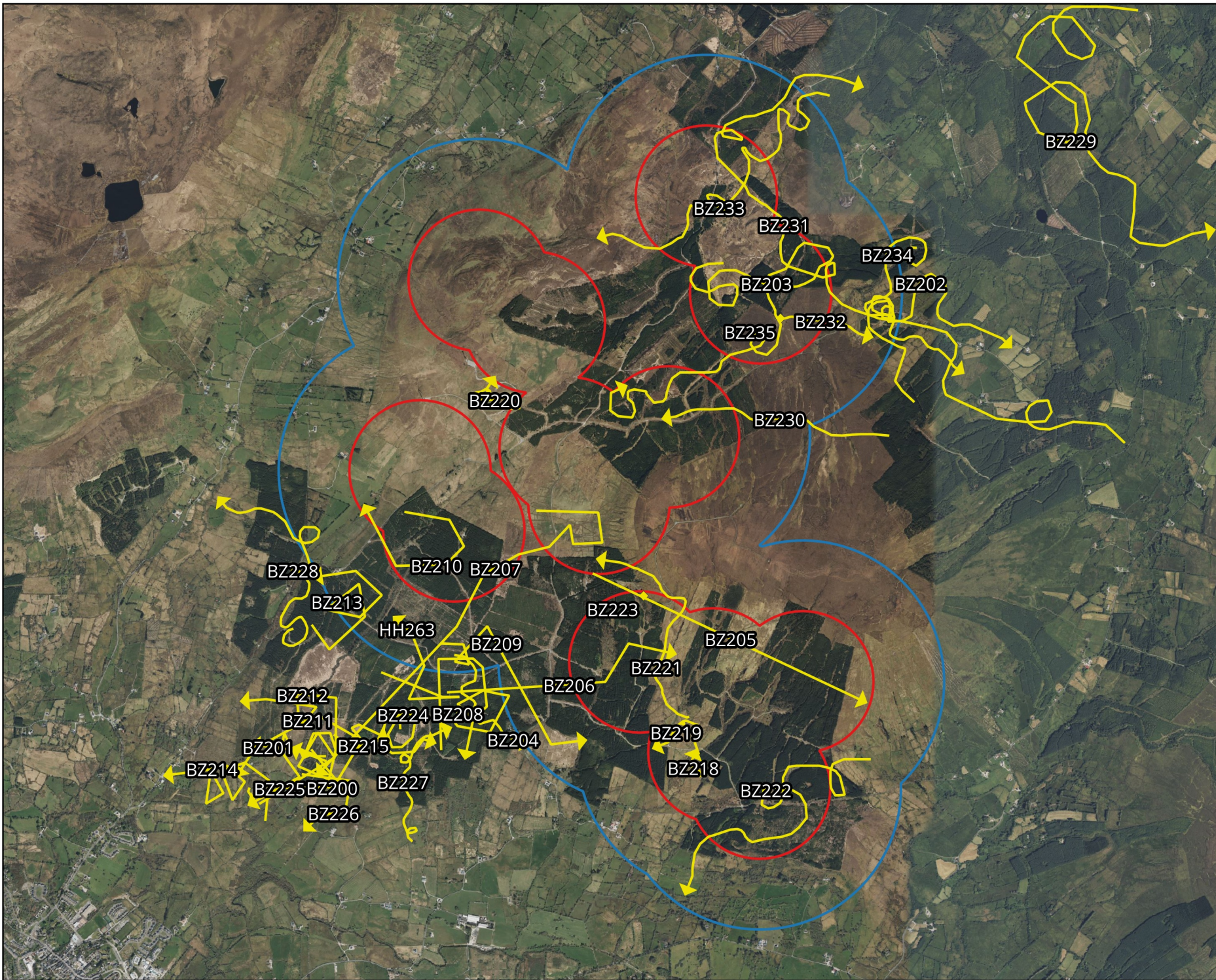
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- Flightlines



Drawing Title

Buzzard VP Flightlines

Project Title

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Project No.

200217-h

Drawing No.

Fig 1.8

Scale

1:35,000

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- Flightlines



Drawing Title	
Sparrowhawk VP Flightlines	
Project Title	
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AO'D	SD
Project No.	Drawing No.
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Drawing Title

Breeding Raptor  
VP Locations 2023

Project Title

Lissinagroagh

Drawn By

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Project No.

200217-h

Drawing No.

Fig 2.0

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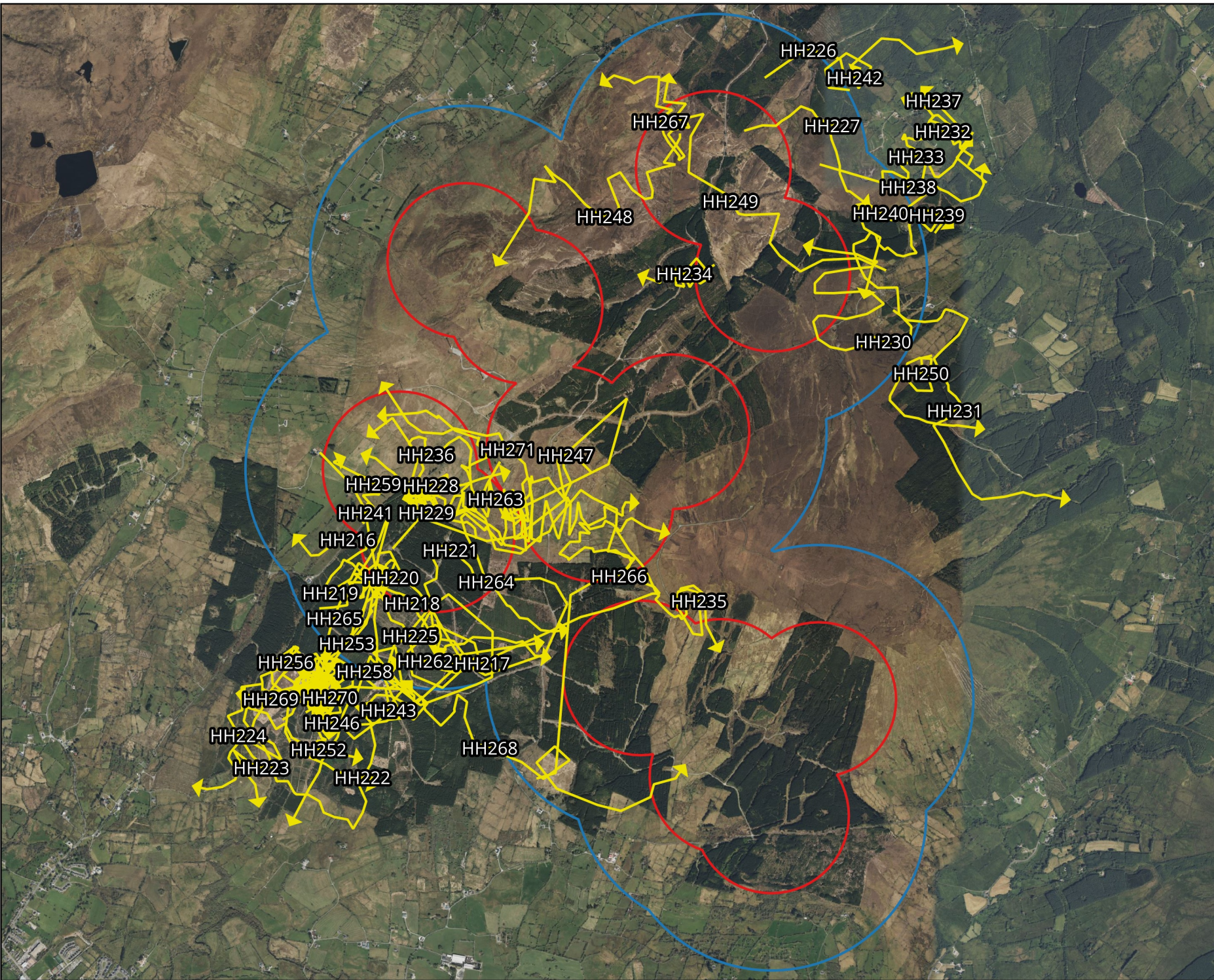
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### Map Legend


- Site Boundary
- 500m radius of site boundary
- Flightlines



Drawing Title  
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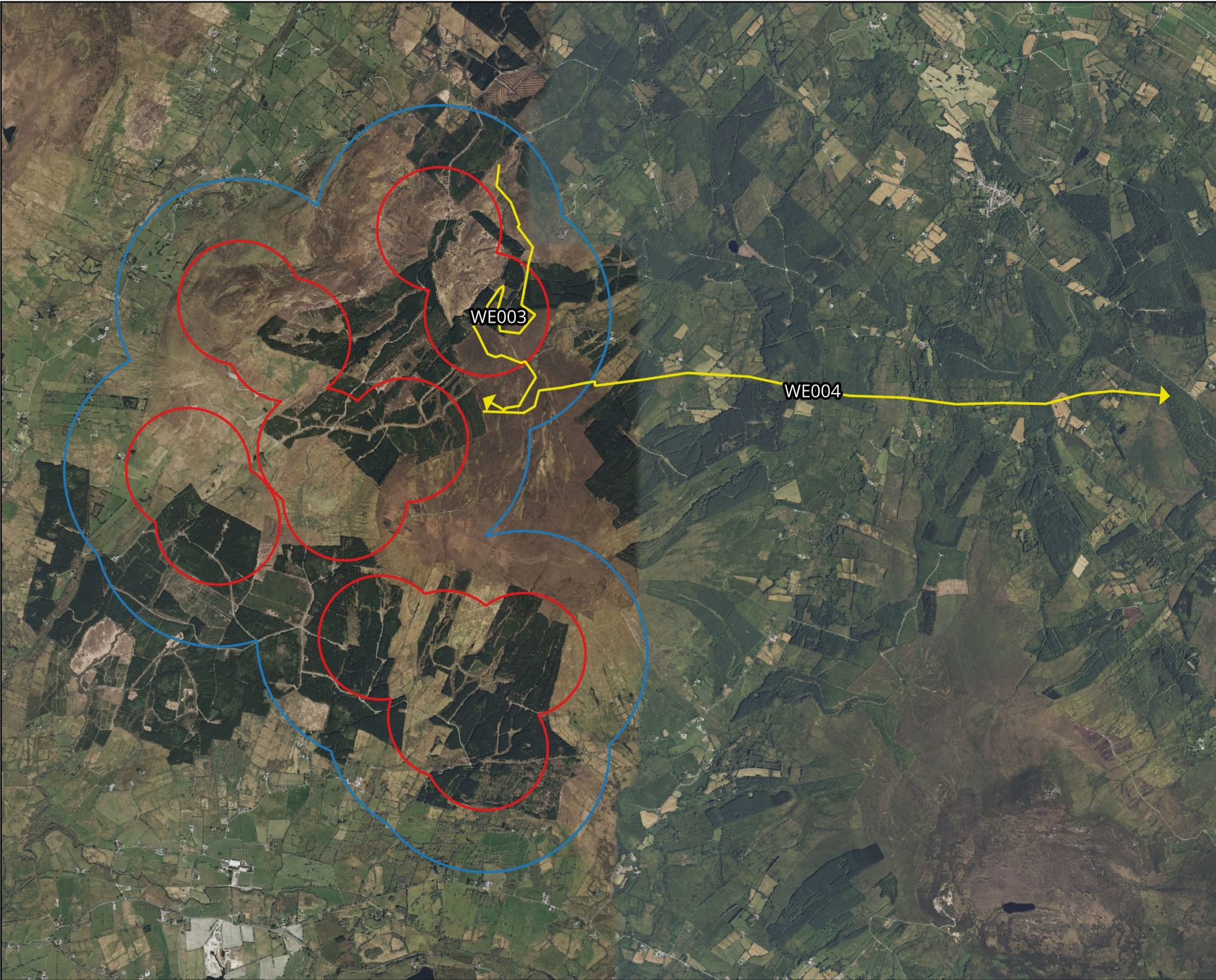
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Scale <b>1:32,000</b>	Date <b>08.10.24</b>



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Drawing Title	
White-tailed eagle Breeding Raptor Flightlines	
Project Title	
Lissinagroagh	
Drawn By	Checked By
AO'D	SD
Project No.	Drawing No.
200217-h	Fig 2.2
Scale	Date
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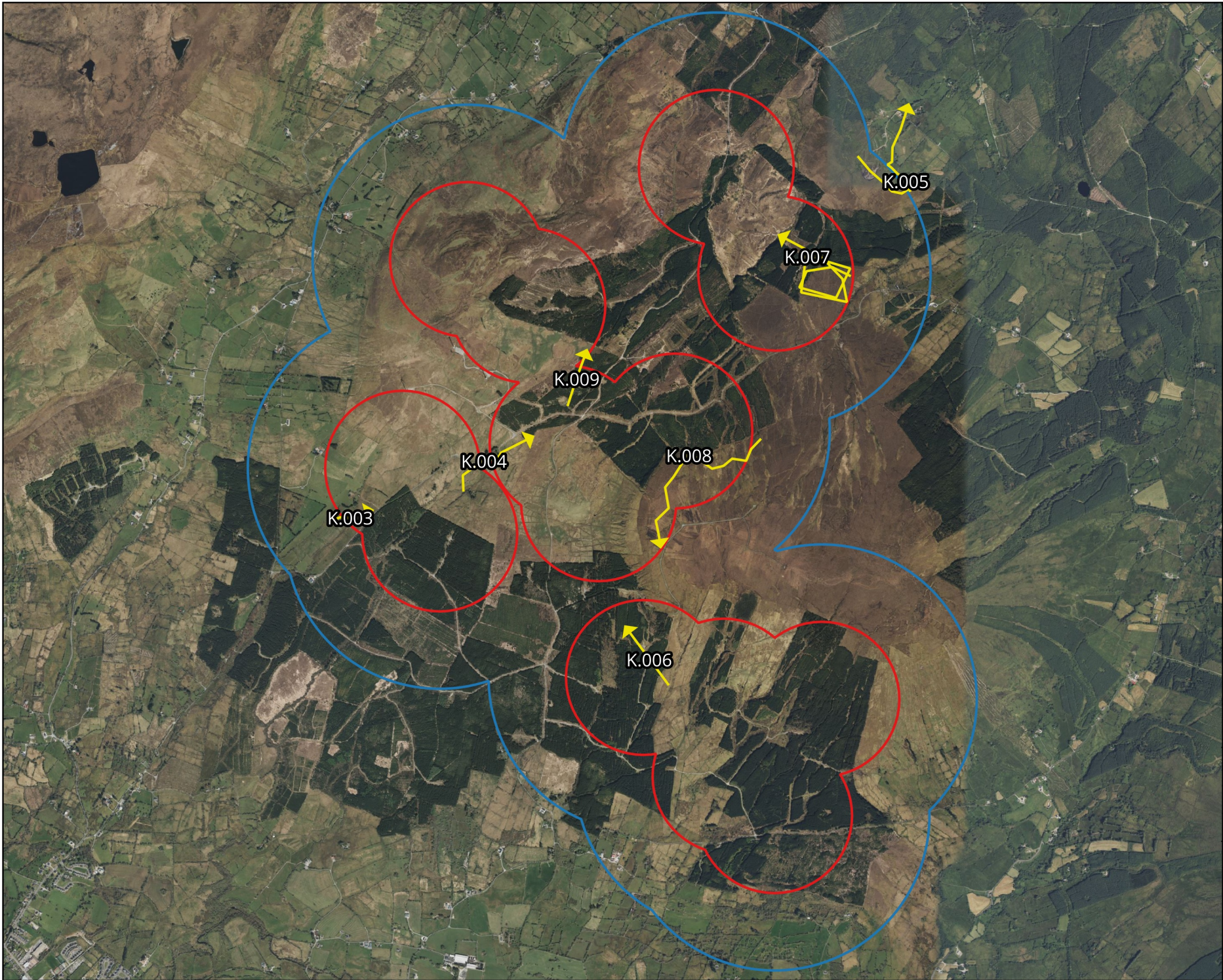
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- Site Boundary
- 500m radius of site boundary
- ➔ Flightlines



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Drawn By	Checked By
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Project No.	Drawing No.
<b>200217-h</b>	<b>Fig 2.3</b>
Scale	Date
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Drawing Title

**Kestrel Breeding Raptor Flightlines**

Project Title

**Lissinagroagh**

Drawn By

**AO'D**

Checked By

**SD**

Project No.

**200217-h**

Drawing No.

**Fig 2.4**

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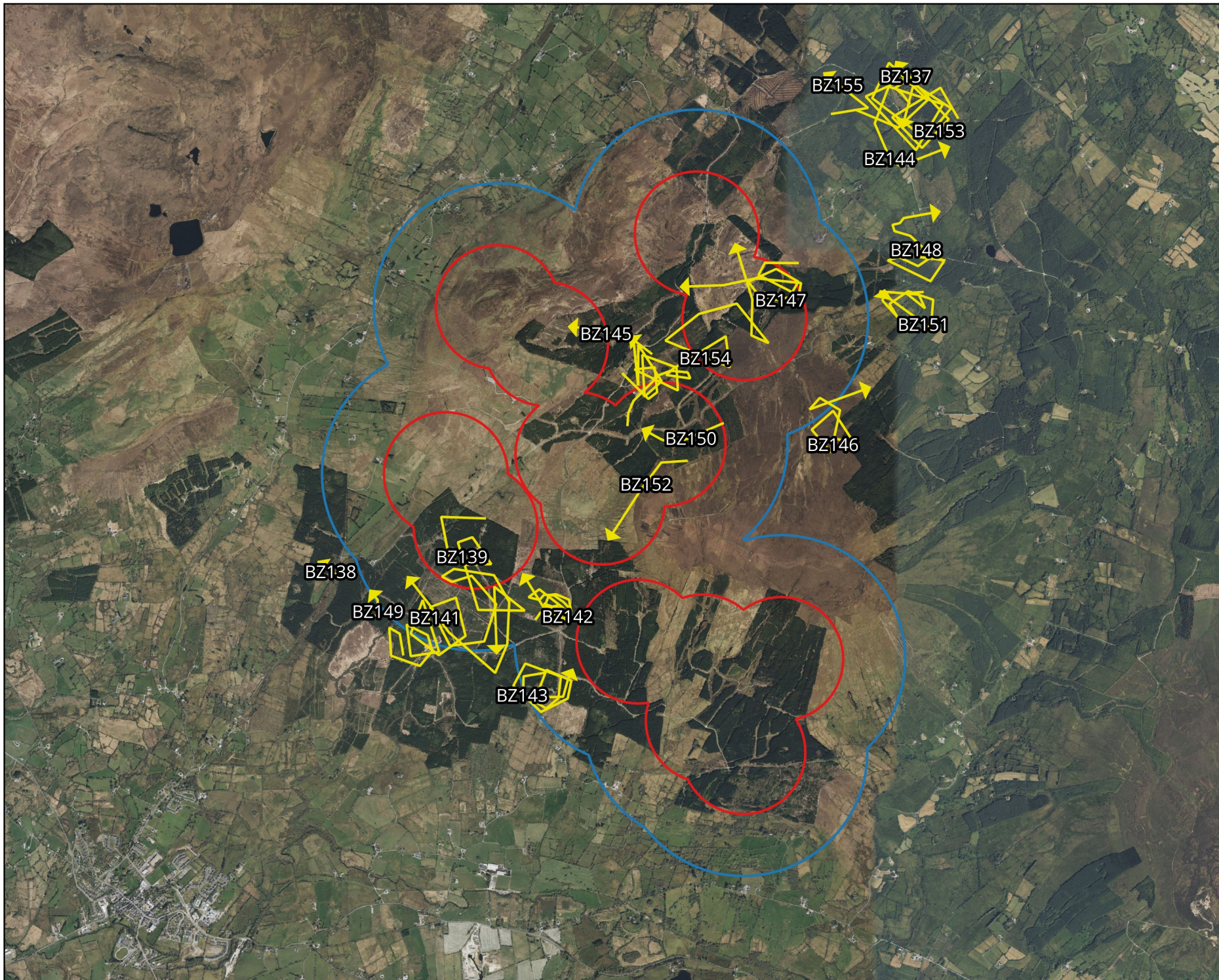
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- Flightlines



Drawing Title

**Buzzard Breeding Raptor Flightlines**

Project Title

**Lissinagroagh**

Drawn By

**AO'D**

Checked By

**SD**

Project No.

**200217-h**

Drawing No.

**Fig 2.5**

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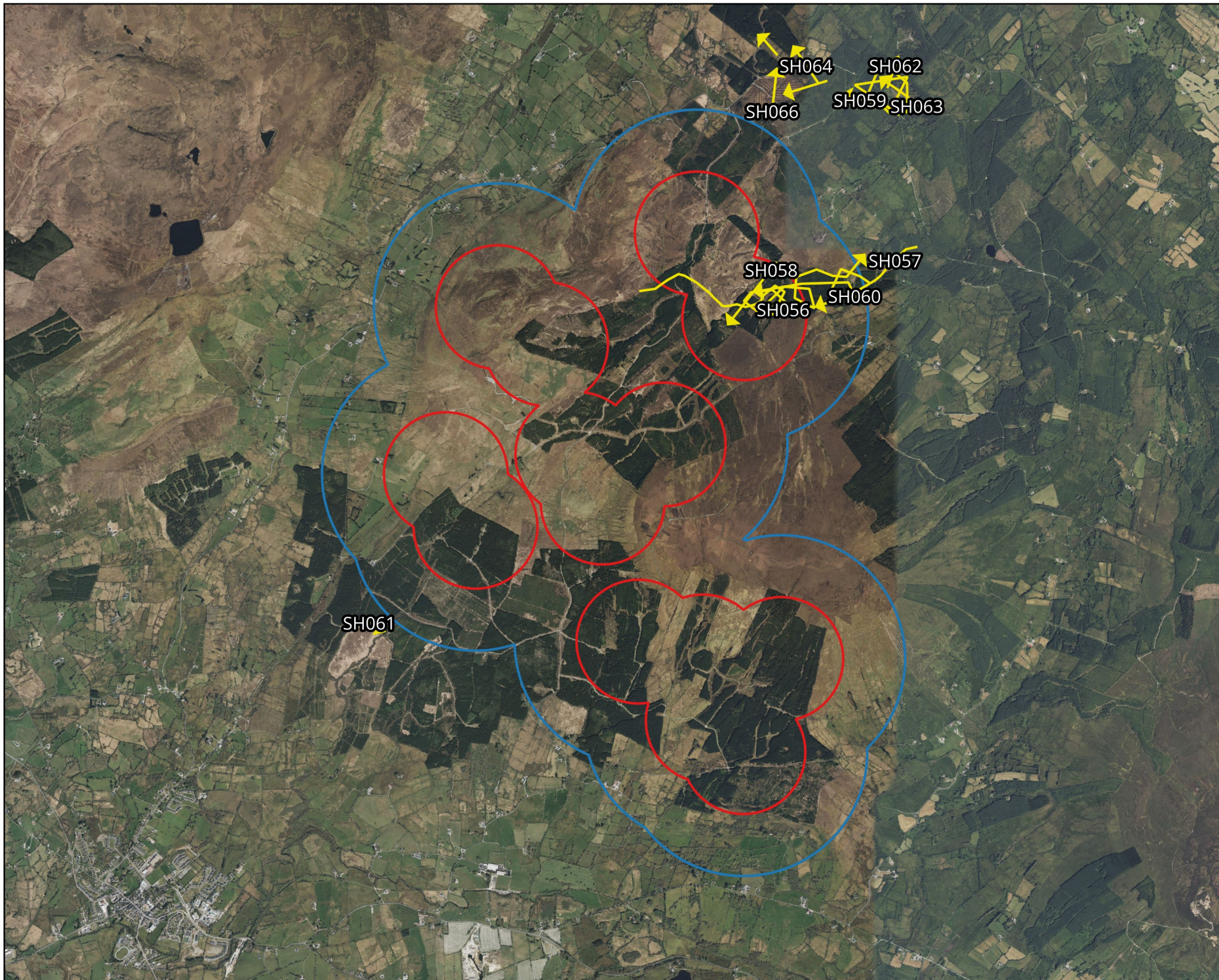
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- Site Boundary
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- Flightlines



Drawing Title

Sparrowhawk Breeding Raptor Flightlines

Project Title

Lissinagroagh

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Project No.

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Drawing No.

Fig 2.6

Scale

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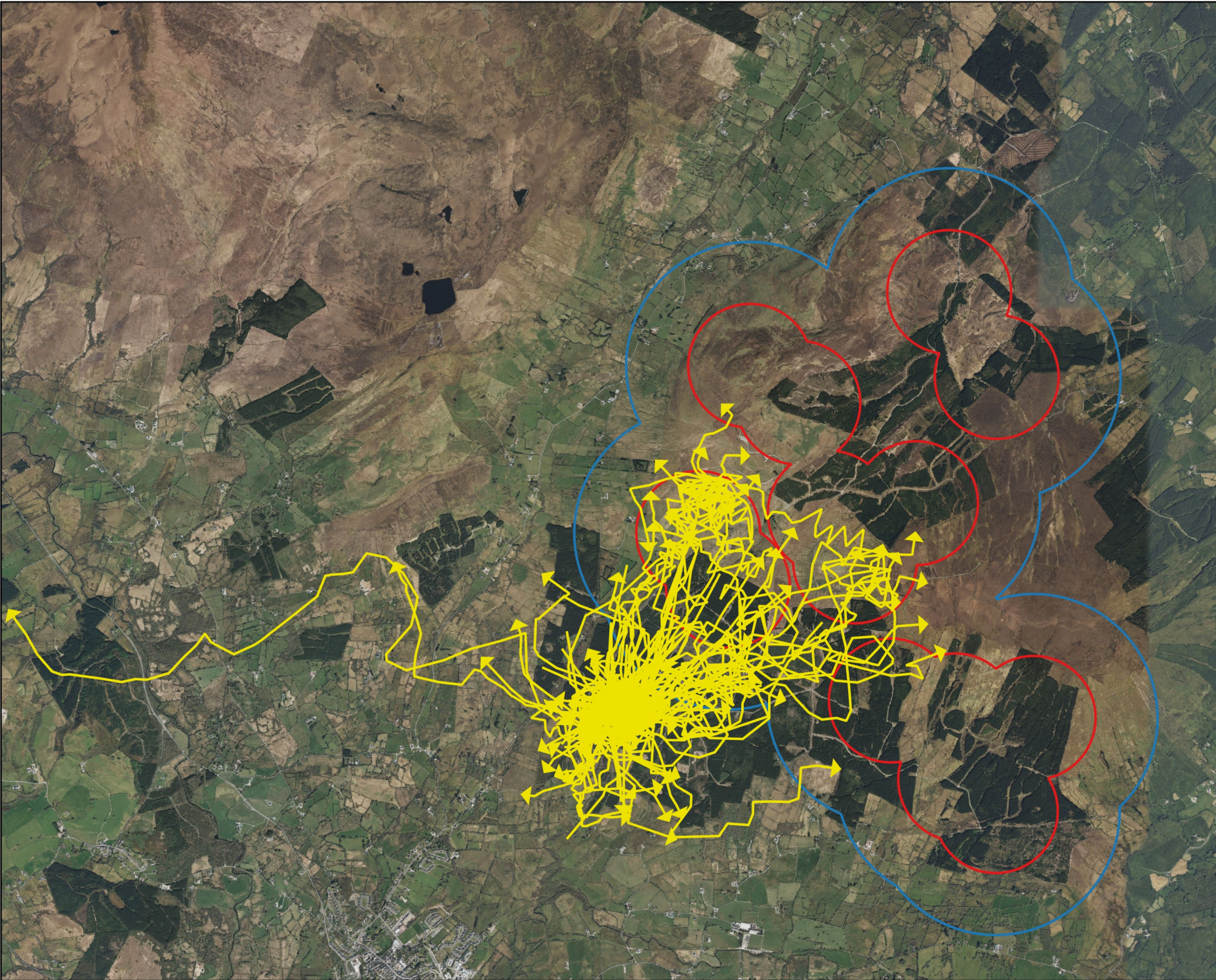
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Project Title	
<b>Lissinagroagh</b>	
Drawn By	Checked By
<b>AO'D</b>	<b>SD</b>
Project No.	Drawing No.
<b>200217-h</b>	<b>Fig 3.0</b>
Scale	Date
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- Site Boundary
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- Flightlines



Drawing Title

Hen Harrier Foraging VP Flightlines

Project Title

Lissinagroagh

Drawn By

AO'D

Checked By

SD

Project No.

200217-h

Drawing No.

Fig 3.1

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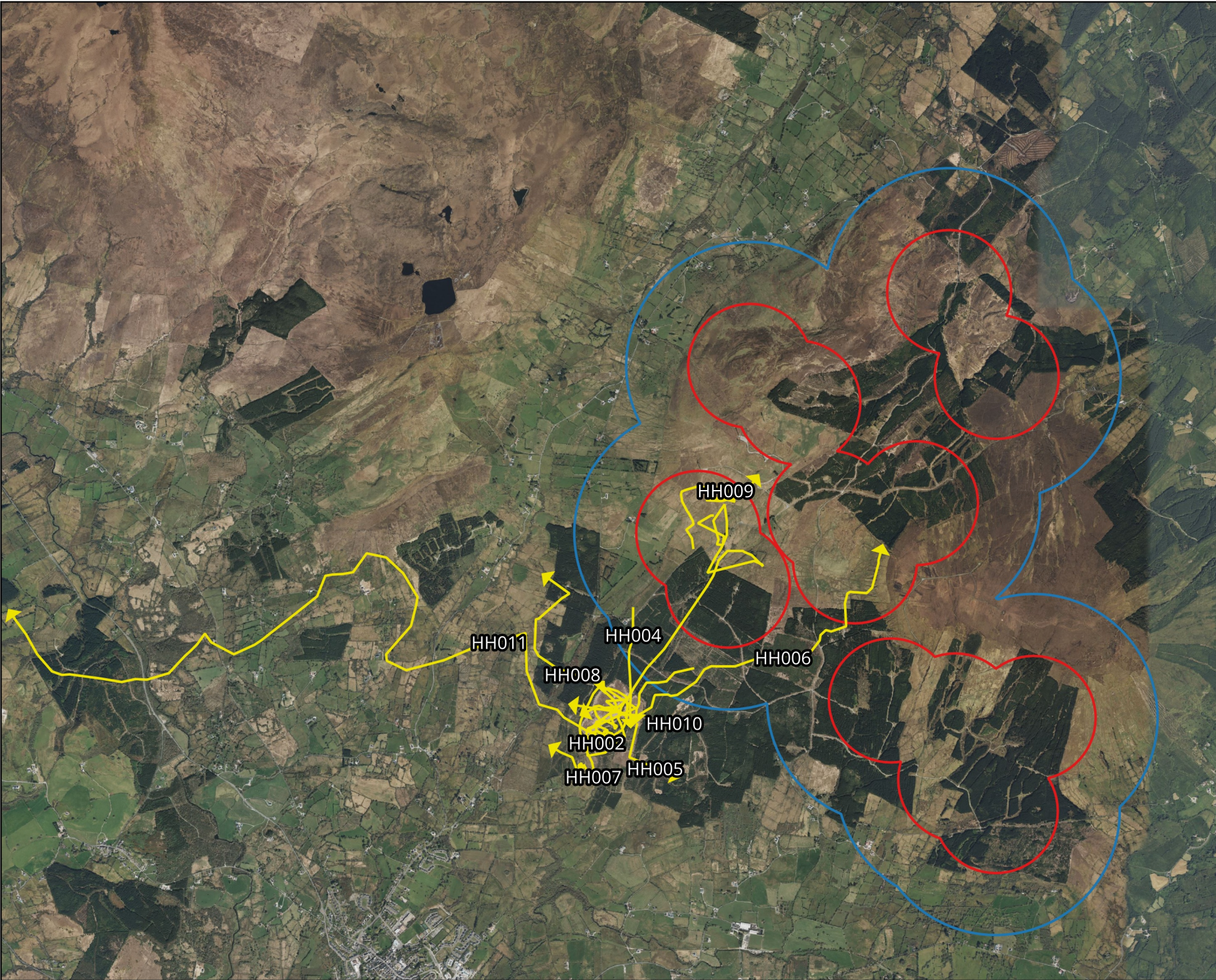
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- Site Boundary
- 500m radius of site boundary
- Flightlines



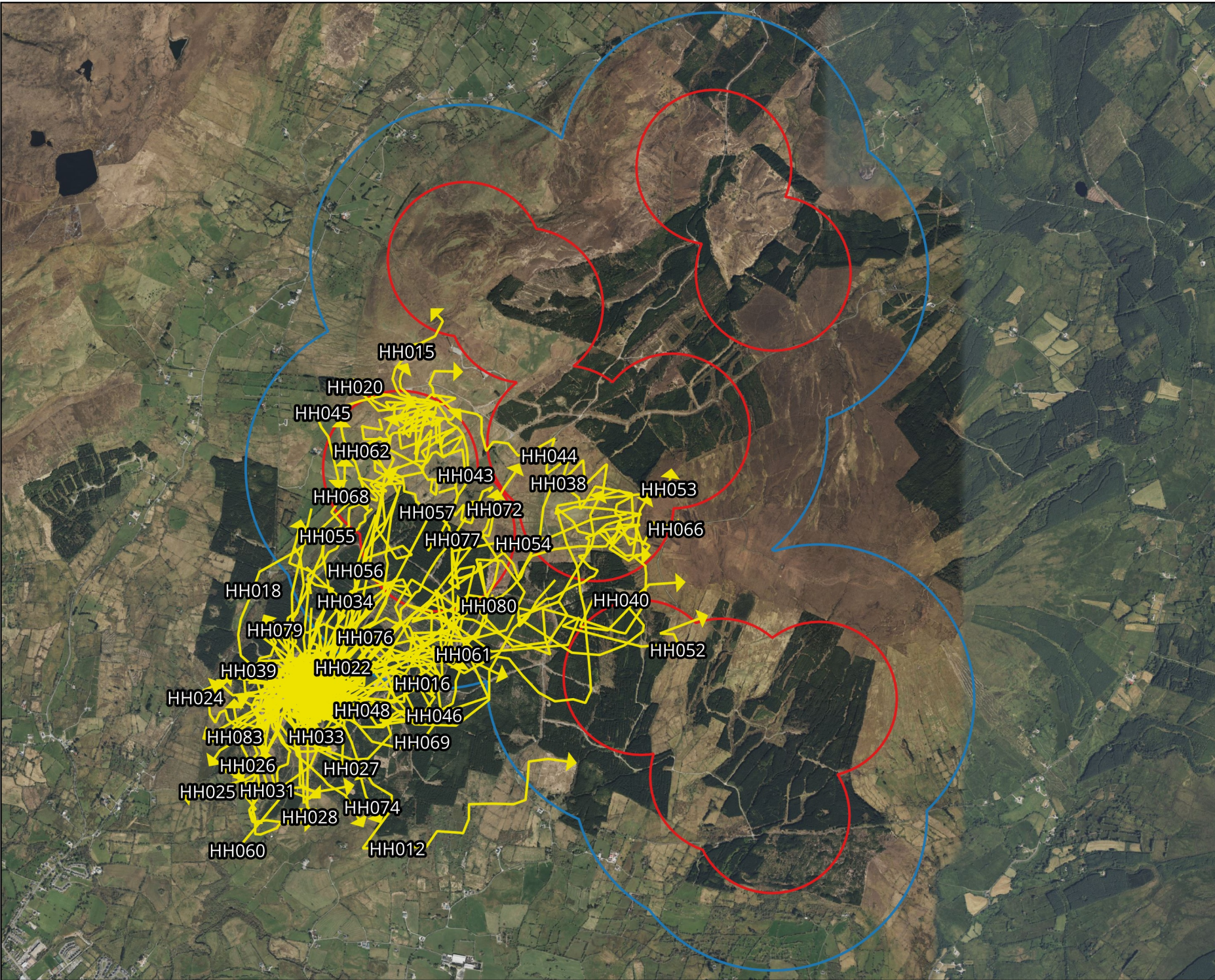
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 June 2023**

Project Title  
**Lissinagroagh**

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Scale <b>1:40,000</b>	Date <b>08.10.24</b>

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Drawing Title  
**Hen Harrier Foraging VP Flightlines  
 July 2023**

Project Title  
**Lissinagroagh**

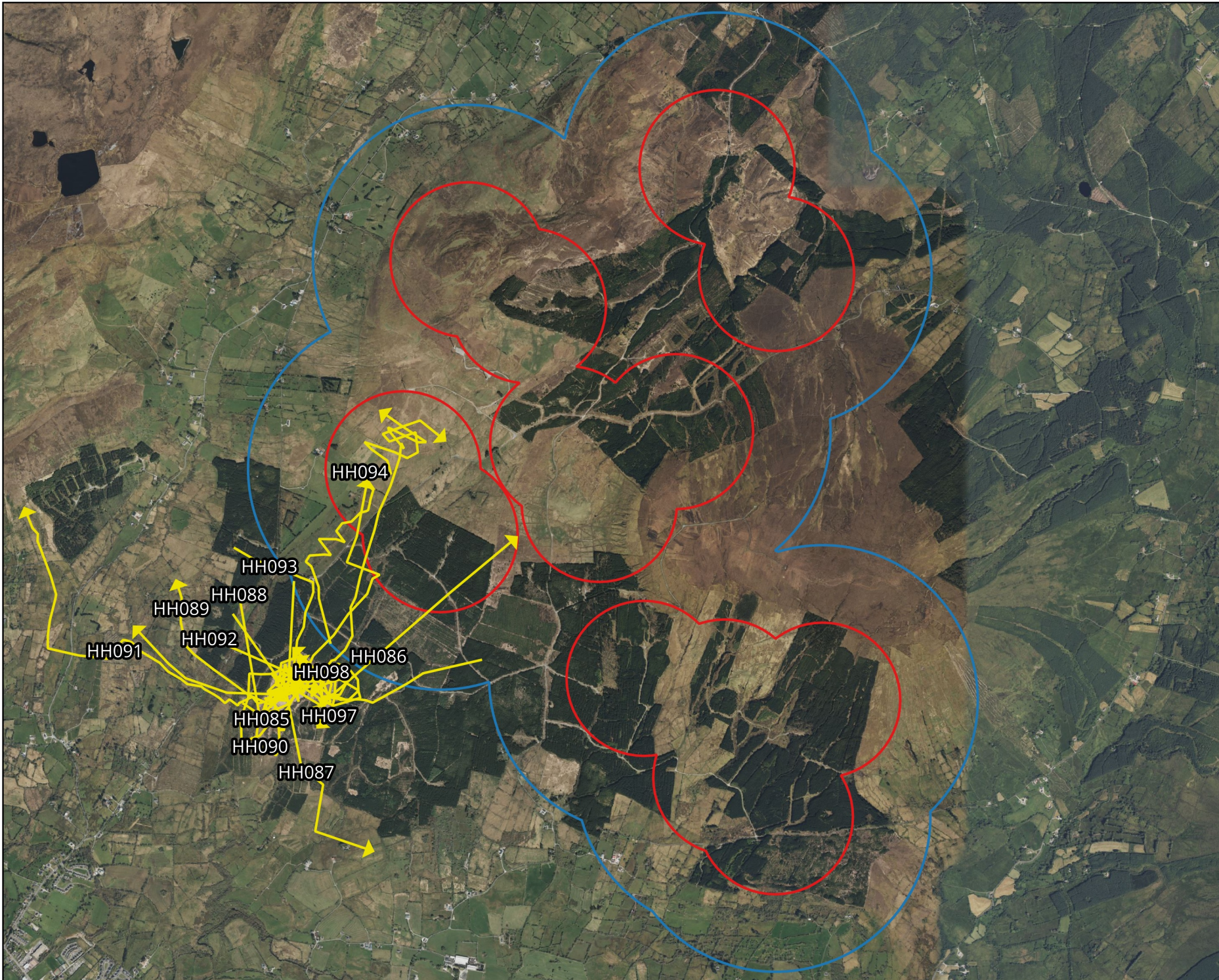
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Project No. <b>200217-h</b>	Drawing No. <b>Fig 3.1.2</b>
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Scale <b>1:32,000</b>	Date <b>08.10.24</b>
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**Map Legend**

- Site Boundary
- 500m radius of site boundary
- Flightlines



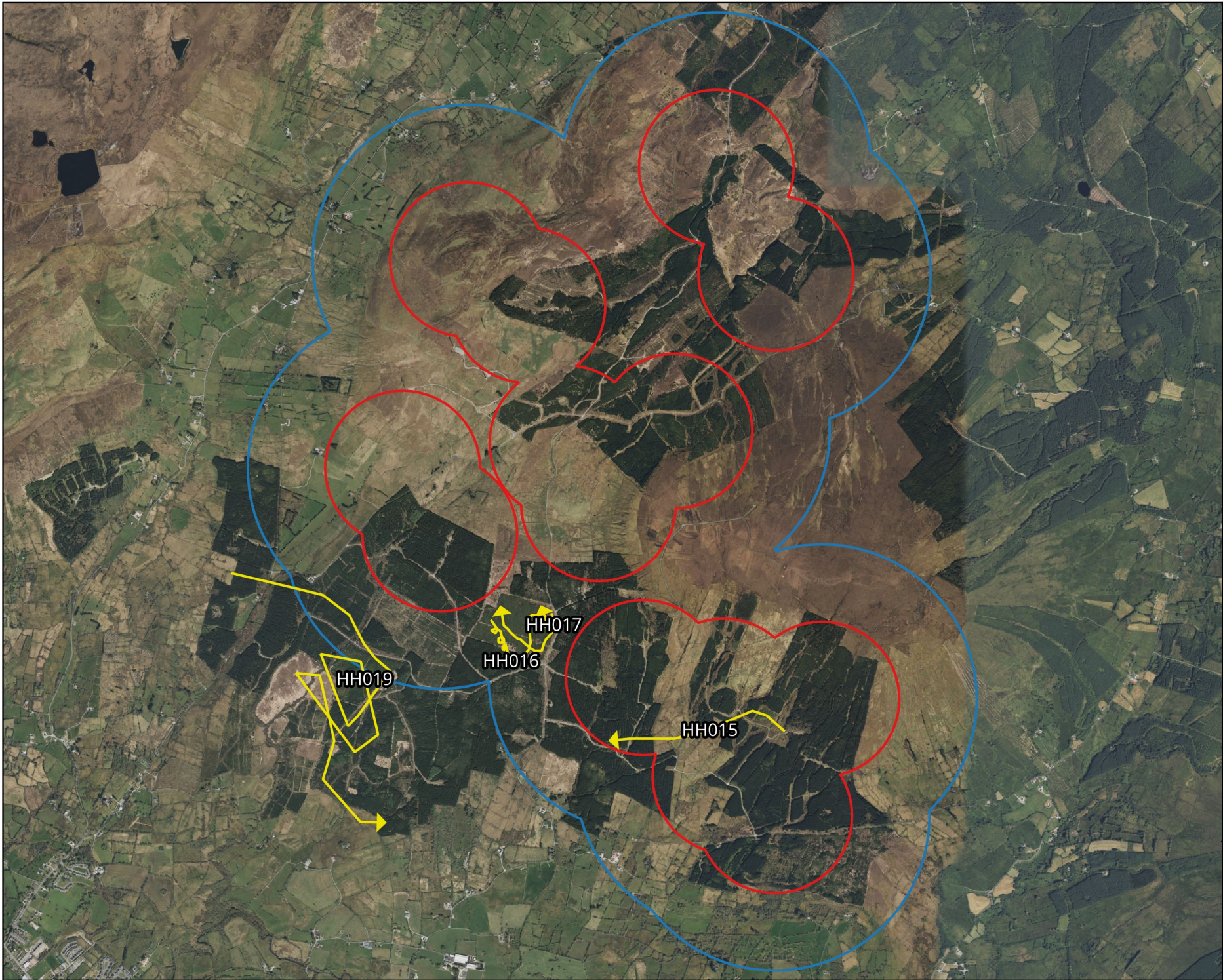
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Project Title  
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**Map Legend**

- Site Boundary
- 500m radius of site boundary
- Flightlines



Drawing Title	
<b>Hen Harrier Incidental Observations</b>	
Project Title	
<b>Lissinagroagh</b>	
Drawn By	Checked By
AO'D	SD
Project No.	Drawing No.
200217-h	Fig 4.0
Scale	Date
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**Map Legend**

- Site Boundary
- 500m radius of site boundary
- Flightlines



Drawing Title	
<b>Red Grouse Incidental Observations</b>	
Project Title	
<b>Lissinagroagh</b>	
Drawn By	Checked By
AO'D	SD
Project No.	Drawing No.
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Scale	Date
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**Map Legend**

- Site Boundary
- 500m radius of site boundary
- Flightlines



Drawing Title

**Kestrel Incidental Observations**

Project Title

**Lissinagroagh**

Drawn By

**AO'D**      Checked By **SD**

Project No.

**200217-h**      Drawing No. **Fig 4.2**

Scale

**1:32,000**      Date **08.10.24**

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**Map Legend**

- Site Boundary
- 500m radius of site boundary
- Flightlines



Drawing Title  
**Snipe Incidental Observations**

Project Title  
**Lissinagroagh**

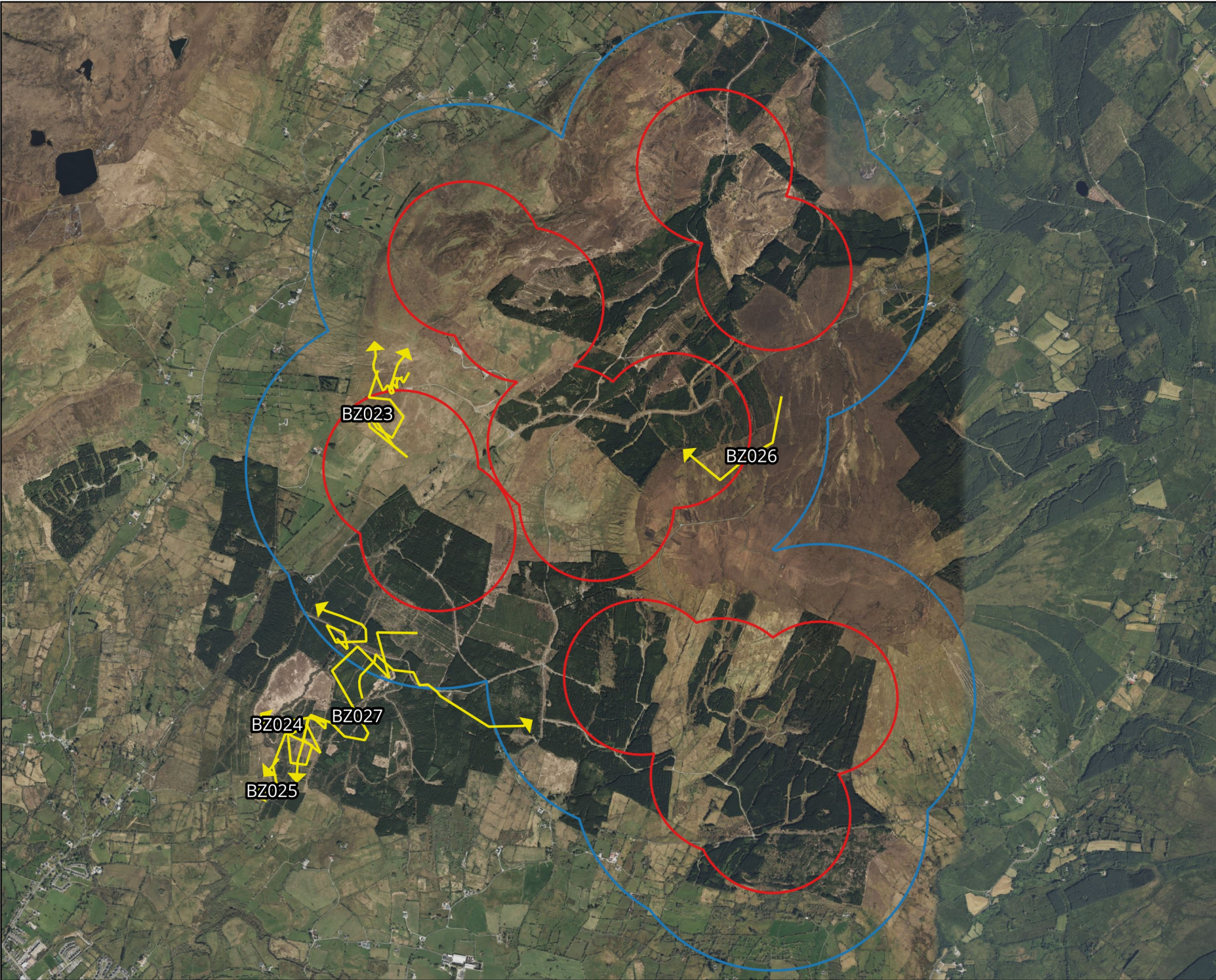
Drawn By <b>AO'D</b>	Checked By <b>SD</b>
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Project No. <b>200217-h</b>	Drawing No. <b>Fig 4.3</b>
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Scale <b>1:32,000</b>	Date <b>08.10.24</b>
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**Map Legend**

- Site Boundary
- 500m radius of site boundary
- Flightlines



Drawing Title

**Buzzard Incidental Observations**

Project Title

**Lissinagroagh**

Drawn By

**AO'D**

Checked By

**SD**

Project No.

**200217-h**

Drawing No.

**Fig 4.4**

Scale

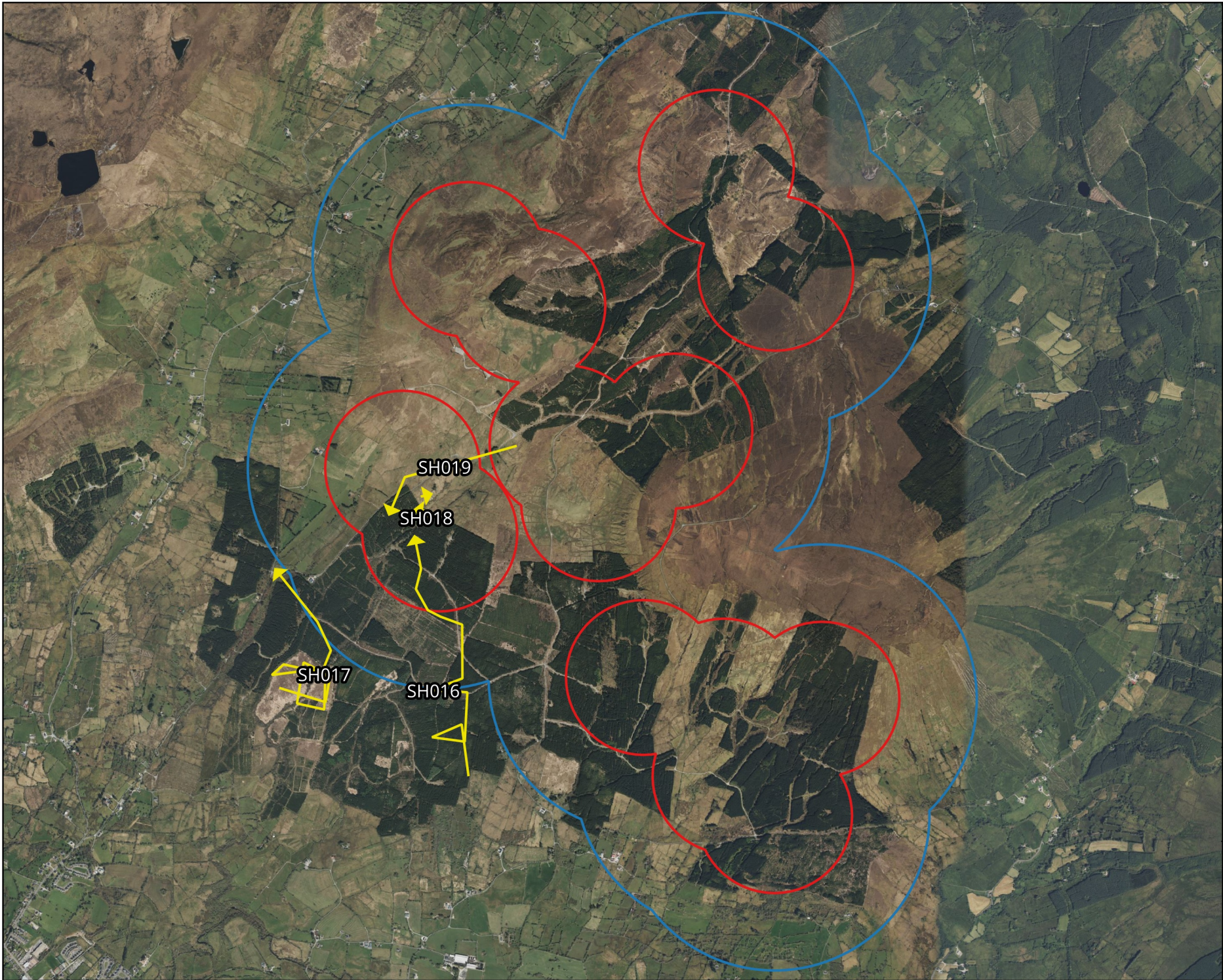
**1:32,000**

Date

**08.10.24**

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**Map Legend**

- Site Boundary
- 500m radius of site boundary
- Flightlines



Drawing Title	
<b>Sparrowhawk Incidental Observations</b>	
Project Title	
<b>Lissinagroagh</b>	
Drawn By	Checked By
<b>AO'D</b>	<b>SD</b>
Project No.	Drawing No.
<b>200217-h</b>	<b>Fig 4.5</b>
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<b>1:32,000</b>	<b>08.10.24</b>
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## APPENDIX 2

*SURVEY DATA*

## Table of Tables

<i>Appendix 2 Table 1 Vantage Point Survey Effort.....</i>	<i>2</i>
<i>Appendix 2 Table 2 Breeding Raptor Survey Effort.....</i>	<i>8</i>
<i>Appendix 2 Table 3 Foraging Vantage Point Survey Effort.....</i>	<i>13</i>
<i>Appendix 2 Table 4 Vantage Point Survey Data.....</i>	<i>15</i>
<i>Appendix 2 Table 5 Breeding Raptor Survey Data.....</i>	<i>36</i>
<i>Appendix 2 Table 6 Foraging Vantage Point Data.....</i>	<i>43</i>
<i>Appendix 2 Table 7 Incidental Survey Data.....</i>	<i>50</i>

Appendix 2 Table 1 Vantage Point Survey Effort

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
13/04/2023	Vantage Point Surveys	VP1	3:00 starting at 05:40	Visibility: good; Wind speed and direction: strong breeze W; Cloud cover and height: 3% 150-500m; Rain: light showers; Frost: none; Snow: none	regular but brief heavy showers, some sleet, Male HH seen briefly.	RV
13/04/2023	Vantage Point Surveys	VP1	3:00 starting at 09:10	Visibility: good; Wind speed and direction: strong breeze W; Cloud cover and height: 3% 150-500m; Rain: light showers; Frost: none; Snow: none	regular but brief heavy showers, some sleet, Male HH seen briefly.	RV
20/04/2023	Vantage Point Survey	VP3	3:00 starting at 05:20	Visibility: good; Wind speed and direction: moderate breeze E; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		KB
20/04/2023	Vantage Point Survey	VP3	3:00 starting at 08:50	Visibility: good; Wind speed and direction: moderate breeze E; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		KB
20/04/2023	Vantage Point Surveys	VP2	3:00 starting at 05:20		Cloudless skies, male and female HH seen several times	RV
20/04/2023	Vantage Point Surveys	VP2	3:00 starting at 08:50		Cloudless skies, male and female HH seen several times	RV
27/04/2023	Vantage Point Surveys	VP4	3:00 starting at 05:00	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none	Early WK and a BZ, VP now poor with surrounding conifers now restricting views	RV
27/04/2023	Vantage Point Surveys	VP4	3:00 starting at 08:30	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none	Early WK and a BZ, VP now poor with surrounding conifers now restricting views	RV

10/05/2023	Vantage Point Survey	VP4	3:00 starting at 16:10	Visibility: moderate; Wind speed and direction: moderate breeze WNW; Cloud cover and height: 33-66% 150-500m; Rain: light showers; Frost: none; Snow: none		NM
10/05/2023	Vantage Point Survey	VP4	3:00 starting at 19:40	Visibility: moderate; Wind speed and direction: moderate breeze WNW; Cloud cover and height: 33-66% 150-500m; Rain: light showers; Frost: none; Snow: none		NM
18/05/2023	Vantage Point Survey	VP3	3:00 starting at 16:20	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none	Largely fair throughout with periods of sunshine. Gentle W breeze. Warm and humid, 10 - 15°C. Dusk survey. Sunset - 21:31	NM
18/05/2023	Vantage Point Survey	VP3	3:00 starting at 19:50	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none	Largely fair throughout with periods of sunshine. Gentle W breeze. Warm and humid, 10 - 15°C. Dusk survey. Sunset - 21:31	NM
30/05/2023	Vantage Point Survey	VP2	3:00 starting at 16:00	Visibility: good; Wind speed and direction: light air NE; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		KB
30/05/2023	Vantage Point Survey	VP2	3:00 starting at 19:53	Visibility: good; Wind speed and direction: gentle breeze NE; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		KB
31/05/2023	Vantage Point Survey	VP1	3:00 starting at 16:00	Visibility: good; Wind speed and direction: gentle breeze NE; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		KB
31/05/2023	Vantage Point Survey	VP1	3:00 starting at 19:54	Visibility: good; Wind speed and direction: gentle breeze NE; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		KB
21/06/2023	Vantage Point Survey	1	3:00 starting at 09:30	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		KB
21/06/2023	Vantage Point Survey	1	3:00 starting at 13:10	Visibility: moderate; Wind speed and direction: moderate breeze W; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		KB
11/07/2023	Vantage Point Survey	2	3:00 starting at 11:00	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none	June survey	KB

11/07/2023	Vantage Point Survey	2	3:00 starting at 14:30	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none	June survey	KB
12/07/2023	Vantage Point Survey	3	3:00 starting at 11:30	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: 66-100% >500m; Rain: light showers; Frost: none; Snow: none	June survey	KB
12/07/2023	Vantage Point Survey	3	3:00 starting at 15:00	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: 66-100% >500m; Rain: light showers; Frost: none; Snow: none	June survey	KB
13/07/2023	Vantage Point Survey	4	3:00 starting at 11:00	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none	June survey	KB
13/07/2023	Vantage Point Survey	4	3:00 starting at 14:30	Visibility: good; Wind speed and direction: light breeze SW; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none	June survey	KB
17/07/2023	Vantage Point Survey	VP1	3:00 starting at 05:10	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 2% >500m; Rain: none; Frost: none; Snow: none	Thick fog for periods, some light showers	RV
17/07/2023	Vantage Point Survey	VP1	3:00 starting at 08:40	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 2% >500m; Rain: none; Frost: none; Snow: none	Thick fog for periods, some light showers	RV
20/07/2023	Vantage Point Survey	VP2	3:00 starting at 05:10	Visibility: poor; Wind speed and direction: gentle breeze NW; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none	Thick fog for periods, some light showers	RV
20/07/2023	Vantage Point Survey	VP2	3:00 starting at 08:40	Visibility: poor; Wind speed and direction: gentle breeze NW; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none	Thick fog for periods, some light showers	RV
09/08/2023	Vantage Point Survey	VP1	3:00 starting at 13:30	Visibility: good; Wind speed and direction: gentle breeze NE; Cloud cover and height: 33-66% >500m; Rain: light showers; Frost: none; Snow: none	Largely fair with scattered bright and cloudy spells. Occasional light showers blowing through but these were short-lived and sporadic. Gentle NE breeze, 12 - 17°C	NM

16/08/2023	Vantage Point Survey	VP4	3:00 starting at 11:00	Visibility: good; Wind speed and direction: light air SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none	July Surveys	KB
16/08/2023	Vantage Point Survey	VP4	3:00 starting at 14:30	Visibility: good; Wind speed and direction: light air SE; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none	July Surveys	KB
17/08/2023	Vantage Point Survey	VP3	3:00 starting at 11:00	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none	July Surveys	KB
17/08/2023	Vantage Point Survey	VP3	3:00 starting at 14:30	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none	July Surveys	KB
18/08/2023	Vantage Point Survey	VP2	3:00 starting at 07:00	Visibility: good; Wind speed and direction: strong breeze SSW; Cloud cover and height: 33-66% >500m; Rain: drizzle; Frost: none; Snow: none	Strong SSW breeze building throughout the survey. It started off relatively fair but gradually became darker and quite stormy and unsettled towards the end of the survey. Drizzle blowing through at times. 11 - 15°C	NM
18/08/2023	Vantage Point Survey	VP2	3:00 starting at 10:30	Visibility: good; Wind speed and direction: strong breeze SSW; Cloud cover and height: 33-66% >500m; Rain: drizzle; Frost: none; Snow: none	Strong SSW breeze building throughout the survey. It started off relatively fair but gradually became darker and quite stormy and unsettled towards the end of the survey. Drizzle blowing through at times. 11 - 15°C	NM

29/08/2023	Vantage Point Survey	VP4	3:00 starting at 08:00	Visibility: moderate; Wind speed and direction: moderate breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none	Largely fair throughout but with occasional drizzle being blown in. Visibility was changeable throughout, close and humid at VP due to sheltered nature. Moderate SW breeze, 13 - 17°C	NM
29/08/2023	Vantage Point Survey	VP4	3:00 starting at 11:30	Visibility: moderate; Wind speed and direction: moderate breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none	Largely fair throughout but with occasional drizzle being blown in. Visibility was changeable throughout, close and humid at VP due to sheltered nature. Moderate SW breeze, 13 - 17°C	NM
30/08/2023	Vantage Point Survey	VP3	3:00 starting at 09:15	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none	Fair throughout with some bright spells of sunshine drifting through early in the survey. It became gradually more overcast towards the end of the survey but remaining dry. Close and humid due to lack of significant breeze, 12 - 18°C	NM

30/08/2023	Vantage Point Survey	VP3	3:00 starting at 12:45	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none	Fair throughout with some bright spells of sunshine drifting through early in the survey. It became gradually more overcast towards the end of the survey but remaining dry. Close and humid due to lack of significant breeze, 12 - 18°C	NM
19/09/2023	Vantage Point Survey	VP4	3:00 starting at 06:10	Visibility: moderate; Wind speed and direction: gentle breeze SSW; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none	Entirely grey and overcast with persistent light rain. Close and humid throughout with mid - height cloud. Gentle SSW breeze, 12 - 16°C. No clearances whatsoever. Dawn survey. Sunrise - 07:10	NM
19/09/2023	Vantage Point Survey	VP4	3:00 starting at 09:40	Visibility: moderate; Wind speed and direction: gentle breeze SSW; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none	Entirely grey and overcast with persistent light rain. Close and humid throughout with mid - height cloud. Gentle SSW breeze, 12 - 16°C. No clearances whatsoever. Dawn survey. Sunrise - 07:10	NM
21/09/2023	Vantage Point Survey	VP2	3:00 starting at 06:00	Visibility: limited; Wind speed and direction: gentle breeze SSW; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none	very cloudy at before and after dawn.	NS
21/09/2023	Vantage Point Survey	VP2	3:00 starting at 09:30	Visibility: moderate; Wind speed and direction: moderate breeze SSW; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none	low clouds throughout the survey	NS
22/09/2023	Vantage Point Survey	VP3	3:00 starting at 06:15	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none	Fair and clear throughout with prolonged sunny spells. Moderate S breeze blowing high patches of cloud across, 9 - 15°. Dawn survey. Sunrise - 07:15	NM
22/09/2023	Vantage Point Survey	VP3	3:00 starting at 09:40	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none	Fair and clear throughout with prolonged sunny spells. Moderate S breeze blowing high patches of cloud across, 9 - 15°. Dawn survey. Sunrise - 07:15	NM
29/09/2023	Vantage Point Survey	VP1	3:00 starting at 06:30			NS

29/09/2023	Vantage Point Survey	VP1	3:00 starting at 10:00			NS
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Appendix 2 Table 2 Breeding Raptor Survey Effort

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
04/04/2023	Breeding Raptor Survey	rvpc	3:30 starting at 08:30	Visibility: good; Wind speed and direction: strong breeze NE; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
04/04/2023	Breeding Raptor Survey	rvpe	1:30 starting at 13:00	Visibility: good; Wind speed and direction: strong breeze NE; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
28/04/2023	Breeding Raptor Survey	rvpa	5:00 starting at 12:45	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
03/05/2023	Breeding Raptor Survey	rvps	3:00 starting at 13:00	Visibility: good; Wind speed and direction: fresh breeze NE; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		AOD
03/05/2023	Breeding Raptor Survey	rvpe	3:00 starting at 16:00	Visibility: good; Wind speed and direction: fresh breeze NE; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		AOD
04/05/2023	Breeding Raptor Survey	rvpa	3:00 starting at 12:00	Visibility: good; Wind speed and direction: strong breeze E; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
04/05/2023	Breeding Raptor Survey	rvpi	3:00 starting at 15:00	Visibility: good; Wind speed and direction: strong breeze E; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
09/05/2023	Breeding Raptor Survey	rvpp	4:00 starting at 12:00	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
09/05/2023	Breeding Raptor Survey	rvpc	1:00 starting at 17:00	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
09/05/2023	Breeding Raptor Survey	rvpi	1:00 starting at 18:00	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD



10/05/2023	Breeding Raptor Survey	rvph	4:00 starting at 10:00	Visibility: poor; Wind speed and direction: moderate breeze W; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
10/05/2023	Breeding Raptor Survey	rvpk	2:00 starting at 15:00	Visibility: poor; Wind speed and direction: moderate breeze W; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
11/05/2023	Breeding Raptor Survey	rvpe	3:00 starting at 11:00	Visibility: moderate; Wind speed and direction: moderate breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
19/05/2023	Breeding Raptor Survey	rvpi	3:00 starting at 07:30	Visibility: moderate; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
23/05/2023	Breeding Raptor Survey	rvpo	4:30 starting at 10:45	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
23/05/2023	Breeding Raptor Survey	rvpc	1:30 starting at 15:45	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
24/05/2023	Breeding Raptor Survey	rvpe	4:00 starting at 12:40	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
31/05/2023	Breeding Raptor Survey	rvpu	3:00 starting at 13:00	Visibility: good; Wind speed and direction: moderate breeze SW; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
31/05/2023	Breeding Raptor Survey	rvpp	1:00 starting at 16:30	Visibility: good; Wind speed and direction: moderate breeze SW; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
06/06/2023	Breeding Raptor Survey	rvpn	4:00 starting at 11:30	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
06/06/2023	Breeding Raptor Survey	rvpn	2:00 starting at 16:00	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
07/06/2023	Breeding Raptor Survey	rvph	3:00 starting at 14:45	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD



07/06/2023	Breeding Raptor Survey	rvpp	3:00 starting at 18:15	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
13/06/2023	Breeding Raptor Survey	rvpi	4:00 starting at 12:00	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
13/06/2023	Breeding Raptor Survey	rvpi	1:00 starting at 18:00	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
14/06/2023	Breeding Raptor Survey	rvpj	3:00 starting at 08:15	Visibility: good; Wind speed and direction: moderate breeze NE; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
20/06/2023	Breeding Raptor Survey	rvph	1:00 starting at 13:30	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 66-100% 150-500m; Rain: heavy showers; Frost: none; Snow: none		AOD
21/06/2023	Breeding Raptor Survey	rvpo	4:30 starting at 12:00	Visibility: poor; Wind speed and direction: light air S; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
21/06/2023	Breeding Raptor Survey	rvpe	4:30 starting at 17:00	Visibility: poor; Wind speed and direction: light air S; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
22/06/2023	Breeding Raptor Survey	rvpi	3:00 starting at 16:30	Visibility: good; Wind speed and direction: light breeze S; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		AOD
23/06/2023	Breeding Raptor Survey	rvph	3:00 starting at 11:20	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
23/06/2023	Breeding Raptor Survey	rvpt	3:00 starting at 14:20	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
28/06/2023	Breeding Raptor Survey	rvpk	3:00 starting at 15:10	Visibility: good; Wind speed and direction: moderate breeze SW; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
29/06/2023	Breeding Raptor Survey	rvpl	3:00 starting at 09:00	Visibility: good; Wind speed and direction: moderate breeze SW; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
29/06/2023	Breeding Raptor Survey	rvpm	3:00 starting at 13:00	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD

30/06/2023	Breeding Raptor Survey	rvph	3:00 starting at 10:00	Visibility: poor; Wind speed and direction: moderate breeze SW; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
30/06/2023	Breeding Raptor Survey	rvpm	1:00 starting at 13:00	Visibility: poor; Wind speed and direction: moderate breeze SW; Cloud cover and height: 66-100% <150m; Rain: persistent; Frost: none; Snow: none		AOD
07/07/2023	Breeding Raptor Survey	rvpm	3:00 starting at 16:10	Visibility: good; Wind speed and direction: strong breeze E; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
10/07/2023	Breeding Raptor Survey	rvpt	3:00 starting at 17:45	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 66-100% >500m; Rain: light showers; Frost: none; Snow: none		AOD
11/07/2023	Breeding Raptor Survey	rvpo	3:00 starting at 13:00	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
11/07/2023	Breeding Raptor Survey	rvpl	1:00 starting at 16:45	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
12/07/2023	Breeding Raptor Survey	rvpi	3:00 starting at 16:30	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		AOD
12/07/2023	Breeding Raptor Survey	rvpp	2:00 starting at 19:30	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		AOD
13/07/2023	Breeding Raptor Survey	rvph	3:00 starting at 12:30	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
13/07/2023	Breeding Raptor Survey	rvpj	3:00 starting at 16:15	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
19/07/2023	Breeding Raptor Survey	rvpp	3:00 starting at 14:20	Visibility: moderate; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
25/07/2023	Breeding Raptor Survey	rvph	3:00 starting at 16:30	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD

26/07/2023	Breeding Raptor Survey	transect north site	4:30 starting at 07:30	Visibility: poor; Wind speed and direction: light breeze W; Cloud cover and height: 66-100% <150m; Rain: persistent; Frost: none; Snow: none		AOD
27/07/2023	Breeding Raptor Survey	rvps	3:00 starting at 13:30	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
27/07/2023	Breeding Raptor Survey	rvpp	3:00 starting at 17:00	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
28/07/2023	Breeding Raptor Survey	rvps	3:00 starting at 14:15	Visibility: moderate; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% <150m; Rain: light showers; Frost: none; Snow: none		AOD
28/07/2023	Breeding Raptor Survey	rvpi	1:00 starting at 17:15	Visibility: poor; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
28/07/2023	Breeding Raptor Survey	rvpo	2:00 starting at 18:30	Visibility: poor; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
02/08/2023	Breeding Raptor Survey	rvph	3:00 starting at 15:10	Visibility: good; Wind speed and direction: fresh breeze NW; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
03/08/2023	Breeding Raptor Survey	transect north site	2:00 starting at 16:45	Visibility: good; Wind speed and direction: moderate breeze NW; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
04/08/2023	Breeding Raptor Survey	rvpj	3:00 starting at 12:15	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
10/08/2023	Breeding Raptor Survey	rvpa	1:00 starting at 13:00	Visibility: good; Wind speed and direction: moderate breeze SW; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
10/08/2023	Breeding Raptor Survey	rvpd	3:00 starting at 14:30	Visibility: good; Wind speed and direction: moderate breeze SW; Cloud cover and height: 66-100% >500m; Rain: heavy showers; Frost: none; Snow: none		AOD
10/08/2023	Breeding Raptor Survey	transect north site	3:00 starting at 17:30	Visibility: good; Wind speed and direction: moderate breeze SW; Cloud cover and height: 66-100% >500m; Rain: heavy showers; Frost: none; Snow: none		AOD
16/08/2023	Breeding Raptor Survey	transect north site	3:00 starting at 11:00	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD

16/08/2023	Breeding Raptor Survey	rvpp	3:00 starting at 15:00	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
17/08/2023	Breeding Raptor Survey	rvpi	3:00 starting at 11:15	Visibility: good; Wind speed and direction: fresh breeze NE; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
17/08/2023	Breeding Raptor Survey	rvpr	3:00 starting at 14:45	Visibility: good; Wind speed and direction: fresh breeze NE; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
22/08/2023	Breeding Raptor Survey	rvpj	3:00 starting at 12:40	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
22/08/2023	Breeding Raptor Survey	rvpp	1:00 starting at 15:50	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD

Appendix 2 Table 3 Foraging Vantage Point Survey Effort

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
27/06/2023	Foraging Vantage Point	fvp1	3:00 starting at 06:50	Visibility: poor; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% <150m; Rain: light showers; Frost: none; Snow: none		AOD
27/06/2023	Foraging Vantage Point	fvp2	3:00 starting at 10:10	Visibility: moderate; Wind speed and direction: fresh breeze S; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
05/07/2023	Foraging Vantage Point	fvp2	3:00 starting at 09:30	Visibility: good; Wind speed and direction: moderate breeze SW; Cloud cover and height: 33-66% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
05/07/2023	Foraging Vantage Point	fvp2	3:00 starting at 13:20	Visibility: moderate; Wind speed and direction: gentle breeze SW; Cloud cover and height: 33-66% >500m; Rain: light showers; Frost: none; Snow: none		AOD
06/07/2023	Foraging Vantage Point	fvp1	3:00 starting at 10:35	Visibility: moderate; Wind speed and direction: light breeze S; Cloud cover and height: 66-100% 150-500m; Rain: heavy showers; Frost: none; Snow: none		AOD
06/07/2023	Foraging Vantage Point	fvp1	1:00 starting at 14:15	Visibility: moderate; Wind speed and direction: fresh breeze SE; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD

07/07/2023	Foraging Vantage Point	fvp1	2:00 starting at 10:45	Visibility: good; Wind speed and direction: fresh breeze SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
07/07/2023	Foraging Vantage Point	fvp2	3:00 starting at 13:00	Visibility: good; Wind speed and direction: strong breeze SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
10/07/2023	Foraging Vantage Point	fvp1	3:00 starting at 14:15	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 66-100% 150-500m; Rain: heavy showers; Frost: none; Snow: none		AOD
17/07/2023	Foraging Vantage Point	fvp2	3:00 starting at 14:40	Visibility: good; Wind speed and direction: light breeze SE; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
17/07/2023	Foraging Vantage Point	fvp1	3:00 starting at 11:30	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
17/07/2023	Foraging Vantage Point	fvp2	3:00 starting at 15:00	Visibility: good; Wind speed and direction: moderate breeze SW; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
18/07/2023	Foraging Vantage Point	fvp1	3:00 starting at 10:35	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
18/07/2023	Foraging Vantage Point	fvp1	3:00 starting at 14:20	Visibility: moderate; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
19/07/2023	Foraging Vantage Point	fvp2	3:00 starting at 10:35	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
20/07/2023	Foraging Vantage Point	fvp1	3:00 starting at 10:30	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% >500m; Rain: light showers; Frost: none; Snow: none		AOD
20/07/2023	Foraging Vantage Point	fvp1	3:00 starting at 14:00	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% >500m; Rain: light showers; Frost: none; Snow: none		AOD
21/07/2023	Foraging Vantage Point	fvp1	3:00 starting at 09:50	Visibility: poor; Wind speed and direction: light breeze S; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD

25/07/2023	Foraging Vantage Point	fvp1	3:00 starting at 12:45	Visibility: good; Wind speed and direction: light air SW; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
01/08/2023	Foraging Vantage Point	fvp1	3:00 starting at 12:15	Visibility: good; Wind speed and direction: light breeze SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
01/08/2023	Foraging Vantage Point	fvp2	3:00 starting at 15:45	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
02/08/2023	Foraging Vantage Point	fvp2	3:00 starting at 11:00	Visibility: good; Wind speed and direction: fresh breeze NW; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
03/08/2023	Foraging Vantage Point	fvp1	3:00 starting at 18:50	Visibility: good; Wind speed and direction: light breeze NW; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
04/08/2023	Foraging Vantage Point	fvp2	1:00 starting at 16:00	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
10/08/2023	Foraging Vantage Point	fvp1	2:00 starting at 11:00	Visibility: good; Wind speed and direction: moderate breeze SW; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD

Appendix 2 Table 4 Vantage Point Survey Data

Ref.	VP	Date	Time	Species	Number	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Habitat and activity	Surveyor
MP075	VP1	13/04/2023	06:15	Meadow Pipit	8	-	-	-	-	-	upland blanket bog; displaying, atleast 8 singing and displaying around vp	RV
LB029	VP1	13/04/2023	10:37	Lesser Black-backed Gull	1	82	20	62	0	0	improved agricultural grassland; flying, flew across site and landed on lake south of vp	RV
SN057	VP3	20/04/2023	05:43	Snipe	1	-	-	-	-	-	bogs; chirping	KB

MP076	VP3	20/04/2023	06:01	Meadow Pipit	2	-	-	-	-	-	bogs; flying	KB
MP077	VP3	20/04/2023	06:16	Meadow Pipit	1	-	-	-	-	-	bogs; singing	KB
SN058	VP3	20/04/2023	06:40	Snipe	1	-	-	-	-	-	bogs; chirping	KB
SN059	VP3	20/04/2023	06:52	Snipe	1	-	-	-	-	-	bogs; chirping	KB
RG055	VP3	20/04/2023	07:04	Red Grouse	1	-	-	-	-	-	bogs; on ground, calling	KB
RG056	VP3	20/04/2023	07:50	Red Grouse	2	-	-	-	-	-	bogs; on ground	KB
RG057	VP3	20/04/2023	07:59	Red Grouse	1	-	-	-	-	-	bogs; on ground, calling	KB
SN060	VP3	20/04/2023	08:04	Snipe	1	80	5	5	70	0	bogs; drumming	KB
SN061	VP3	20/04/2023	09:31	Snipe	1	45	10	5	25	0	bogs; drumming	KB
RG058	VP3	20/04/2023	10:26	Red Grouse	1	5	5	0	0	0	bogs; flying, landed	KB
MP078	VP2	20/04/2023	06:20	Meadow Pipit	8	-	-	-	-	-	upland blanket bog and improved agricultural grassland; displaying, 4 pairs chasing around vp	RV
LB030	VP2	20/04/2023	07:42	Lesser Black-backed Gull	1	42	35	7	0	0	improved agricultural grassland and conifer plantation; flying, ad flying lazily across site	RV
HH240	VP2	20/04/2023	09:05	Hen Harrier	1	320	320	0	0	0	improved agricultural grassland and conifer plantation; hunting, same male recorded during break in incidental, hunted over wide area, landed after appearing to catch something	RV
LB031	VP2	20/04/2023	09:41	Lesser Black-backed Gull	1	83	33	50	0	0	improved agricultural grassland and conifer plantation; flying, ad flying across site	RV

HH241	VP2	20/04/2023	09:54	Hen Harrier	1	445	380	65	0	0	improved agricultural grassland and conifer plantation; flying/hunting, female over a wide area	RV
HH242	VP2	20/04/2023	10:42	Hen Harrier	1	320	250	70	0	0	improved agricultural grassland and conifer plantation; hunting, male hunting	RV
HH243	VP2	20/04/2023	11:08	Hen Harrier	1	1140	200	800	140		improved agricultural grassland and conifer plantation; hunting/displaying, male hunting then circling briefly with female	RV
HH244	VP2	20/04/2023	11:14	Hen Harrier	1	45	0	0	45	0	improved agricultural grassland and conifer plantation; circling/displaying, female circled with male but i lost it as i followed male and could not relocate	RV
WK011	VP4	27/04/2023	05:24	Woodcock	1	5	0	5	0	0	scrub; flying, flew over scrub, called once	RV
MP079	VP4	27/04/2023	05:30	Meadow Pipit	6	-	-	-	-	-	improved agricultural grassland and lowland blanket bog; displaying, 4 birds displaying over bog, 2 more in with sheep	RV
LB032	VP4	27/04/2023	08:41	Lesser Black-backed Gull	1	21	0	21	0	0	#N/A	RV
BZ200	VP4	27/04/2023	08:47	Buzzard	1	30	0	30	0	0	improved agricultural grassland, conifer plantation and scrub; flying, ad circled up and flew across valley	RV
BZ201	VP4	27/04/2023	11:02	Buzzard	1	14	0	14	0	0	improved agricultural grassland, conifer plantation and scrub; flying, adult flew across valley	RV
ML005	VP4	10/05/2023	18:43	Merlin	1	130	60	70	0	0	conifer plantation and semi-natural grassland; flying low and rapidly with young forestry adjacent to vp, disappeared se	

K.002	VP4	10/05/2023	17:30	Kestrel	1	230	0	40	190	0	semi-natural grassland and scrub; hunting and hovering high over rough farmland to w of vp
K.003	VP4	10/05/2023	21:11	Kestrel	1	450	80	30	340	0	semi-natural grassland and bogs; hunting and hovering over boggy grassland and along forestry fringes,
MP080	VP4	10/05/2023	16:30	Meadow Pipit	37	10000	7500	2250	250	0	semi-natural grassland and improved agricultural grassland; lots of activity on open ground immediate se of vp throughout survey, uncountable
MP081	VP4	10/05/2023	19:49	Meadow Pipit	7	90	0	0	90	0	conifer plantation and semi-natural grassland; small group calling and flying sw across vp
MP082	VP4	10/05/2023	18:08	Meadow Pipit	19	250	180	70	0	0	scattered tress and parkland and scrub; calling and flitting low across open area and landing with scrub
SN062	VP4	10/05/2023	16:29	Snipe	3	130	0	30	100	0	semi-natural grassland and scrub; flying and calling, heading n across vp

SN063	VP4	10/05/2023	22:03	Snipe	14	1020	150	690	160	0	semi-natural grassland and improved agricultural grassland; display flights and calls above open boggy grassland to immediate se of vp
CA002	VP4	10/05/2023	18:32	Cormorant	3	250	0	0	250	0	improved agricultural grassland and scrub; pair flying high, heading n and over site
BH002	VP4	10/05/2023	16:14	Black-headed Gull	7	200	0	0	200	0	improved agricultural grassland and semi-natural grassland; flying high along s 500m buffer, heading e
BH003	VP4	10/05/2023	19:07	Black-headed Gull	13	320	0	120	200	0	conifer plantation and scrub; flying high over site and heading w
BH004	VP4	10/05/2023	20:27	Black-headed Gull	134	450	20	40	390	0	improved agricultural grassland and scrub; circling high over farmland to se, wheeling and disappearing into folds of the land eventually
LB033	VP4	10/05/2023	17:41	Lesser Black-backed Gull	1	270	0	0	100	170	improved agricultural grassland and scrub; soaring high above s 500m buffer, heading gradually n
LB034	VP4	10/05/2023	18:17	Lesser Black-backed Gull	9	320	0	30	260	30	conifer plantation and semi-natural grassland; flying high across w of site, moved steadily w and disappeared into lowland

HH245	VP3	18/05/2023	19:47	Hen Harrier	1	110	90	20	0	0	mixed conifer woodland and heath; commuting low along forestry edge and across heather moorland, heading downhill (n)
K.004	VP3	18/05/2023	20:55	Kestrel	1	350	40	260	50	0	bogs and heath; hunting and hovering over moorland, along forestry fringes and rough farmland to ne of vp
H.002	VP3	18/05/2023	17:32	Grey Heron	1	200	0	0	200	0	bogs and scrub; flying high along e buffer, heading n and downhill
ET001	VP3	18/05/2023	18:43	Little Egret	3	170	0	170	0	0	improved agricultural grassland and hedgerows; flying along valley and farmland within valley to nw of vp
MP083	VP3	18/05/2023	17:00	Meadow Pipit	32	15000	14200	800	0	0	heath and bogs; almost continuous activity of mp on open moorland surrounding vp throughout, calling and flitting

MP084	VP3	18/05/2023	19:53	Meadow Pipit	14	160	0	0	160	0	heath and bogs; flying high and calling across vp, heading nw across forestry on site
SN064	VP3	18/05/2023	18:09	Snipe	4	160	0	145	15	0	conifer plantation and semi-natural grassland; flying rapidly across vp area and calling, heading e
SN065	VP3	18/05/2023	21:15	Snipe	21	5400	340	4700	360	0	heath and semi-natural grassland; persistent display flights and calls over vp for last 90mins of survey, still going at the end
LB035	VP3	18/05/2023	17:40	Lesser Black-backed Gull	16	270	0	0	270	0	heath and improved agricultural grassland; soaring over moorland and upland farmland to n, heading nw and descending into valley
BZ202	VP3	18/05/2023	18:56	Buzzard	2	470	0	90	380	0	conifer plantation and semi-natural grassland; pair soaring over forestry to e of vp, moving away gradually
BZ203	VP3	18/05/2023	20:38	Buzzard	1	900	40	100	760	0	conifer plantation and scrub; soaring over forestry and rough moorland on site for a long period in evening

HH246	VP2	30/05/2023	17:31	Hen Harrier	1	45	0	25	20	0	conifer plantation; foraging, male	KB
BZ204	VP2	30/05/2023	17:48	Buzzard	1	20	0	20	0	0	conifer plantation; flying	KB
MP085	VP2	30/05/2023	17:52	Meadow Pipit	1	-	-	-	-	-	bogs; singing	KB
SH059	VP2	30/05/2023	18:43	Sparrowhawk	1	8	8	0	0	0	bogs; flying, female	KB
MP086	VP1	31/05/2023	20:25	Meadow Pipit	2	-	-	-	-	-	bogs; adult feeding a fledgeling	KB
BZ205	VP1	31/05/2023	20:33	Buzzard	1	50	0	20	30	0	conifer plantation and wet grassland; flying	KB
SH060	VP1	31/05/2023	21:41	Sparrowhawk	1	8	8	0	0	0	wet grassland; foraging	KB
MP087	VP1	21/06/2023	09:40	Meadow Pipit	1	-	-	-	-	-	bogs; foraging	KB
HH247	VP1	21/06/2023	11:03	Hen Harrier	1	160	0	0	160	0	conifer plantation; foraging, male	KB
HH248	VP1	21/06/2023	11:31	Hen Harrier	1	120	0	60	60	0	bogs; foraging, male	KB
HH249	VP1	21/06/2023	11:36	Hen Harrier	1	240	0	0	60	180	bogs and conifer plantation; soaring, male. ascending - lost from view in clouds	KB
BZ206	VP1	21/06/2023	11:44	Buzzard	1	90	0	0	90	0	conifer plantation; flying	KB
HH250	VP1	21/06/2023	13:26	Hen Harrier	1	120	10	60	50	0	conifer plantation and bogs; foraging, male	KB
HH251	VP1	21/06/2023	13:30	Hen Harrier	1	300	15	45	120	0	conifer plantation and bogs; foraging, male	KB
HH252	VP1	21/06/2023	14:15	Hen Harrier	1	90	0	0	90	0	bogs; foraging, male	KB
HH253	VP1	21/06/2023	14:19	Hen Harrier	1	120	0	0	120	0	bogs and conifer plantation; foraging, male	KB
HH254	VP1	21/06/2023	14:26	Hen Harrier	1	100	0	0	100	0	conifer plantation; foraging, male	KB
HH255	VP1	21/06/2023	15:48	Hen Harrier	1	240	0	0	240	0	conifer plantation; foraging, male	KB

MP088	VP2	11/07/2023	11:12	Meadow Pipit	3	-	-	-	-	-	bogs; flying	KB
MP089	VP2	11/07/2023	11:35	Meadow Pipit	1	-	-	-	-	-	bogs; singing	KB
BZ207	VP2	11/07/2023	12:18	Buzzard	1	200	20	60	120	0	bogs and conifer plantation; flying	KB
HH256	VP2	11/07/2023	12:20	Hen Harrier	1	300	0	150	150	0	bogs and conifer plantation; flying, male	KB
BZ208	VP2	11/07/2023	13:05	Buzzard	1	60	0	10	50	0	conifer plantation; soaring	KB
HH257	VP2	11/07/2023	13:36	Hen Harrier	1	50	0	15	35	0	bogs and conifer plantation; flying, male	KB
HH258	VP2	11/07/2023	13:52	Hen Harrier	1	180	0	60	120	0	conifer plantation; flying, male	KB
HH259	VP2	11/07/2023	15:44	Hen Harrier	1	120	100	20	0	0	bogs and conifer plantation; foraging, male	KB
BZ209	VP2	11/07/2023	15:53	Buzzard	1	330	0	10	320	0	conifer plantation; soaring	KB
BZ210	VP2	11/07/2023	16:11	Buzzard	1	40	0	5	35	0	conifer plantation; soaring	KB
HH260	VP2	11/07/2023	16:28	Hen Harrier	1	70	20	10	40	0	bogs and conifer plantation; foraging, male	KB
HH261	VP2	11/07/2023	16:34	Hen Harrier	1	50	40	10	0	0	bogs and conifer plantation; foraging, male	KB
SN066	VP3	12/07/2023	11:45	Snipe	1	-	-	-	-	-	bogs; chipping	KB
MP090	VP3	12/07/2023	12:10	Meadow Pipit	2	-	-	-	-	-	bogs; singing	KB
SN067	VP3	12/07/2023	12:23	Snipe	1	-	-	-	-	-	bogs; chipping	KB
SN068	VP3	12/07/2023	12:41	Snipe	1	240	30	60	150	0	bogs; drumming	KB
SN069	VP3	12/07/2023	15:01	Snipe	1	200	5	95	100	0	bogs; drumming	KB
HH262	VP4	13/07/2023	11:17	Hen Harrier	1	8	0	8	0	0	conifer plantation and bogs; flying, male	KB

BZ211	VP4	13/07/2023	11:29	Buzzard	1	80	5	20	55	0	semi-natural grassland and hedgerows; soaring	KB
BZ212	VP4	13/07/2023	11:48	Buzzard	1	120	30	30	60	0	semi-natural grassland, bogs and conifer plantation; soaring	KB
HH263	VP4	13/07/2023	12:10	Hen Harrier	1	20	0	20	0	0	conifer plantation; flying, male	KB
BZ213	VP4	13/07/2023	12:14	Buzzard	1	30	0	0	30	0	conifer plantation; soaring	KB
HH264	VP4	13/07/2023	13:36	Hen Harrier	1	7	7	0	0	0	conifer plantation and bogs; pair up flying together - female dropped down, male flew ne, female	KB
HH265	VP4	13/07/2023	13:36	Hen Harrier	1	20	5	15	0	0	conifer plantation and bogs; pair up flying together - female dropped down, male flew ne, male	KB
BZ214	VP4	13/07/2023	13:48	Buzzard	1	60	0	20	40	0	semi-natural grassland and hedgerows; soaring	KB
HH266	VP4	13/07/2023	13:49	Hen Harrier	1	25	0	25	0	0	conifer plantation and bogs; flying, male	KB
HH267	VP4	13/07/2023	13:55	Hen Harrier	1	70	0	50	20	0	conifer plantation and bogs; foraging, male	KB
HH268	VP4	13/07/2023	13:56	Hen Harrier	1	30	20	10	0	0	bogs and conifer plantation; up circling and descended, female	KB
BZ215	VP4	13/07/2023	13:57	Buzzard	1	5	5	0	0	0	bogs and conifer plantation; flying and calling	KB
HH269	VP4	13/07/2023	15:25	Hen Harrier	1	150	10	140	0	0	conifer plantation and bogs; soaring, female	KB
BZ216	VP4	13/07/2023	16:09	Buzzard	1	7	7	0	0	0	semi-natural grassland; flying - landed in tree	KB
BZ217	VP4	13/07/2023	16:12	Buzzard	1	5	5	0	0	0	semi-natural grassland; took up from perch	KB
SH061	VP4	13/07/2023	16:21	Sparrowhawk	1	12	0	12	0	0	semi-natural grassland, bogs and conifer plantation; foraging	KB

HH270	VP1	17/07/2023	08:49	Hen Harrier	1	15	0	15	0	0	improved agricultural grassland; flying, female flew from edge of plantation and was lost when i switched to scope	RV
BZ218	VP1	17/07/2023	09:13	Buzzard	1	7	7	0	0	0	improved agricultural grassland; flying, heard calling and flew short distance to isolated trees	RV
HH271	VP1	17/07/2023	09:28	Hen Harrier	1	9	9	0	0	0	conifer plantation and upland blanket bog; flying, male low over plantation and into clearing	RV
HH272	VP1	17/07/2023	09:51	Hen Harrier	1	12	12	0	0	0	improved agricultural grassland; flying, male low over similar area to female	RV
BZ219	VP1	17/07/2023	10:17	Buzzard	1	55	15	40	0	0	improved agricultural grassland; circling, circling over sheep fields and flew into gap in plantation	RV
MP091	VP1	17/07/2023	11:40	Meadow Pipit	11	-	-	-	-	-	upland blanket bog; feeding, max of 11 in air around vp	RV
MP092	VP1	17/07/2023	11:40	Meadow Pipit	5	-	-	-	-	-	improved agricultural grassland; feeding, several in sheep field through out survey, atleast 5 in air when bz flew over	RV
HH273	VP2	20/07/2023	09:48	Hen Harrier	1	260	205	55	0	0	upland blanket bog, conifer plantation and improved agricultural grassland; hunting, hunting over a wide area and lost behind hill by turbines	RV
BZ220	VP2	20/07/2023	10:27	Buzzard	1	165	0	0	165	0	upland blanket bog and improved agricultural grassland; circling, circling high over hill, dove steeply out of view behind hill	RV
MP093	VP2	20/07/2023	11:40	Meadow Pipit	15	-	-	-	-	-	upland blanket bog and improved agricultural grassland; feeding, atleast 15 flying around vp during the survey period	RV

HG002	VP1	09/08/2023	11:12	Herring Gull	18	340	0	0	340	0	conifer plantation, bogs and scrub; commuting high across site, moving ne	NM
LB036	VP1	09/08/2023	10:09	Lesser Black-backed Gull	6	430	0	190	340	0	conifer plantation, scrub and semi-natural grassland; commuting across site, swirling over forestry on occasion but continuing sw	NM
LB037	VP1	09/08/2023	12:42	Lesser Black-backed Gull	5	340	0	0	280	60	bogs, mixed conifer woodland and scrub; commuting high across site, moving s	NM
LB038	VP1	09/08/2023	11:20	Lesser Black-backed Gull	14	570	0	280	290	0	bogs and conifer plantation; swirling over hillside for a period, moving e	NM
BH005	VP1	09/08/2023	10:43	Black-headed Gull	9	210	0	210	0	0	conifer plantation, bogs and semi-natural grassland; commuting nw across site, relatively low across forestry	NM
BH006	VP1	09/08/2023	14:17	Black-headed Gull	9	175	0	0	175	0	conifer plantation, bogs and semi-natural grassland; commuting s across site	NM
LB039	VP1	09/08/2023	12:04	Lesser Black-backed Gull	37	2670	400	2000	270	0	lakes and ponds and improved agricultural grassland; swirling over lake and adjacent farmland, well off site, disappearing sw	NM

BH007	VP1	09/08/2023	11:48	Black-headed Gull	73	3450	350	2800	300	0	lakes and ponds and improved agricultural grassland; swirling over lake and adjacent farmland, swooping low, disappearing se, individual birds were seen in and around the lake for the rest of the survey	NM
HG003	VP1	09/08/2023	15:29	Herring Gull	5	685	0	0	685	0	improved agricultural grassland and conifer plantation; soaring to the se of site	NM
LB040	VP1	09/08/2023	10:54	Lesser Black-backed Gull	8	430	0	250	180	0	improved agricultural grassland and conifer plantation; commuting w along s 500m buffer	NM
MP094	VP1	09/08/2023	11:39	Meadow Pipit	17	75	75	0	0	0	bogs and semi-natural grassland; flying and calling frantically downhill, flushed by bz passing through	NM
BZ221	VP1	09/08/2023	11:35	Buzzard	1	380	360	20	0	0	bogs, conifer plantation and scrub; flying low uphill along forestry fringe, continuing nw until it was lost within scrubby forestry	NM
BZ222	VP1	09/08/2023	13:07	Buzzard	2	790	0	0	790	0	conifer plantation, improved agricultural grassland and scrub; soaring and circling over se of site, moving s and off site	NM
MP095	VP1	09/08/2023	15:28	Meadow Pipit	7	65	0	0	65	0	bogs and heath; flying high and calling across hillside	NM
H.003	VP1	09/08/2023	11:33	Grey Heron	1	165	0	0	165	0	conifer plantation, bogs and improved agricultural grassland; commuting high across se of site	NM

SI003	VP1	09/08/2023	12:47	Swift	26	1150	0	380	770	0	bogs, scrub and highly modified/non-native woodland; soaring and swirling over hillside and across site, moving sw until they were lost from view	NM
SN070	VP1	09/08/2023	10:03	Snipe	3	70	35	35	0	0	bogs, highly modified/non-native woodland and semi-natural grassland; flushed from rushy bog	NM
SN071	VP1	09/08/2023	14:52	Snipe	3	130	0	110	20	0	highly modified/non-native woodland and bogs; flying and alarm calling across vp area, moving nw	NM
MP096	VP1	09/08/2023	10:25	Meadow Pipit	43	-	-	-	-	-	bogs and heath; flitting and calling within heather moorland and bog surrounding vp area, throughout survey, numbers were rough. max flock - 13	NM
BZ223	VP1	09/08/2023	15:28	Buzzard	1	-	-	-	-	-	mixed conifer woodland; perched within edges of forestry	NM
SH062	VP4	16/08/2023	11:24	Sparrowhawk		-	-	-	-	-	conifer plantation; begging calls heard	KB
BZ224	VP4	16/08/2023	12:52	Buzzard	1	25	0	0	25	0	conifer plantation; soaring	KB
BZ225	VP4	16/08/2023	13:40	Buzzard	1	50	0	20	30	0	conifer plantation, semi-natural grassland and hedgerows; flying	KB
BZ226	VP4	16/08/2023	15:03	Buzzard	1	30	0	0	30	0	improved grassland and hedgerows; flying	KB
SH063	VP4	16/08/2023	16:14	Sparrowhawk	1	12	0	12	0	0	improved grassland and conifer plantation; flying	KB
MP097	VP3	17/08/2023	11:18	Meadow Pipit	2	-	-	-	-	-	bogs; flying	KB

HG004	VP3	17/08/2023	15:03	Herring Gull	1	40	0	10	30	0	bogs and conifer plantation; flying	KB
SN072	VP3	17/08/2023	17:22	Snipe	1	30	0	0	30	0	bogs; flying	KB
WE001	VP2	18/08/2023	08:19	White-tailed Eagle	1	1050	0	0	450	600	conifer plantation, bogs and semi-natural grassland; soaring high across site, moving nw and appeared to be heading towards l. melvin	NM
GB003	VP2	18/08/2023	12:15	Great Black-backed Gull	5	470	0	100	370	0	conifer plantation, bogs and improved agricultural grassland; commuting across site, moving sw	NM
LB041	VP2	18/08/2023	09:22	Lesser Black-backed Gull	7	350	0	0	350	0	bogs and highly modified/non-native woodland; commuting se across site	NM
LB042	VP2	18/08/2023	11:52	Lesser Black-backed Gull	17	330	0	40	290	0	conifer plantation, semi-natural grassland and scrub; commuting w across s of site, was lost behind forestry	NM
SN073	VP2	18/08/2023	07:03	Snipe	2	75	25	50	0	0	bogs and highly modified/non-native woodland; flushed from bog	NM
SN074	VP2	18/08/2023	10:34	Snipe	6	115	0	80	35	0	bogs and conifer plantation; flying frantically and alarm calling across vp area, moving w	NM
K.005	VP2	18/08/2023	08:17	Kestrel	1	590	60	180	250	0	bogs and semi-natural grassland; hunting and hovering over moorland, moving w	NM

MP098	VP2	18/08/2023	07:20	Meadow Pipit	36	-	-	-	-	-	bogs, semi-natural grassland and improved agricultural grassland; flitting and calling within moorland and upland grassland adjacent to vp, throughout survey, numbers were rough. max flock - 11	NM
SN075	VP2	18/08/2023	10:19	Snipe	3	-	-	-	-	-	bogs, improved agricultural grassland and semi-natural grassland; chirping on bog and rushy grassland	NM
MP099	VP4	29/08/2023	09:21	Meadow Pipit	6	70	0	70	0	0	highly modified/non-native woodland; flying and calling across vp area, moving s	NM
MP100	VP4	29/08/2023	12:04	Meadow Pipit	4	40	0	4	0	0	highly modified/non-native woodland, bogs and scrub; flying and calling across vp, heading w	NM
H.004	VP4	29/08/2023	12:18	Grey Heron	1	250	0	120	130	0	highly modified/non-native woodland, improved agricultural grassland and scrub; flying s along sw 500m buffer	NM
K.006	VP4	29/08/2023	09:39	Kestrel	1	430	50	350	30	0	improved agricultural grassland, semi-natural grassland and scrub; hunting and hovering over rough farmland	NM
BZ227	VP4	29/08/2023	08:53	Buzzard	1	430	0	0	430	0	improved agricultural grassland and conifer plantation; soaring and circling high over forestry, heading n onto site	NM
BZ228	VP4	29/08/2023	13:11	Buzzard	2	875	0	230	645	0	conifer plantation, improved agricultural grassland and scrub; soaring and calling across forestry, moving w	NM

BH008	VP4	29/08/2023	09:00	Black-headed Gull	7	190	0	70	130	0	improved agricultural grassland and conifer plantation; commuting ne across site	NM
BH009	VP4	29/08/2023	11:27	Black-headed Gull	29	350	0	230	120	0	conifer plantation, improved agricultural grassland and scrub; commuting and swooping sw	NM
MA003	VP4	29/08/2023	08:23	Mallard	13	320	0	0	320	0	improved agricultural grassland; commuting across farmland	NM
MP101	VP4	29/08/2023	08:20	Meadow Pipit	25	-	-	-	-	-	improved agricultural grassland and bogs; flitting and calling within boggy farmland adjacent to vp, throughout survey	NM
MP102	VP3	30/08/2023	10:43	Meadow Pipit	12	60	60	0	0	0	bogs and heath; flying low and calling across heather moorland	NM
MP103	VP3	30/08/2023	09:19	Meadow Pipit	7	45	45	0	0	0	bogs and heath; flying low and calling across heather moorland	NM
MP104	VP3	30/08/2023	14:32	Meadow Pipit	19	250	170	20	60	0	heath, bogs and conifer plantation; flitting and calling within heather below vp, before moving away sw	NM
ET002	VP3	30/08/2023	11:38	Little Egret	2	150	0	0	150	0	bogs, conifer plantation and improved agricultural grassland; commuting high across heather moorland and forestry, moving n	NM

SN076	VP3	30/08/2023	09:37	Snipe	4	90	0	20	70	0	bogs and conifer plantation; flying frantically and alarm calling across vp	NM
LB043	VP3	30/08/2023	13:48	Lesser Black-backed Gull	7	280	0	0	280	0	bogs and conifer plantation; commuting nw across n of site	NM
LB044	VP3	30/08/2023	12:42	Lesser Black-backed Gull	21	570	0	200	370	0	highly modified/non-native woodland and improved agricultural grassland; soaring and swooping to the n of site, appearing to be heading towards l. melvin	NM
BZ229	VP3	30/08/2023	09:51	Buzzard	1	630	0	0	630	0	improved agricultural grassland and highly modified/non-native woodland; soaring high to the ne, moving se	NM
BZ230	VP3	30/08/2023	13:21	Buzzard	1	190	0	150	30	0	bogs, heath and conifer plantation; commuting across heather moorland and forestry within n of site	NM
BZ231	VP3	30/08/2023	10:09	Buzzard	2	1300	0	240	900	160	conifer plantation, bogs and scrub; soaring and calling over forestry, moving n across n of site and onto lands further n	NM

K.007	VP4	19/09/2023	10:17	Kestrel	1	475	0	350	125	0	improved agricultural grassland, highly modified/non-native woodland and scrub; commuting and gliding across vp area, moving nw, hunting & hovering over rough farmland to nw of vp	NM
SN077	VP4	19/09/2023	07:54	Snipe	2	135	0	135	0	0	mixed conifer woodland, scrub and improved agricultural grassland; commuting sw and alarm calling	NM
HG005	VP4	19/09/2023	11:43	Herring Gull	7	320	0	0	320	0	improved agricultural grassland and conifer plantation; commuting ne across s of site, disappearing behind forestry	NM
SN078	VP4	19/09/2023	09:31	Snipe	1	160	0	140	20	0	improved agricultural grassland, scrub and semi-natural grassland; flying frantically and alarm calling across rough farmland and border with forestry	NM
MP105	VP4	19/09/2023	07:27	Meadow Pipit	6	90	0	65	25	0	improved agricultural grassland, mixed conifer woodland and scrub; flying and calling across vp, moving n	NM
MP106	VP4	19/09/2023	08:21	Meadow Pipit	26	10000	8600	1400	0	0	improved agricultural grassland, scrub and semi-natural grassland; calling and flitting within rough boggy farmland, gradually moving e along s buffer, foraging and in area for a long period, numbers were estimates	NM
MP107	VP4	19/09/2023	11:47	Meadow Pipit	5	150	0	0	150	0	conifer plantation and improved agricultural grassland; flying high and calling, moving s	NM

MP108	VP4	19/09/2023	10:42	Meadow Pipit	11	210	0	210	0	0	scrub and mixed conifer woodland; flying and calling across vp area, moving n	NM
MP109	VP4	19/09/2023	11:57	Meadow Pipit	3	90	0	90	0	0	mixed conifer woodland and improved agricultural grassland; flying and calling across vp, moving w	NM
SN079	VP4	19/09/2023	06:51	Snipe	3	-	-	-	-	-	improved agricultural grassland and semi-natural grassland; chirping within farmland	NM
K.008	VP2	21/09/2023	11:09	Kestrel	1	100	0	0	100	0	conifer plantation; flying	NS
BZ232	VP3	22/09/2023	07:54	Buzzard	1	90	75	15	0	0	mixed conifer woodland, bogs and improved agricultural grassland; departing from perched and flying low across bog, moving e	NM
BZ233	VP3	22/09/2023	09:18	Buzzard	1	750	0	120	630	0	conifer plantation, bogs and heath; soaring over forestry and open moorland, moving high and w across n site	NM
BZ234	VP3	22/09/2023	11:21	Buzzard	2	470	0	0	0	470	improved agricultural grassland, conifer plantation and scrub; pair soaring and circling high	NM
H.005	VP3	22/09/2023	09:18	Grey Heron	1	250	0	0	250	0	bogs and conifer plantation; commuting high across n of site, moving sw	NM
LB045	VP3	22/09/2023	12:03	Lesser Black-backed Gull	18	110	0	50	60	0	improved agricultural grassland and scrub; commuting across farmland to nw, well off site	NM
LB046	VP3	22/09/2023	08:02	Lesser Black-backed Gull	7	230	0	0	230	0	bogs and conifer plantation; commuting n across vp	NM

GB004	VP3	22/09/2023	09:42	Great Black-backed Gull	2	345	0	0	0	345	bogs, heath and conifer plantation; soaring high above heath and moorland, moving sw, mostly off site	NM
BH010	VP3	22/09/2023	07:26	Black-headed Gull	11	280	0	35	245	0	bogs, conifer plantation and improved agricultural grassland; commuting across n of site, moving nw	NM
LB047	VP3	22/09/2023	10:03	Lesser Black-backed Gull	37	460	0	130	330	0	improved agricultural grassland and mixed conifer woodland; swirling and circling to ne of vp	NM
BH011	VP3	22/09/2023	09:09	Black-headed Gull	7	90	0	0	90	0	conifer plantation, bogs and heath; commuting se across n of site	NM
BH012	VP3	22/09/2023	11:18	Black-headed Gull	6	165	0	50	115	0	bogs, conifer plantation and improved agricultural grassland; commuting across n of site, moving nw and descending into valley	NM
SN080	VP3	22/09/2023	07:02	Snipe	3	45	30	15	0	0	bogs and heath; flushed from heather bog, alarm calling	NM
SN081	VP3	22/09/2023	07:56	Snipe	5	75	50	20	0	0	bogs, heath and semi-natural grassland; flushed from bog by bz, alarm calling and flying frantically across vp	NM
MP110	VP3	22/09/2023	08:16	Meadow Pipit	9	80	0	80	0	0	bogs and semi-natural grassland; flying and calling across heath and moorland adjacent to vp, moving ne	NM

MP111	VP3	22/09/2023	07:17	Meadow Pipit	16	200	70	120	10	0	bogs and heath; flying and calling across bog, swirling and landing within heather briefly as they moved	NM
MP112	VP3	22/09/2023	11:08	Meadow Pipit	4	80	15	65	0	0	bogs and heath; flitting and calling across heather moorland	NM
BZ235	VP3	22/09/2023	07:12	Buzzard	1	-	-	-	-	-	mixed conifer woodland and bogs; perched in tree on edges of woodland early in the morning, there for ~ 40 mins	NM
K.009	VP1	29/09/2023	11:50	Kestrel	1	30	0	20	10	0	conifer plantation; flying	NS

Appendix 2 Table 5 Breeding Raptor Survey Data

Ref.	BR	Date	Time	Species	Number	Habitat and activity	Breeding status	Surveyor
HH213	C	04/04/2023	09:01	Hen Harrier	1	conifer plantation and upland blanket bog, soaring/foraging, male soaring over 2021 nest then foraging southwards	suitable nesting habitat; possible breeder	AOD
HH214	C	04/04/2023	10:27	Hen Harrier	1	upland blanket bog, foraging, female foraging with male	suitable nesting habitat; possible breeder	AOD
HH215	C	04/04/2023	10:29	Hen Harrier	1	upland blanket bog, foraging, foraging with female/courtship	suitable nesting habitat; possible breeder	AOD
K.003	E	04/04/2023	12:30	Kestrel	1	wet grassland, foraging, female foraging	suitable nesting habitat; possible breeder	AOD

HH216	E	04/04/2023	13:08	Hen Harrier	1	wet grassland, foraging, male foraging	suitable nesting habitat; possible breeder	AOD
HH217	A	28/04/2023	13:58	Hen Harrier	1	conifer plantation, foraging, male soared up from near 2019 nest site. displayed briefly skydance then flew to dough foraging back around to faghry/saddle hill	courtship and display; probable breeding	AOD
HH218	A	28/04/2023	14:12	Hen Harrier	1	conifer plantation, sky dancing, male dancing from 2019 nest location out and back	courtship and display; probable breeding	AOD
HH219	A	28/04/2023	14:22	Hen Harrier	2	conifer plantation, courtship flight, pair flying close together then perched together briefly	courtship and display; probable breeding	AOD
HH220	A	28/04/2023	15:43	Hen Harrier	2	conifer plantation, courtship, pair flying together low in wd4	courtship and display; probable breeding	AOD
HH221	S	03/05/2023	13:38	Hen Harrier	1	conifer plantation, perched/display, male perched near 2019 nest site 10mins then began displaying flew north	courtship and display; probable breeding	AOD
K.004	S	03/05/2023	13:20	Kestrel	1	upland blanket bog, foraging, foraging immature/female	suitable nesting habitat; possible breeder	AOD
HH222	S	03/05/2023	14:20	Hen Harrier	1	conifer plantation, foraging, male foraging caught prey flew back to 2020 nest location and dropped out of view.reappeared again foraging to south.may have dropped prey to unseen female	suitable nesting habitat; possible breeder	AOD
HH223	S	03/05/2023	14:30	Hen Harrier	1	wet grassland and upland blanket bog, foraging, male foraging	suitable nesting habitat; possible breeder	AOD
HH224	S	03/05/2023	14:31	Hen Harrier	1	conifer plantation, flying over, adult female	suitable nesting habitat; possible breeder	AOD
HH225	S	03/05/2023	15:02	Hen Harrier	2	conifer plantation, courtship, male and female flying close and interacting.dropped out of view for several mins then continued north together	courtship and display; probable breeding	AOD
BZ137	E	03/05/2023	16:25	Buzzard	2	conifer plantation, soaring, pair	suitable nesting habitat; possible breeder	AOD
HH226	E	03/05/2023	17:35	Hen Harrier	1	conifer plantation, flying over, male flying mobbed by 2hc	suitable nesting habitat; possible breeder	AOD
HH227	E	03/05/2023	18:38	Hen Harrier	1	upland blanket bog, carrying prey, adult male carrying prey east.	pair; probable breeding	AOD
HH228	A	04/05/2023	12:01	Hen Harrier	2	wet grassland, courtship/foraging, pair engaged in courtship and foraging close together for several mins.male flew off north foraging	courtship and display; probable breeding	AOD
HH229	A	04/05/2023	12:26	Hen Harrier	2	conifer plantation and wet grassland, courtship, pair again in flight close together	courtship and display; probable breeding	AOD

K.005	A	04/05/2023	13:10	Kestrel	1	wet grassland, foraging, fem/imm	suitable nesting habitat; possible breeder	AOD
HH230	A	04/05/2023	14:32	Hen Harrier	2	conifer plantation and upland blanket bog, display, male and female up circling from low in wd4 male took off sky dancing up the hill female moved towards site flying over wd4	courtship and display; probable breeding	AOD
HH231	A	04/05/2023	14:45	Hen Harrier	1	conifer plantation and upland blanket bog, foraging, male foraging	suitable nesting habitat; possible breeder	AOD
HH232	I	04/05/2023	15:25	Hen Harrier	1	conifer plantation and wet grassland, dancing, adult male sky dancing several mins	courtship and display; probable breeding	AOD
HH233	I	04/05/2023	15:42	Hen Harrier	1	wet grassland, foraging/carrying prey, male foraging caught prey out of view carried it out of site	pair; probable breeding	AOD
HH234	I	04/05/2023	17:56	Hen Harrier	1	conifer plantation, soaring, female soaring over 2020 2021 nest in northern section	suitable nesting habitat; possible breeder	AOD
SH056	P	09/05/2023	12:48	Sparrowhawk	1	conifer plantation, fly, female soaring	suitable nesting habitat; possible breeder	AOD
HH235	P	09/05/2023	16:17	Hen Harrier	1	upland blanket bog, foraging, male	suitable nesting habitat; possible breeder	AOD
HH236	P	09/05/2023	16:36	Hen Harrier	1	upland blanket bog, foraging, male	suitable nesting habitat; possible breeder	AOD
BZ138	P	09/05/2023	16:43	Buzzard	1	mixed conifer woodland, fly	suitable nesting habitat; possible breeder	AOD
HH237	C	09/05/2023	18:20	Hen Harrier	1	conifer plantation and wet grassland, prey carrying, male carrying prey.flew out of sight	pair; probable breeding	AOD
HH238	H	10/05/2023	10:56	Hen Harrier	1	conifer plantation and wet grassland, travelling, male flying in rain	suitable nesting habitat; possible breeder	AOD
HH239	H	10/05/2023	11:05	Hen Harrier	1	conifer plantation, fly, female appeared briefly between trees low	suitable nesting habitat; possible breeder	AOD
HH240	H	10/05/2023	13:12	Hen Harrier	1	conifer plantation and upland blanket bog, foraging	suitable nesting habitat; possible breeder	AOD
SH057	H	10/05/2023	13:38	Sparrowhawk	1	conifer plantation, flying over, female	suitable nesting habitat; possible breeder	AOD
HH241	E	11/05/2023	11:14	Hen Harrier	1	conifer plantation, prey carry, male into southern area w prey lost behind trees	pair; probable breeding	AOD
BZ139	E	11/05/2023	11:57	Buzzard	1	conifer plantation, soaring, soaring adult	suitable nesting habitat; possible breeder	AOD

SH058	E	11/05/2023	12:40	Sparrowhawk	1	conifer plantation, fly, female into historic nest area	suitable nesting habitat; possible breeder	AOD
BZ140	E	11/05/2023	14:49	Buzzard	1	#N/A	suitable nesting habitat; possible breeder	AOD
HH242	E	11/05/2023	14:36	Hen Harrier	1	conifer plantation, soaring, male	suitable nesting habitat; possible breeder	AOD
HH243	O	23/05/2023	10:58	Hen Harrier	1	#N/A	suitable nesting habitat; possible breeder	AOD
HH244	O	23/05/2023	10:59	Hen Harrier	1	conifer plantation, flying, female circling v low briefly not foraging.possible nest area	suitable nesting habitat; possible breeder	AOD
HH245	O	23/05/2023	11:21	Hen Harrier	1	#N/A	suitable nesting habitat; possible breeder	AOD
BZ141	O	23/05/2023	11:48	Buzzard	1	#N/A	suitable nesting habitat; possible breeder	AOD
HH246	O	23/05/2023	12:47	Hen Harrier	2	conifer plantation and upland blanket bog, alarm at nest, m and f at nest confirmed alarming. female flew from low perch	nest with eggs; confirmed breeding	AOD
BZ142	O	23/05/2023	13:17	Buzzard	1	conifer plantation, soaring	suitable nesting habitat; possible breeder	AOD
BZ143	O	23/05/2023	13:18	Buzzard	1	#N/A	suitable nesting habitat; possible breeder	AOD
K.006	O	23/05/2023	14:02	Kestrel	1	conifer plantation, travelling	suitable nesting habitat; possible breeder	AOD
HH247	E	24/05/2023	12:52	Hen Harrier	2	conifer plantation, flying, male from hh1 chasing 2nd male to north. returned south after other male left area	suitable nesting habitat; possible breeder	AOD
HH248	U	31/05/2023	17:23	Hen Harrier	1	upland blanket bog, foraging, foraging male	suitable nesting habitat; possible breeder	AOD
K.007	N	06/06/2023	12:05	Kestrel	1	conifer plantation and upland blanket bog, foraging	suitable nesting habitat; possible breeder	AOD
SH059	N	06/06/2023	13:00	Sparrowhawk	1	#N/A	suitable nesting habitat; possible breeder	AOD
BZ144	N	06/06/2023	13:25	Buzzard	1	conifer plantation, soaring	suitable nesting habitat; possible breeder	AOD
BZ145	N	06/06/2023	16:55	Buzzard	1	conifer plantation, soaring	suitable nesting habitat; possible breeder	AOD
BZ146	H	07/06/2023	15:42	Buzzard	1	#N/A	suitable nesting habitat; possible breeder	AOD

HH249	P	07/06/2023	20:40	Hen Harrier	1	upland blanket bog and conifer plantation, foraging, male foraging	suitable nesting habitat; possible breeder	AOD
SH060	I	13/06/2023	13:01	Sparrowhawk	1	conifer plantation, fly, female up from possible nest site	suitable nesting habitat; possible breeder	AOD
BZ147	J	14/06/2023	10:03	Buzzard	1	conifer plantation, soaring, adult soaring	suitable nesting habitat; possible breeder	AOD
HH250	j	14/06/2023	10:22	Hen Harrier	1	conifer plantation, soaring, male soaring uphill flew east lost in wd4	suitable nesting habitat; possible breeder	AOD
BZ148	j	14/06/2023	10:55	Buzzard	2	conifer plantation, soaring, pair soaring	suitable nesting habitat; possible breeder	AOD
SH061	o	21/06/2023	12:21	Sparrowhawk	1		suitable nesting habitat; possible breeder	AOD
HH251	o	21/06/2023	12:44	Hen Harrier	1	upland blanket bog and conifer plantation, at nest, female carrying vegetation at nest	nest building; probable breeding	AOD
HH252	o	21/06/2023	13:01	Hen Harrier	1	conifer plantation, soaring, female up soaring from nest	suitable nesting habitat; possible breeder	AOD
HH253	o	21/06/2023	13:12	Hen Harrier	1	conifer plantation, prey carrying, female into nest with prey	adult carrying food/faecal sac; confirmed breeding	AOD
HH254	o	21/06/2023	13:14	Hen Harrier	1	conifer plantation, fly, female back out to perch after bringing prey into nest	adult carrying food/faecal sac; confirmed breeding	AOD
BZ149	o	21/06/2023	14:01	Buzzard	1	conifer plantation, fly	suitable nesting habitat; possible breeder	AOD
HH255	o	21/06/2023	14:07	Hen Harrier	2	conifer plantation and upland blanket bog, foodpass prey carrying, male in from north with prey met female foodpass female brought prey to nest male perched out of sight.	adult carrying food/faecal sac; confirmed breeding	AOD
HH256	o	21/06/2023	14:52	Hen Harrier	2	conifer plantation, circling, male and female up soaring out from nest	occupied nest; confirmed breeding	AOD
BZ150	p	21/06/2023	17:05	Buzzard	1		suitable nesting habitat; possible breeder	AOD
BZ151	t	23/06/2023	16:24	Buzzard	1	conifer plantation, soaring	#N/A	AOD
HH257	l	28/06/2023	16:05	Hen Harrier	1	conifer plantation, flying, male flying low over trees briefly	suitable nesting habitat; possible breeder	AOD
SH062	l	28/06/2023	16:45	Sparrowhawk	1	conifer plantation, flying, female flying low	suitable nesting habitat; possible breeder	AOD

SH063	l	28/06/2023	17:10	Sparrowhawk	1	conifer plantation, prey carrying, female in with prey. likely nest site	adult carrying food/faecal sac; confirmed breeding	AOD
SH064	m	29/06/2023	15:01	Sparrowhawk	1	conifer plantation, prey carrying, female in with prey. another nest site confirmed here	adult carrying food/faecal sac; confirmed breeding	AOD
SH065	m	07/07/2023	17:46	Sparrowhawk	1	wet grassland, flying	suitable nesting habitat; possible breeder	AOD
HH258	o	11/07/2023	13:09	Hen Harrier	2	conifer plantation and upland blanket bog, prey carry, foodpass, male in with prey from nw. foodpass w female then male back out to ne	adult carrying food/faecal sac; confirmed breeding	AOD
HH259	H	25/07/2023	16:44	Hen Harrier	1	wet grassland, foraging, foraging	suitable nesting habitat; possible breeder	AOD
HH260	TRANSECT	26/07/2023	07:53	Hen Harrier	3	upland blanket bog and conifer plantation, fledged chicks at nest, three chicks flying around nest site	adult carrying food/faecal sac; confirmed breeding	AOD
HH261	S	27/07/2023	13:39	Hen Harrier	3	upland blanket bog, chicks at nest, chicks present at nest	fledged young; confirmed breeding	AOD
ML002	S	27/07/2023	14:07	Merlin	1	wet grassland, hunting, hunting mp flock. unable to age/sex	suitable nesting habitat; possible breeder	AOD
HH262	S	27/07/2023	14:19	Hen Harrier	4	conifer plantation and upland blanket bog, foraging, male at nest with 3 chicks then flew off towards dough	adult carrying food/faecal sac; confirmed breeding	AOD
HH263	S	27/07/2023	14:36	Hen Harrier	1	wet grassland and upland blanket bog, foraging, male foraging	suitable nesting habitat; possible breeder	AOD
ML003	S	27/07/2023	15:12	Merlin	1	upland blanket bog and conifer plantation, hunting, female hunting	suitable nesting habitat; possible breeder	AOD
HH264	S	27/07/2023	15:35	Hen Harrier	1	upland blanket bog, foraging, male at nest then foraging up towards dough mtn.	adult carrying food/faecal sac; confirmed breeding	AOD
HH265	S	27/07/2023	16:02	Hen Harrier	4	upland blanket bog and wet grassland, foraging/prey carrying, male in with prey met by three chicks flew off lost in wd4	adult carrying food/faecal sac; confirmed breeding	AOD
HH266	S	27/07/2023	16:10	Hen Harrier	1	upland blanket bog and conifer plantation, foraging, female foraging	suitable nesting habitat; possible breeder	AOD
HH267	P	27/07/2023	19:25	Hen Harrier	1	upland blanket bog, foraging, male foraging	suitable nesting habitat; possible breeder	AOD
HH268	S	28/07/2023	14:51	Hen Harrier	2	conifer plantation, chicks flying, two chicks flying well away from nest, soaring.	fledged young; confirmed breeding	AOD

HH269	S	28/07/2023	15:49	Hen Harrier	1	upland blanket bog, flying over, female flying	suitable nesting habitat; possible breeder	AOD
HH270	I	28/07/2023	19:29	Hen Harrier	3	upland blanket bog, flying chick at nest, 3 chicks around nest	fledged young; confirmed breeding	AOD
HH271	I	28/07/2023	19:30	Hen Harrier	1	upland blanket bog and wet grassland, foraging, foraging male	suitable nesting habitat; possible breeder	AOD
WE003	h	02/08/2023	16:16	White-tailed Eagle	1	upland blanket bog and conifer plantation, flying over, adult eagle, no tags visible. flying across site perched on hillside. mobbed by rn	suitable nesting habitat; possible breeder	AOD
WE004	h	02/08/2023	16:22	White-tailed Eagle	1	conifer plantation, upland blanket bog and wet grassland, flying/perch, adult perched then fly ne mobbed by rn. no tags visible	suitable nesting habitat; possible breeder	AOD
SH066	h	02/08/2023	18:08	Sparrowhawk	1	conifer plantation, at nest, male from known nest site	adult carrying food/faecal sac; confirmed breeding	AOD
BZ152	j	04/08/2023	13:06	Buzzard	1	conifer plantation, fly, flying	suitable nesting habitat; possible breeder	AOD
K.008	j	04/08/2023	13:21	Kestrel	1	upland blanket bog, foraging, young bird foraging	fledged young; confirmed breeding	AOD
BZ153	p	16/08/2023	12:32	Buzzard	1	#N/A	suitable nesting habitat; possible breeder	AOD
K.009	p	16/08/2023	14:08	Kestrel	1	#N/A	fledged young; confirmed breeding	AOD
BZ154	j	22/08/2023	14:16	Buzzard	1	conifer plantation, soaring, adult	suitable nesting habitat; possible breeder	AOD
BZ155	p	22/08/2023	17:03	Buzzard	1	conifer plantation, fly	suitable nesting habitat; possible breeder	AOD
SH067	p	22/08/2023	17:04	Sparrowhawk	1	conifer plantation, fly, female flushed	suitable nesting habitat; possible breeder	AOD

Appendix 2 Table 6 Foraging Vantage Point Survey Data

Ref.	FVP	Date	Time	Species	Number	Habitat and activity	Breeding status	Surveyor
HH001	fvp1	27/06/2023	07:37	Hen Harrier	1	upland blanket bog, flying, female flying low	suitable nesting habitat; possible breeder	AOD
HH002	fvp1	27/06/2023	07:57	Hen Harrier	2	conifer plantation, upland blanket bog and wet grassland, flying calling, pair up from nest area circling. female alarm calling	agitated behaviour; probable breeding	AOD
HH003	fvp1	27/06/2023	08:05	Hen Harrier	2	upland blanket bog, flying foraging, pair circled female into nest male flew west	probable nest site; probable breeding	AOD
HH004	fvp1	27/06/2023	08:25	Hen Harrier	1	conifer plantation, upland blanket bog and , prey carry, male flew in from nw with prey to nest area	adult carrying food/faecal sac; confirmed breeding	AOD
HH005	fvp1	27/06/2023	08:46	Hen Harrier	1	conifer plantation, wet grassland and , foraging, male out from nest foraging	suitable nesting habitat; possible breeder	AOD
HH006	fvp1	27/06/2023	09:19	Hen Harrier	1	conifer plantation, travelling foraging, male up from nest are travelled to dough mtn foraging	suitable nesting habitat; possible breeder	AOD
HH007	fvp1	27/06/2023	09:21	Hen Harrier	1	conifer plantation, upland blanket bog and , foraging, female up from nest foraging then out west	suitable nesting habitat; possible breeder	AOD
HH008	fvp2	27/06/2023	10:48	Hen Harrier	1	conifer plantation, wet grassland and , prey carrying, foraging, female in with prey to nest then flew off west foraging	adult carrying food/faecal sac; confirmed breeding	AOD
HH009	fvp2	27/06/2023	11:16	Hen Harrier	1	wet grassland, foraging, male foraging up from direction of nest	suitable nesting habitat; possible breeder	AOD
HH010	fvp2	27/06/2023	11:46	Hen Harrier	1	upland blanket bog, foraging, female foraging around nest	suitable nesting habitat; possible breeder	AOD
HH011	fvp2	27/06/2023	12:16	Hen Harrier	2	conifer plantation, wet grassland and upland blanket bog, foraging, foodpass, male in to nest with prey met female in foodpass at nest. male continued foraging out far to sw	adult carrying food/faecal sac; confirmed breeding	AOD

HH012	fvp2	05/07/2023	09:45	Hen Harrier		1	wet grassland, foraging, male foraging	suitable nesting habitat; possible breeder	AOD
HH013	fvp2	05/07/2023	10:10	Hen Harrier		2	conifer plantation, upland blanket bog and , soaring, male and female soaring around nest site	pair; probable breeding	AOD
HH014	fvp2	05/07/2023	10:45	Hen Harrier		2	conifer plantation, soaring, foraging, male and female soaring then male moved off south foraging	pair; probable breeding	AOD
HH015	fvp2	05/07/2023	12:16	Hen Harrier		1	wet grassland, upland blanket bog and , foraging, male foraging for approx 10mins up saddle hill	suitable nesting habitat; possible breeder	AOD
HH016	fvp2	05/07/2023	13:30	Hen Harrier		1	conifer plantation, mobbing at nest, male mobbing bz near nest site. drove bz off to east and male returned to nest area	agitated behaviour; probable breeding	AOD
HH017	fvp2	05/07/2023	13:46	Hen Harrier		1	conifer plantation, prey carrying, foraging, male into nest with prey then foraging out to north	adult carrying food/faecal sac; confirmed breeding	AOD
HH018	fvp2	05/07/2023	14:02	Hen Harrier		1	conifer plantation, upland blanket bog and , prey carrying, foodpass, foraging, male in with prey foodpass to female, then out west foraging again	adult carrying food/faecal sac; confirmed breeding	AOD
HH019	fvp2	05/07/2023	14:10	Hen Harrier		1	conifer plantation, soaring, female soaring over nest	suitable nesting habitat; possible breeder	AOD
HH020	fvp2	05/07/2023	15:25	Hen Harrier		2	conifer plantation, wet grassland and , foraging, prey carrying, foodpass, male in w prey to onest foodpass to female then back out to north foraging up saddle hill	adult carrying food/faecal sac; confirmed breeding	AOD
HH021	fvp2	05/07/2023	15:36	Hen Harrier		2	conifer plantation, wet grassland and upland blanket bog, foraging, prey carry, foodpass, male in w prey from north. foodpass with female at nest female dropped to nest male flew sw	adult carrying food/faecal sac; confirmed breeding	AOD
HH022	fvp2	05/07/2023	15:43	Hen Harrier		1	upland blanket bog, conifer plantation and , soaring, female soaring at nest	suitable nesting habitat; possible breeder	AOD
HH023	fvp2	05/07/2023	15:46	Hen Harrier		2	conifer plantation, prey carry, foodpass, male in from north w prey foodpass to female at nest. female dropped to nest male flew off west	adult carrying food/faecal sac; confirmed breeding	AOD
HH024	fvp1	06/07/2023	10:58	Hen Harrier		1	upland blanket bog, wet grassland and , foraging, female foraging near nest then out west	suitable nesting habitat; possible breeder	AOD

HH025	fvp1	06/07/2023	12:55	Hen Harrier		1	upland blanket bog, wet grassland and , foraging, male foraging	suitable nesting habitat; possible breeder	AOD
HH026	fvp1	06/07/2023	12:36	Hen Harrier		1	upland blanket bog, wet grassland and , foraging, female back in towards nest foraging dropped into nest area	suitable nesting habitat; possible breeder	AOD
HH027	fvp1	06/07/2023	12:41	Hen Harrier		1	conifer plantation, upland blanket bog and , prey carrying, travelling, foraging, male in from north w prey dropped to nest are then continued out to se	adult carrying food/faecal sac; confirmed breeding	AOD
HH028	fvp1	06/07/2023	13:11	Hen Harrier		1	wet grassland, upland blanket bog and , foraging, female foraging	suitable nesting habitat; possible breeder	AOD
HH029	fvp1	06/07/2023	14:40	Hen Harrier		1	upland blanket bog, conifer plantation and , foraging, female foraging	suitable nesting habitat; possible breeder	AOD
HH030	fvp1	06/07/2023	15:04	Hen Harrier		1	upland blanket bog, foraging travelling, female	suitable nesting habitat; possible breeder	AOD
HH031	fvp1	07/07/2023	11:01	Hen Harrier		2	conifer plantation, upland blanket bog and , prey carrying, foodpass, male in from nw w prey foodpass with female then male off to se	adult carrying food/faecal sac; confirmed breeding	AOD
HH032	fvp1	07/07/2023	11:09	Hen Harrier		1	conifer plantation, travelling, foraging, female out from nest	suitable nesting habitat; possible breeder	AOD
HH033	fvp1	07/07/2023	11:36	Hen Harrier		1	conifer plantation, soaring, female circling over nest	suitable nesting habitat; possible breeder	AOD
HH034	fvp1	07/07/2023	11:46	Hen Harrier		2	conifer plantation, prey carry, mobbing, male in w prey from north. foodpass to female both dropped to near nest. male then up to mob raven and dropped to nest again	adult carrying food/faecal sac; confirmed breeding	AOD
HH035	fvp1	07/07/2023	12:09	Hen Harrier		1	conifer plantation, upland blanket bog and , soaring, foraging, female circling nest then foraging out from nest area to west	suitable nesting habitat; possible breeder	AOD
HH036	fvp1	07/07/2023	12:23	Hen Harrier		2	conifer plantation, prey carry, foodpass, mobbing, male in from north w prey foodpass to female. male flew up mobbing three ravens to east	adult carrying food/faecal sac; confirmed breeding	AOD
HH037	fvp1	07/07/2023	12:41	Hen Harrier		1	upland blanket bog, foraging, foraging near nest	suitable nesting habitat; possible breeder	AOD

HH038	fvp1	07/07/2023	12:45	Hen Harrier		1	conifer plantation, wet grassland and , soaring, travelling , foraging, male soaring up high from nest towards dough mtn began foraging	suitable nesting habitat; possible breeder	AOD
HH039	fvp2	07/07/2023	13:00	Hen Harrier		2	conifer plantation, soaring, male and female soaring above nest site	pair; probable breeding	AOD
HH040	fvp2	07/07/2023	13:34	Hen Harrier		1	conifer plantation, wet grassland and , prey carrying, soaring, travelling, male in w prey to nest area. flew back out soaring up to dough mtn	adult carrying food/faecal sac; confirmed breeding	AOD
HH041	fvp2	07/07/2023	14:38	Hen Harrier		1	wet grassland, upland blanket bog and , foraging, male foraging	suitable nesting habitat; possible breeder	AOD
HH042	fvp2	07/07/2023	14:51	Hen Harrier		1	conifer plantation, wet grassland and , foraging, prey carrying, mobbing, male casught prey back down to nest. foodpass with female who dropped to nest male continued up mobbing m to east	adult carrying food/faecal sac; confirmed breeding	AOD
HH043	fvp2	07/07/2023	15:05	Hen Harrier		1	wet grassland, upland blanket bog and , foraging, male foraging	suitable nesting habitat; possible breeder	AOD
HH044	fvp2	07/07/2023	15:09	Hen Harrier		2	conifer plantation, wet grassland and upland blanket bog, prey carry, foodpass, foraging, male in from nw with prey foodpass a nest w female. male then back out soaring over forestry then back foraging along dough mtn and towards saddle hill	adult carrying food/faecal sac; confirmed breeding	AOD
HH045	fvp2	07/07/2023	15:19	Hen Harrier		1	conifer plantation, wet grassland and , travelling, soaring, foraging, foodpass, male in w prey foodpass to female then back out mobbing m, circled back towards saddle hill foraging up hill	adult carrying food/faecal sac; confirmed breeding	AOD
HH046	fvp2	07/07/2023	15:32	Hen Harrier		2	conifer plantation, wet grassland and , foodpass, foraging, travelling, male in w prey to nest foodpass with female. male back out to se travelling	adult carrying food/faecal sac; confirmed breeding	AOD
HH047	fvp1	10/07/2023	15:19	Hen Harrier		1	upland blanket bog, flying, female	suitable nesting habitat; possible breeder	AOD
HH048	fvp1	10/07/2023	15:25	Hen Harrier		2	upland blanket bog, conifer plantation and , soaring, pair circling at nest male moved off east	pair; probable breeding	AOD
HH049	fvp1	10/07/2023	15:33	Hen Harrier		2	conifer plantation, upland blanket bog and , prey carry, foodpass, foraging, male in w prey to female form nw. male flew off west foraging	adult carrying food/faecal sac; confirmed breeding	AOD

HH050	fvp1	10/07/2023	16:06	Hen Harrier		1	conifer plantation, flying, male flew across nest area from west out east	suitable nesting habitat; possible breeder	AOD
HH051	fvp1	10/07/2023	16:23	Hen Harrier		1	conifer plantation, upland blanket bog and , flying, male	suitable nesting habitat; possible breeder	AOD
HH052	fvp2	17/07/2023	15:11	Hen Harrier		1	conifer plantation, soaring, male soaring east from nest	suitable nesting habitat; possible breeder	AOD
HH053	fvp2	17/07/2023	15:26	Hen Harrier		1	conifer plantation, upland blanket bog and , soaring,foraging, female soaring over nest then out towards dough mtn foraging, notably far from nest for female	suitable nesting habitat; possible breeder	AOD
HH054	fvp2	17/07/2023	15:53	Hen Harrier		1	upland blanket bog, wet grassland and , prey carry, foraging, soaring, female in with prey from dough mtn dropped to nest then circling after	adult carrying food/faecal sac; confirmed breeding	AOD
HH055	fvp2	17/07/2023	16:04	Hen Harrier		1	wet grassland, conifer plantation and , foraging, female out from nest up saddle hill foraging	suitable nesting habitat; possible breeder	AOD
HH056	fvp2	17/07/2023	17:41	Hen Harrier		1	conifer plantation, wet grassland and , prey carry, foraging, female in with prey from north.circled nest for several mins after	adult carrying food/faecal sac; confirmed breeding	AOD
HH057	fvp1	18/07/2023	11:47	Hen Harrier		1	conifer plantation, flying/foraging, male flying over wd4 then foraging up saddle hill	suitable nesting habitat; possible breeder	AOD
HH058	fvp1	18/07/2023	12:08	Hen Harrier		3	upland blanket bog, conifer plantation and , prey to nest, female in with prey to nest. at least 2 chicks met her at nest.	adult carrying food/faecal sac; confirmed breeding	AOD
HH059	fvp1	18/07/2023	12:38	Hen Harrier		2	upland blanket bog, conifer plantation and , prey carrying, female in with prey.at least one chick met her.female circled after	adult carrying food/faecal sac; confirmed breeding	AOD
HH060	fvp1	18/07/2023	13:09	Hen Harrier		1	conifer plantation, upland blanket bog and , prey carry, female in with prey to nest flew back out sw	adult carrying food/faecal sac; confirmed breeding	AOD
HH061	fvp1	18/07/2023	13:33	Hen Harrier		1	conifer plantation, upland blanket bog and , prey carrying, male in with prey.took off ne	adult carrying food/faecal sac; confirmed breeding	AOD
HH062	fvp1	18/07/2023	15:56	Hen Harrier		1	conifer plantation, upland blanket bog and , prey carry/foraging, male into nest with prey.took off back out foraging to nw up saddle hill	adult carrying food/faecal sac; confirmed breeding	AOD

HH063	fvp2	19/07/2023	11:51	Hen Harrier		3	upland blanket bog, conifer plantation and , chicks at nest, three chicks flying low at nest	adult carrying food/faecal sac; confirmed breeding	AOD
HH064	fvp2	19/07/2023	12:05	Hen Harrier		2	upland blanket bog, conifer plantation and , chicks at nest, 2 chicks flying back and forth from nest	adult carrying food/faecal sac; confirmed breeding	AOD
HH065	fvp2	19/07/2023	13:41	Hen Harrier		3	upland blanket bog, preycarrying/chicksat nest, female in w prey met by twoflying chicks.female circled then flew off se	adult carrying food/faecal sac; confirmed breeding	AOD
HH066	fvp1	20/07/2023	11:10	Hen Harrier		3	upland blanket bog, prey carry/foraging, male into nest area with prey met by 2 chicks.male flew up dough soaring then foraging	adult carrying food/faecal sac; confirmed breeding	AOD
HH067	fvp1	20/07/2023	11:34	Hen Harrier		1	upland blanket bog, chick at nest, chick flew low at nest	adult carrying food/faecal sac; confirmed breeding	AOD
HH068	fvp1	20/07/2023	11:47	Hen Harrier		1	conifer plantation, upland blanket bog and , foraging, male in with prey to nest area then flew off west foraging up saddle hill	adult carrying food/faecal sac; confirmed breeding	AOD
HH069	fvp1	20/07/2023	12:49	Hen Harrier		1	conifer plantation, upland blanket bog and , flying/foraging, female in with prey to nest.soared up over wd4 then began foraging up dough mtn.	adult carrying food/faecal sac; confirmed breeding	AOD
HH070	fvp1	20/07/2023	13:05	Hen Harrier		2	conifer plantation, upland blanket bog and , foraging, female inyo nest with prey met by one chick. soared off to north foraging up dough mtn	adult carrying food/faecal sac; confirmed breeding	AOD
HH071	fvp1	20/07/2023	14:09	Hen Harrier		1	conifer plantation, upland blanket bog and , prey carry/foraging, male in with prey to nest soared up and moved west	adult carrying food/faecal sac; confirmed breeding	AOD
HH072	fvp1	20/07/2023	14:29	Hen Harrier		1	conifer plantation, upland blanket bog and , foraging, male dropped prey to nest then took off north	adult carrying food/faecal sac; confirmed breeding	AOD
HH073	fvp1	20/07/2023	14:48	Hen Harrier		1	conifer plantation, upland blanket bog and , prey carrying, female in from north with prey soared breifly then settled near nest	adult carrying food/faecal sac; confirmed breeding	AOD
HH074	fvp1	20/07/2023	15:30	Hen Harrier		1	conifer plantation, soaring, female soaring up from nest	suitable nesting habitat; possible breeder	AOD
HH075	fvp1	20/07/2023	16:05	Hen Harrier		3	conifer plantation, upland blanket bog and , chicks at nest, female and two chicks flying over nest together for several mins	adult carrying food/faecal sac; confirmed breeding	AOD

HH076	fvp1	20/07/2023	16:13	Hen Harrier		1	conifer plantation, fly, female flying north	suitable nesting habitat; possible breeder	AOD
HH077	fvp1	20/07/2023	16:50	Hen Harrier		3	conifer plantation, soaring/foraging, female and two chicks soaring at nest. Female soar up nw out from nest	adult carrying food/faecal sac; confirmed breeding	AOD
HH078	fvp1	21/07/2023	10:20	Hen Harrier		4	upland blanket bog, conifer plantation and , prey carry, male in with prey met by three chicks. Male then lost in wd4	adult carrying food/faecal sac; confirmed breeding	AOD
HH079	fvp1	21/07/2023	10:55	Hen Harrier		1	conifer plantation, upland blanket bog and , prey carrying, female in with prey from south dropped to nest area then flew off west	adult carrying food/faecal sac; confirmed breeding	AOD
HH080	fvp1	21/07/2023	11:28	Hen Harrier		4	conifer plantation, upland blanket bog and , prey carry/foraging, male in from north with prey met by three chicks then flew off sw	adult carrying food/faecal sac; confirmed breeding	AOD
HH081	fvp1	25/07/2023	13:25	Hen Harrier		4	upland blanket bog, prey carry/foraging, female in with prey to three chicks.female then soared and moved off west foraging	adult carrying food/faecal sac; confirmed breeding	AOD
HH082	fvp1	25/07/2023	13:29	Hen Harrier		3	upland blanket bog, chicks at nest, chasing at nest.one chick visibly smaller possibly 2f 1m	#N/A	AOD
HH083	fvp1	25/07/2023	14:51	Hen Harrier		2	upland blanket bog, conifer plantation and , prey carry, female in with prey met by one chick approx 500m from nest	adult carrying food/faecal sac; confirmed breeding	AOD
HH084	fvp1	25/07/2023	15:24	Hen Harrier		1	upland blanket bog, foraging, soared up from nest several mins then flew up saddle hill foraging	suitable nesting habitat; possible breeder	AOD
HH085	fvp1	01/08/2023	12:25	Hen Harrier		1	upland blanket bog, foraging, chick foraging near nest	#N/A	AOD
HH086	fvp1	01/08/2023	12:31	Hen Harrier		2	upland blanket bog, conifer plantation and , prey carrying/foraging, female in w prey for one chick.female flew off ne	adult carrying food/faecal sac; confirmed breeding	AOD
HH087	fvp1	01/08/2023	12:57	Hen Harrier		3	upland blanket bog, conifer plantation and , foraging, female in with prey met by two chicks west of nest area.female movedmout foraging to se	adult carrying food/faecal sac; confirmed breeding	AOD
HH088	fvp1	01/08/2023	15:09	Hen Harrier		3	conifer plantation, upland blanket bog and , prey carry/foraging, female in from nw met by 2 chicks.female then flew off north	adult carrying food/faecal sac; confirmed breeding	AOD

HH089	fvp2	01/08/2023	16:15	Hen Harrier		3	conifer plantation, prey carry/foraging, female in two chicks met female.female flew out back west	adult carrying food/faecal sac; confirmed breeding	AOD
HH090	fvp2	01/08/2023	16:34	Hen Harrier		2	upland blanket bog, foraging, two chicks practicing foraging	fledged young; confirmed breeding	AOD
HH091	fvp2	01/08/2023	17:05	Hen Harrier		4	conifer plantation, prey carry/travelling/foraging, male in w prey met by three chicks at nest.flew off west	adult carrying food/faecal sac; confirmed breeding	AOD
HH092	fvp2	01/08/2023	17:23	Hen Harrier		1	conifer plantation, wet grassland and upland blanket bog, prey/carry foraging, male in w prey gave to unseen chick.malew flew back out west	adult carrying food/faecal sac; confirmed breeding	AOD
HH093	fvp2	01/08/2023	18:10	Hen Harrier		2	conifer plantation, upland blanket bog and , prey carry/foraging, male in w prey met one chick. then flew up saddle hill foraging	adult carrying food/faecal sac; confirmed breeding	AOD
HH094	fvp2	02/08/2023	11:49	Hen Harrier		1	wet grassland, conifer plantation and , foraging, male foraging saddle hill	suitable nesting habitat; possible breeder	AOD
HH095	fvp2	02/08/2023	13:28	Hen Harrier		1	upland blanket bog, chick foraging, chick flying low/foraging near nest	fledged young; confirmed breeding	AOD
HH096	fvp1	03/08/2023	19:32	Hen Harrier		1	conifer plantation, fly, chick flying at nest	fledged young; confirmed breeding	AOD
HH097	fvp1	03/08/2023	20:57	Hen Harrier		2	conifer plantation, upland blanket bog and , soaring, two chicks soaring at nest	fledged young; confirmed breeding	AOD
HH098	fvp1	03/08/2023	21:22	Hen Harrier		1	upland blanket bog, fly, male in flight around nest	suitable nesting habitat; possible breeder	AOD
HH099	fvp2	04/08/2023	16:14	Hen Harrier		1	conifer plantation, upland blanket bog and , soaring/foraging, chick around nest area	fledged young; confirmed breeding	AOD

Appendix 2 Table 7 Incidental Survey Data

Ref.	Location	Date	Time	Species	Number	Habitat and activity	Surveyor
HH015	Vantage Point Survey; VP1	13/04/2023	09:08	Hen Harrier	1	improved agricultural grassland; flying, male flew across site briefly mobbed by 2 hc	RV

HH016	Vantage Point Survey; VP2	20/04 /2023	08:44	Hen Harrier	1	conifer plantation; flying, male circled up and flew around before landing close to 2021 nest	RV
HH017	Vantage Point Survey; VP2	20/04 /2023	08:46	Hen Harrier	1	conifer plantation; flying, same male flew back to where it originally came from	RV
LB048	Breeding Raptor Survey; TAWNYLUST	03/05 /2023	14:22	Lesser Black-backed Gull	4	conifer plantation; flying over	AOD
RG017	Breeding Raptor Survey; DOUGH MTN	09/05 /2023	12:47	Red Grouse	1	upland blanket bog; call/fly, male	AOD
RG018	Breeding Raptor Survey; Dough mtn	09/05 /2023	15:39	Red Grouse	2	upland blanket bog; fly/call, 2 males	AOD
SN070	Breeding Raptor Survey; DOUGH MTN	09/05 /2023	14:50	Snipe	1	upland blanket bog; drumming	AOD
SN071	Breeding Raptor Survey; DOUGH MTN	09/05 /2023	15:40	Snipe	2	upland blanket bog; chipping/flushed	AOD
SN072	Breeding Raptor Survey; DOUGH MTN	09/05 /2023	14:41	Snipe	1	upland blanket bog; chipping	AOD
SN073	Vantage Point Survey; VP4 approach	10/05 /2023	22:30	Snipe	13	improved agricultural grassland, scrub and semi-natural grassland; persistent display calls and flights in darkness on return from survey, accurate numbers were impossible due to the darkness, above count is an estimate	NM
MA003	Breeding Raptor Survey; KILLEA	11/05 /2023	13:10	Mallard	1	conifer plantation and upland blanket bog; fly, male fly over	AOD
GL006	Breeding Raptor Survey; BOLEYBOY	23/05 /2023	13:38	Grey Wagtail	2	watercourses; nest, pair at nest	AOD
RG019	Breeding Raptor Survey; KILLEA	07/06 /2023	19:47	Red Grouse	1	upland blanket bog; call	AOD
SN074	Breeding Raptor Survey; RAHEELIN	22/06 /2023	19:19	Snipe	1	wet grassland; drumming, drumming	AOD

LB049	Foraging Vantage Point; tawnyfeacle	27/06/2023	07:43	Lesser Black-backed Gull	1	conifer plantation; travelling, adult	AOD
H.006	Foraging Vantage Point; tawnyfeacle	27/06/2023	08:52	Grey Heron	1	eroding/upland rivers; travelling foraging	AOD
LB050	Foraging Vantage Point; tawnyfeacle	27/06/2023	09:38	Lesser Black-backed Gull	1	upland blanket bog; travelling, adult flying low	AOD
BZ022	Foraging Vantage Point; tawnyfeacle	27/06/2023	09:44	Buzzard	1	riparian woodland; perched	AOD
HH018	Foraging Vantage Point; Lisnabrack	27/06/2023	13:45	Hen Harrier	1	wet grassland; foraging, female foraging. observed after survey end on way home	AOD
BZ023	Breeding Raptor Survey; SADDLE HILL	05/07/2023	11:57	Buzzard	1	wet grassland; foraging	AOD
LB051	Foraging Vantage Point; fvp1	06/07/2023	14:42	Lesser Black-backed Gull	2	conifer plantation; travelling, adults	AOD
LB052	Foraging Vantage Point; tawnyfeacle	07/07/2023	11:32	Lesser Black-backed Gull	1	conifer plantation; travelling, adult	AOD
LB053	Breeding Raptor Survey; BOLEYBOY	11/07/2023	13:23	Lesser Black-backed Gull	1	conifer plantation; flying over, adult	AOD
HH019	Breeding Raptor Survey; BOLEYBOY	11/07/2023	13:37	Hen Harrier	1	conifer plantation; soaring, male soaring over nest	AOD
BZ024	Breeding Raptor Survey; TAWNYFEACLE	18/07/2023	12:17	Buzzard	1	mixed broadleaved/conifer woodland; fly/perch, fly to perch	AOD
BZ025	Breeding Raptor Survey; TAWNYFEACLE	18/07/2023	17:02	Buzzard	1	conifer plantation and wet grassland; soaring	AOD
BZ026	Breeding Raptor Survey; KILLEA	19/07/2023	16:56	Buzzard	1	upland blanket bog and conifer plantation; fly	AOD
SH016	Breeding Raptor Survey; BOLEYBOY	20/07/2023	12:51	Sparrowhawk	1	conifer plantation; soaring, soaring	AOD
BZ027	Breeding Raptor Survey; TAWNYFEACLE	25/07/2023	13:47	Buzzard	3	conifer plantation; begging chick, 2 adult 1 chick soaring begging	AOD
SH017	Breeding Red Grouse Survey; TAWNYFEACLE	01/08/2023	12:32	Sparrowhawk	1	conifer plantation; soaring, female	AOD

SH018	Breeding Raptor Survey; FAUGHERY	01/08 /2023	16:39	Sparrowhawk	2	conifer plantation; fl, recently fledged chicks between trees and begging	AOD
LB054	Breeding Raptor Survey; RAHEELIN	02/08 /2023	15:44	Lesser Black-backed Gull	1	wet grassland; travelling, adult	AOD
SH019	Breeding Raptor Survey; FAUGHERY	02/08 /2023	14:00	Sparrowhawk	1	wet grassland; fly over, female	AOD
CA001	Breeding Raptor Survey;	04/08 /2023	12:59	Cormorant	1	wet grassland and improved agricultural grassland; travelling	AOD
SH020	Breeding Raptor Survey; FAUGHERY	04/08 /2023	16:15	Sparrowhawk	1	conifer plantation; begging, juv begging	AOD
GL007	Breeding Raptor Survey; DOUGH MTN	17/08 /2023	14:04	Grey Wagtail	1	conifer plantation; fly	AOD
SN075	Breeding Raptor Survey; DOUGH MTN	17/08 /2023	14:24	Snipe	1	upland blanket bog; fly, flushed	AOD
K.004	Vantage Point Survey; Access into VP4	29/08 /2023	14:13	Kestrel	1	improved agricultural grassland, scrub and bogs; hunting and hovering over rough farmland and boggy fringes	NM
SN076	Vantage Point Survey; Access into VP4	29/08 /2023	07:47	Snipe	3	improved agricultural grassland and scrub; flying frantically and alarm calling across rough farmland	NM



## APPENDIX 3

**CONFIDENTIAL APPENDIX**