

# Winter Bird Survey Report 2021/2022

Lissinagroagh Wind Farm,  
Co. Leitrim





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## 1. **SUMMARY**

This report outlines the ornithological surveys completed at Lissinagroagh Wind Farm during the 2021/22 winter season. Lissinagroagh Wind Farm has been surveyed previously since 2018.

The following surveys were undertaken during the 2021/22 winter season:

- > Vantage Point Surveys
- > Winter Walkover Surveys
- > Hen Harrier Roost Surveys
- > Red Grouse Surveys

The key observations during surveys were relating to hen harrier and red grouse. These species were recorded frequently and in low numbers and are resident at the wind farm site.

Key impacts resulting from the proposed development for local avian receptors could include habitat loss, disturbance, displacement, and collision risk.

## 2. INTRODUCTION

MKO were appointed to carry out bird surveys at Lissinagroagh, Co. Leitrim for the winter season 2021/22. This report describes the ornithological survey methods employed and survey data collected at Lissinagroagh Wind Farm for the period from October 2021 to March 2022 inclusive.

### 2.1 Background

Lissinagroagh Wind Farm has been surveyed previously since the breeding season 2018. Please see the relevant end of season reports for full details of the survey methods and results from these survey periods. The following constraints on the Proposed Development were outlined in these reports:

- Two hen harrier nest sites within the windfarm site boundary.

### 2.2 Site Description

The site is located north of Manorhamilton Co. Leitrim (Grid Ref: X 591484.00 Y 842226.00). The dominant habitat on site is forestry, upland blanket bog and rough grassland. The total area of the development is approximately 152 hectares. Figure 1.0 shows the wind farm site boundary.

### 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 from October 2021 to March 2022 inclusive. Particular attention has been paid to species of conservation importance and identified target species.

The report is supported by Technical Appendix 1 which contains the raw data from the winter bird surveys in 2021/22. This includes detail on survey times, weather conditions, surveyors, survey results and other additional information. Bird observations during surveys have been digitised and are provided in Technical Appendix 2.

The report is structured as follows:

- An introduction describing the background and a statement of authority.
- A comprehensive description of the ornithological surveys carried out.
- A full description of results for all ornithological surveys carried out.
- A discussion providing a synopsis of the findings of the ornithological surveys.
- A conclusion describing the key findings and possible impacts on the local ornithological receptors.

## 3. METHODS

### 3.1 Scope

The study area for the purposes of ornithological surveys is the redline boundary of the wind farm site and up to a 500m radius. Depending on the survey type, the survey area may extend to 2km and 5km of the wind farm site. Section 3.2 provides details on the field surveys and the survey areas for each.

The following defines terms used in this report.

- “Zones of Influence” (ZOI) for potential ornithological receptors refers to the zone within which potential effects are anticipated. ZOIs were assigned following best available guidance (SNH 2016 and McGuinness et.al 2015).
- “Potential Collision Height” (PCH) refers to the height at which birds are regarded to be at risk of collision with turbine blades. For the purposes of this report, this refers to flights between 25m and 175m high.

Field surveys were designed to monitor the target species expected to be found at the wind farm site. Target species were determined based on the habitats on-site, the species expected in the wider area, Special Protection Areas (SPAs) within the ZOI, and protected species. Target species included those listed on Annex I of the EU Birds Directive (2009/147/EC), species that are a Special Conservation Interest (SCI) of a SPA designated under the EU Habitats Directive (92/43/EEC) Natura 2000 network within 15km of the proposed development site, species listed on the Red List of Birds of Conservation Concern in Ireland (Gilbert *et al.*, 2021), and raptor species sensitive to wind farm developments.

### 3.2 Field Surveys

This section of the report describes the various field survey methods employed. Field surveys were undertaken from October 2021 to March 2022 inclusive. The data provided in this report is robust and in line with industry best practises, including the NatureScot (formerly Scottish Natural Heritage) guidance “Recommended bird survey methods to inform impact assessment of onshore windfarms” (SNH, 2017). Field survey methodologies have been devised to survey for the bird species composition and assemblages that occur within the study area.

#### 3.2.1 Vantage Point Surveys

Vantage point (VP) surveys were undertaken in accordance with SNH (2017) from four vantage point locations from October 2021 to March 2022.

Data on bird observations and flight activity was collected from a scanning arc of 180° and a 2km radius by an observer at each fixed location for six hours per month. Surveys were scheduled to provide a spread over the full daylight period including at dawn and dusk to coincide with the highest peaks of bird activity.

Details on vantage point watch survey effort and results are presented in Appendix 1 of this report. This appendix includes full details of dates, times, survey locations, survey duration and weather conditions for each survey, as well as bird records. Appendix 2, Figure 1.0 shows the locations of vantage points and technical data is provided in Appendix 1. Figure 1.1 to Figure 1.8 show maps of bird observations.

Flight activity was assigned to distinct height bands. The flight bands were chosen with reference to the dimensions of likely turbine models for the site and the resulting potential collision height. Bands are split into 0-15m, 15-25m, 25m-175m and 175m+. Taking a precautionary approach, flights recorded within the 25-175m height band were considered to be at PCH.

### 3.2.1.1 Viewshed Analysis

Viewshed analysis was carried out to confirm the sufficiency of the chosen vantage point location (VP1, VP2, VP3 and VP4) prior to the commencement of initial surveys in 2018. The viewshed analysis aims to establish whether the selected VP offers adequate coverage of the turbine layout proposed at the time of surveying. A 500m buffer was applied to the likely maximum viable area of the site for the wind energy development in line with SNH (2017) recommendations to conduct surveys to 500m from the outermost turbines. Viewsheds were calculated using Resoft Wind Farm ZTV (Zone of Theoretical Visibility) software in combination with QGIS (Version 3.22), using a notional and precautionary layer suspended at 25m, which represents the lowest swept height of the turbine blades. 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.

The viewshed analysis involved testing each VP location for its visibility coverage by creating a view shed point 1.5m in height (to represent the height of the observer) on a map using 10 metre contours terrain data. The relative height of forestry and its effects on visibility is also accounted for in the analysis. Using the ZTV software, a viewshed of 360 degrees was produced calculating an area 25m from ground level up to a two-kilometre radius. The resulting viewshed image was then cropped to 180 degrees to give the viewshed from each VP location in line with SNH (2017).

Survey effort, including details of survey duration and weather condition and results are presented in Appendix 1. Figure 1.0 in Appendix 2 shows the survey area, while bird observations are shown in Figure 1.1 to Figure 1.8.

### 3.2.2 Red Grouse Surveys

Red Grouse surveys were undertaken in March 2022. The methodology used was derived from that described in Bibby et al. (2000) and the survey methods for the most recent national Red Grouse survey (2006/2007 to 2007/2008) coordinated by BirdWatch Ireland and submitted to the NPWS (Murray et al., 2013). The survey targeted areas of suitable habitat (i.e., open moorland and areas of heather) within 500m of the wind farm site. Areas of forestry/agricultural grassland/etc. were not surveyed as they do not have potential to support red grouse populations. The survey consisted of tape luring transects. Survey effort undertaken for transect surveys is presented in Appendix 1, including details of survey duration and weather conditions and results. Figure 4.0 in Appendix 2 shows survey area and transects, while bird observations are shown in Figure 4.1.

The work was carried out under NPWS Licence Number 38/2021.

### 3.2.3 Winter Walkover Surveys

Winter Walkover Surveys were undertaken to determine the presence of bird species of high conservation concern within areas of potentially suitable habitat in the study area. The survey area extended to a 500m radius of the site boundary (where access allowed).

Transect routes were devised to ensure coverage of different habitat complexes between vantage point locations within the study area, during the winter months. The methodology was broadly based on methods described in Bibby et al. (2000) and Brown and Shepherd (1993). Target species were raptors, waterbirds, gulls, and ground birds of conservation interest. Along with target species, all additional species observed were recorded to inform the evaluation of supporting habitat.

The survey effort, including details of survey duration and weather conditions, is presented in Appendix 1. Figure 2.0 in Appendix 2 shows the surveyed area and transects.

### 3.2.4 Hen Harrier Roost Surveys

Potential hen harrier roost sites within 2km of the proposed development area (as per SNH 2017) were surveyed for the presence of hen harrier during the winter season. Survey work was undertaken in

accordance with the methodology devised by Gilbert et al. (1998) and the 'Irish Hen Harrier Winter Roost Survey' (unpublished document coordinated by members of NPWS). Surveys were carried out throughout the entirety of the non-breeding seasons (October 2021 to March 2022). Surveys were conducted from four locations each month (HHVP1, HHVP2, HHVP3 and HHVP4) which overlooked the most suitable hen harrier roosting habitat. Appendix 2, Figure 3.0 shows the locations of hen harrier roost surveys and full technical data is provided in Appendix 1.

### 3.3 **Project Team**

This report has been prepared by Andrew O'Donoghue (B.Sc.) Project Ornithologist with MKO. The field surveys were undertaken in the 2021/2022 winter season by Robert Vaughan, Lee Dark, Kate Bismilla and Andrew O'Donoghue, all of whom are competent bird surveyors.

### 3.4 **Survey Limitations**

A comprehensive suite of bird surveys was undertaken at the site between October 2021 and March 2022, as detailed in this report. Results from the 2021/2022 winter season are derived from a continuous six months of surveying undertaken in accordance with best practice guidance (SNH, 2017). The survey duration and scope are considered entirely satisfactory.

## 4. RESULTS

### 4.1.1 Method of Identification of Target Species

Following a comprehensive desk study by MKO prior to surveys in 2018, initial site visit and consultation, a list of “Target species” likely to occur at the site was compiled. The survey work carried out at the wind farm site was specifically designed to survey for these identified target species in accordance with SNH guidance (2017). The target species list was drawn from:

- > Annex I of the EU Birds Directive
- > Red listed birds on the BoCCI
- > SCIs of SPAs within the zone of likely significant effects
- > Raptor species sensitive to wind farm developments.

## 4.2 Field survey results

### 4.2.1 Introduction

The following bird species were recorded during the 2021/2022 winter season and observations are described in detail in subsequent sections below. The list is ordered in accordance with conservation significance: Annex I species, SCIs of SPAs, Red listed species, and raptors:

- > Hen harrier (Annex I)
- > Golden plover (Annex I)
- > Whooper swan (Annex I)
- > Red grouse (BoCCI Red list)
- > Woodcock (BoCCI Red list)
- > Snipe (BoCCI Red list)
- > Kestrel (BoCCI Red list)
- > Redwing (BoCCI Red list)
- > Meadow pipit (BoCCI Red list)
- > Grey wagtail (BoCCI Red list)
- > Long eared owl (Raptor)
- > Buzzard (Raptor)
- > Sparrowhawk (Raptor)

The following sections describe the observations of each target species under the individual survey headings. Raw data and maps are provided in Appendix 1 and Appendix 2, respectively.

## 4.2.2 Vantage Point Survey Results

Vantage point surveys were undertaken at the site between October 2021 and March 2022 inclusive. Summary results from vantage point surveys are presented below in Table 4-1 and discussed in further detail in Section 5 of this report.

Table 4-1 Vantage Point Survey Results

Species	Total number of observations recorded during this survey type	Total Number of Bird Seconds at PCH	Number of observations on site/within 500m	Activity of note	Figure <sup>1</sup>
Hen harrier	11	355	10	On the 30 <sup>th</sup> of March a male and female were observed displaying to south of the site near the previously used nest sites. All other observations involved single birds hunting, foraging, and flying over. One observation was from both October and February, with nine from March.	Appendix 2, Figure 1.1
Golden plover	12	797	8	All observations involved flocks of up to 100 birds in flight on and around Dough Mountain or unseen birds calling in the same area. Average flock size was of 39 birds.	Appendix 2, Figure 1.2
Whooper swan	1	50	1	On the 22 <sup>nd</sup> of October a flock of eight migrating birds flew over the southern section of the site.	Appendix 2, Figure 1.3
Woodcock	3	0	0	All observations involved single birds in flight off site.	Appendix 2, Figure 1.4
Kestrel	7	810	5	All observations involved single adult or immature birds in flight, hunting, or hovering.	Appendix 2, Figure 1.5
Snipe	9	50	8	All observations involved one or two birds in flight or calling. Observed across the site.	Appendix 2, Figure 1.6
Sparrowhawk	13	96	8	All observations involved single adult or immature birds hunting, foraging, or flying over. Observations were made across the site.	Appendix 2, Figure 1.7
Buzzard	24	3970	19	In December a pair were observed displaying over the southern section of the site. The remaining observations involved either one or two birds circling, flying over and calling across the survey area.	Appendix 2, Figure 1.8



Species	Total number of observations recorded during this survey type	Total Number of Bird Seconds at PCH	Number of observations on site/within 500m	Activity of note	Figure'
Redwing	7	-	7	Flocks of up to 50 birds across the site and within 500m of site.	-
Meadow pipit	16	-	16	Flocks of up to 17 birds across the site and within 500m of site.	-
Grey wagtail	1	-	1	Single bird in flight on south of site in February.	-

### 4.2.3 Red Grouse Survey Results

Red grouse surveys were carried out in March 2022. Summary results from these surveys are presented below in Table 4-2 and discussed in more detail in Section 5 of this report.

*Table 4-2 Red Grouse Survey Results*

Species	Total number of observations recorded during survey type	Number of observations on site/ within 500m	Activity of note	Breeding Status	Figure
Red Grouse	2	2	Single displaying males recorded at both Killea and Saddle Hill.		Appendix 2, Figure 4.1

## 4.2.4 Winter Walkover Survey Results

Winter walkover surveys were carried out during the 2021/2022 winter season: October to March. Summary results from these surveys are presented below in Table 4-3 and discussed in more detail in Section 5 of this report.

Table 4-3 Winter Walkover Survey Results

Species	Total number of observations recorded during survey type	Number of observations on site/ within 500m	Activity of note	Figure
Whooper swan	1	1	On the 28 <sup>th</sup> of October a flock of 30 migrating birds were recorded flying over the northern section of site.	Appendix 2, Figure 2.1
Red grouse	6	6	Birds observed flushed or calling at Killea and Saddle hill. Max. flock size two birds.	Appendix 2, Figure 2.2
Woodcock	1	1	One bird observed flushed on site west of Killea.	Appendix 2, Figure 2.3
Kestrel	1	1	Single bird observed in flight on site.	Appendix 2, Figure 2.4
Snipe	6	5	All observations involved one or two birds flushed or in flight.	Appendix 2, Figure 2.5
Sparrowhawk	2	2	Both observations involved adult birds hunting on site or within 500m of site.	Appendix 2, Figure 2.6
Buzzard	3	3	On the 27 <sup>th</sup> of March a pair were observed in Courtship over Boleyboy on site. Single birds were also observed in flight.	Appendix 2, Figure 2.7
Redwing	11	11	Flocks of up to 75 birds on site and within 500m of site.	-
Meadow pipit	21	21	Flocks of up 38 birds on site and within 500m of site.	-

## 4.2.5 Hen Harrier Roost Survey Results

Hen harrier roost surveys were carried out during the 2021/2022 winter season: October to March. Summary results from these surveys are presented below in Table 4-4 and discussed in more detail in Section 5 of this report.

*Table 4-4 Hen Harrier Roost Survey Results*

Species	Total number of observations recorded during survey type	Number of observations on site/ within 500m	Activity of note	Roosting Status	Figure
Hen Harrier	1	1	One observation of an adult male in flight north of the southern section of site in March.	No roosts identified.	Appendix 2, Figure 3.1

## 4.2.6 Incidentals

Several incidental observations of target species were recorded during the survey period. The most significant of these observations are detailed in Table 4-5 below and discussed in further detail in Section 5 of this report.

Table 4-5 Incidental Observations

Species	Survey Type(s)	No. of Observations	Activity of note	Figure
Hen harrier	VP and Winter Walkover Surveys.	7	On the 29 <sup>th</sup> of March a pair were observed displaying on the southern section of the site, near previously used nest sites. All other observations involved single birds in flight, foraging and hunting.	Appendix 2, Figure 5.0
Red grouse	VP Surveys.	1	Single male observed on the ground at Killea within 500m of site.	Appendix 2, Figure 5.1
Woodcock	VP and HHVP Surveys.	20	One observation of three birds flushed on site, two birds also flushed on one occasion. Remaining observations involved single birds in flight or flushed on site or within 2km of the site.	Appendix 2, Figure 5.2
Snipe	VP and HHVP Surveys.	8	A flock of five birds was flushed near Killea. Other observations involved birds flushed and in flight on site and within 2km of the site.	Appendix 2, Figure 5.3
Long-eared owl	HHVP Surveys.	2	In March a single bird was twice observed hunting near Raheelin approx. 1km off site.	Appendix 2, Figure 5.4
Sparrowhawk	HHVP Surveys.	4	All were of single male, female and juvenile birds hunting or flying over.	Appendix 2, Figure 5.5
Buzzard	HHVP and Winter Walkover Surveys.	4	One observation of two birds in flight on site in the northern section. Other observations were of single birds in flight across the site.	Appendix 2, Figure 5.6
Redwing	HHVP Surveys	5	Flocks of up to 100 birds recorded across the site and survey area.	-
Meadow pipit	VP and HHVP Surveys	3	Flocks of up to 3 birds recorded across the site and survey area.	-
Grey Wagtail	HHVP Surveys	1	A single bird was recorded off site in October.	-

## 5. DISCUSSION

The following section provides a synopsis of the findings of the surveys undertaken during the 2021/22 winter season (October 2021 to March 2022) for each of the target species recorded.

### 5.1 Hen Harrier

This species was recorded nineteen times during the survey period. Adult male and female birds were recorded, in flight, foraging, hunting, and displaying on one occasion. Hen harrier were recorded early and late in the winter season, with the majority of observations in late March and no records in the core winter period (November-January). This suggests these observations are of late and early breeding birds rather than a wintering population. No roosting hen harrier were recorded.

In late March a pair were observed displaying in the vicinity of the 2019,2020 and 2021 nest on the southern section of the site. This indicates probable breeding in this area. Breeding season surveys will aim to establish if further breeding activity occurs.

### 5.2 Golden Plover

This species was recorded on twelve occasions during the survey period. All observations were in the Dough Mountain area off site or within 500m of the site. In November a peak flock size of 100 birds was recorded in flight. Remaining observations involved flocks in flight or calling.

### 5.3 Whooper swan

There were two observations of this species. In October two migrating flocks of eight and thirty birds were recorded in flight over site, the flock of eight at PCH. As these were migrating flights the birds were likely travelling beyond the survey area given lack of suitable habitat on site.

### 5.4 Red Grouse

Red grouse were recorded on eight occasions during surveys. A resident population exists on the boundary of the site at Saddle Hill and Killea/Dough Mountain. A single displaying male was recorded at each of these locations during species specific red grouse surveys. Single birds or pairs were also encountered calling and in flight on site and within 500m of site in these areas during other survey types.

### 5.5 Woodcock

Woodcock were recorded on 24 occasions during surveys. Birds were recorded across the site. The majority of observations involved single birds flushed or in flight at dawn and dusk. A peak flock size of three birds was recorded in December.

### 5.6 Snipe

Snipe were recorded on 23 occasions during surveys. The majority of observations involved single birds flushed or in flight with a peak flock size of five birds recorded in October. Birds were recorded across the site.

## 5.7 Kestrel

Kestrel were recorded eight times during surveys. Birds were recorded in flight foraging hunting and hovering. Adults and juvenile birds were recorded across the site.

## 5.8 Buzzard

Buzzard were recorded 31 times during the survey period. A pair were observed displaying near Boleyboy in December and March. Other observations involved one or two birds in flight, foraging or soaring. Observed across the site.

## 5.9 Sparrowhawk

There were nineteen observations of sparrowhawk during the survey period. Observations involved male female and juvenile birds in flight or hunting on site or within 500m of site. Birds were recorded across the site.

## 5.10 Red-listed passerines

Redwing were recorded regularly on site with a peak flock size of 100 birds. Meadow pipit were also regularly recorded in open habitats on site, with a peak flock size of 38 birds. Grey wagtail was recorded on two occasions off site.

## 6. CONCLUSION

Key impacts resulting from the proposed development for local avian receptors could include habitat loss, disturbance, displacement, and collision risk.

There is a resident population of hen harrier, red grouse, golden plover, woodcock, snipe, kestrel, buzzard, and sparrowhawk on or within 500m of the wind farm site. The proposed development could result in habitat loss and disturbance/displacement impacts on these species. These potential impacts should be considered in greater detail at the assessment stage. Given the number of birds recorded and the frequency of observations, it is likely that these impacts will not be significant. However, a full two-years of survey data will be required to provide a robust assessment of these impacts.

Collision risk should be a key consideration at the assessment stage for hen harrier and buzzard. However, until the collision risk analysis is undertaken this impact cannot be considered in any detail. All findings should be considered in the context of two full years of surveys (i.e., two breeding seasons and two non-breeding seasons), as two years of flight activity data is required to inform a robust collision risk analysis.

Whooper swan were recorded infrequently flying over the wind farm site. To date, no significant impacts are anticipated for these species. Redwing and meadow pipit were regularly recorded on site; however, no significant impact is anticipated for these species.

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# APPENDIX 1

## BIRD SURVEY DATA

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Appendix 1 Table 1 Survey Effort

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
10/10/2021	Vantage Point Survey	VP3	3:00 starting at 06:50	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: 2% >500m; Rain: none; Frost: none; Snow: none		RV
10/10/2021	Vantage Point Survey	VP3	3:00 starting at 06:50	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: 2% >500m; Rain: none; Frost: none; Snow: none		RV
10/10/2021	Vantage Point Survey	VP3	3:00 starting at 10:20	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: 2% >500m; Rain: none; Frost: none; Snow: none		RV
10/10/2021	Vantage Point Survey	VP3	3:00 starting at 10:20	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: 2% >500m; Rain: none; Frost: none; Snow: none		RV
10/10/2021	Hen Harrier Roost Survey	HHR2	1:30 starting at 17:45	Visibility: good; Wind speed and direction: light air W-NW; Cloud cover and height: 2% >500m; Rain: none; Frost: none; Snow: none		RV
15/10/2021	Vantage Point Survey	VP4	3:00 starting at 07:00	Visibility: good; Wind speed and direction: light breeze E-NE; Cloud cover and height: 2% >500m; Rain: none; Frost: none; Snow: none		RV
15/10/2021	Vantage Point Survey	VP4	3:00 starting at 10:30	Visibility: good; Wind speed and direction: light breeze E-NE; Cloud cover and height: 2% >500m; Rain: none; Frost: none; Snow: none		RV
15/10/2021	Hen Harrier Roost Survey	HHR3	2:00 starting at 17:30	Visibility: good; Wind speed and direction: light air SE; Cloud cover and height: 2% >500m; Rain: none; Frost: none; Snow: none		RV
17/10/2021	Breeding Walkover Survey	Transect 1	2:08 starting at 11:10	Visibility: good; Wind speed and direction: gentle breeze S-SW; Cloud cover and height: 3% 150-500m; Rain: drizzle; Frost: none; Snow: none		RV
17/10/2021	Breeding Walkover Survey	Transect 2	1:43 starting at 13:45	Visibility: moderate; Wind speed and direction: gentle breeze S; Cloud cover and height: 3% 150-500m; Rain: drizzle; Frost: none; Snow: none		RV
17/10/2021	Breeding Walkover Survey	Transect 3	1:01 starting at 15:56	Visibility: moderate; Wind speed and direction: gentle breeze S; Cloud cover and height: 3% 150-500m; Rain: drizzle; Frost: none; Snow: none		RV



17/10/2021	Hen Harrier Roost Survey	HHR6	1:35 starting at 17:35	Visibility: poor; Wind speed and direction: gentle breeze S; Cloud cover and height: 3% <150m; Rain: drizzle; Frost: none; Snow: none	RV
20/10/2021	Vantage Point Survey	VP2	3:00 starting at 07:10	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none	KB
20/10/2021	Vantage Point Survey	VP2	3:00 starting at 10:40	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none	KB
22/10/2021	Vantage Point Survey	VP1	3:00 starting at 07:12	Visibility: good; Wind speed and direction: fresh breeze NW; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none	KB
22/10/2021	Vantage Point Survey	VP1	3:00 starting at 10:42	Visibility: moderate; Wind speed and direction: fresh breeze NW; Cloud cover and height: 66-100% <150m; Rain: light showers; Frost: none; Snow: none	KB
28/10/2021	Breeding Walkover Survey	Transect 4	2:06 starting at 09:00	Visibility: good; Wind speed and direction: gentle breeze S-SW; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none	RV
28/10/2021	Breeding Walkover Survey	Transect 5	1:31 starting at 13:08	Visibility: good; Wind speed and direction: moderate breeze S-SW; Cloud cover and height: 3% 150-500m; Rain: drizzle; Frost: none; Snow: none	RV
28/10/2021	Hen Harrier Roost Survey	HHR4	1:50 starting at 17:00	Visibility: good; Wind speed and direction: light air S-SW; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none	RV
07/11/2021	Vantage Point Survey	VP1	3:00 starting at 10:52	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none	LD
07/11/2021	Vantage Point Survey	VP1	2:00 starting at 14:22	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none	LD



07/11/2021	Vantage Point Survey	VP1	1:00 starting at 16:22	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		LD
10/11/2021	Hen Harrier Roost Survey	HHR6	2:00 starting at 07:00	Visibility: good; Wind speed and direction: light breeze S; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none		RV
10/11/2021	Breeding Walkover Survey	Transect 3	1:07 starting at 09:27	Visibility: good; Wind speed and direction: light breeze S; Cloud cover and height: 3% >500m; Rain: none; Frost: none; Snow: none		RV
10/11/2021	Vantage Point Survey	VP2	6:30 starting at 11:10	Visibility: good; Wind speed and direction: gentle breeze S-SW; Cloud cover and height: 2% >500m; Rain: none; Frost: none; Snow: none		RV
19/11/2021	Hen Harrier Roost Survey	HHR4	1:50 starting at 07:10	Visibility: moderate; Wind speed and direction: gentle breeze SW; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none		RV
19/11/2021	Breeding Walkover Survey	Transect 4	2:20 starting at 09:16	Visibility: good; Wind speed and direction: moderate breeze SW; Cloud cover and height: 3% 150-500m; Rain: drizzle; Frost: none; Snow: none		RV
23/11/2021	Hen Harrier Roost Survey	HHR2	2:00 starting at 07:15	Visibility: good; Wind speed and direction: light breeze W-SW; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none		RV
23/11/2021	Vantage Point Survey	VP3	6:30 starting at 10:50	Visibility: good; Wind speed and direction: gentle breeze W-SW; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none		RV
24/11/2021	Hen Harrier Roost Survey	HHR3	2:00 starting at 07:25	Visibility: good; Wind speed and direction: light air N; Cloud cover and height: 2% 150-500m; Rain: none; Frost: none; Snow: none		RV
24/11/2021	Vantage Point Survey	VP4	6:30 starting at 10:50	Visibility: good; Wind speed and direction: gentle breeze N; Cloud cover and height: 2% 150-500m; Rain: light showers; Frost: none; Snow: none		RV
25/11/2021	Breeding Walkover Survey	Transect 1	1:59 starting at 09:04	Visibility: good; Wind speed and direction: gentle breeze NW; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none		RV



25/11/2021	Breeding Walkover Survey	Transect 2	1:32 starting at 11:35	Visibility: good; Wind speed and direction: gentle breeze NW; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none		RV
25/11/2021	Breeding Walkover Survey	Transect 5	1:23 starting at 14:36	Visibility: good; Wind speed and direction: moderate breeze NW; Cloud cover and height: 3% 150-500m; Rain: drizzle; Frost: none; Snow: none		RV
14/12/2021	Vantage Point Survey	VP3	6:30 starting at 07:50	Visibility: good; Wind speed and direction: light breeze S; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none		RV
14/12/2021	Hen Harrier Roost Survey	HHR4	2:00 starting at 15:05	Visibility: good; Wind speed and direction: light air S-SW; Cloud cover and height: 1% >500m; Rain: none; Frost: none; Snow: none	No HH observations	RV
16/12/2021	Vantage Point Survey	VP1	6:30 starting at 07:50	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none		RV
16/12/2021	Hen Harrier Roost Survey	HHR1	2:00 starting at 15:05	Visibility: good; Wind speed and direction: light breeze S; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none	No HH observations	RV
20/12/2021	Vantage Point Survey	VP2	6:30 starting at 07:50	Visibility: moderate; Wind speed and direction: gentle breeze E; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none		RV
20/12/2021	Hen Harrier Roost Survey	HHR2	2:05 starting at 15:00	Visibility: good; Wind speed and direction: light breeze E-SE; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none	No HH observations	RV
31/12/2021	Vantage Point Survey	VP4	6:30 starting at 07:55	Visibility: good; Wind speed and direction: moderate breeze SW; Cloud cover and height: 3% >500m; Rain: none; Frost: none; Snow: none		RV
31/12/2021	Hen Harrier Roost Survey	HHR3	2:00 starting at 15:15	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none	No HH observations	RV
11/01/2022	Vantage Point Survey	VP1	3:00 starting at 11:00	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 1% >500m; Rain: none; Frost: none; Snow: none		RV



11/01/2022	Vantage Point Survey	VP1	3:00 starting at 14:30	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 1% >500m; Rain: none; Frost: none; Snow: none		RV
12/01/2022	Vantage Point Survey	VP2	3:00 starting at 11:00	Visibility: moderate; Wind speed and direction: moderate breeze SW; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none	Low cloud just above VP, clear below	RV
12/01/2022	Vantage Point Survey	VP2	3:00 starting at 14:30	Visibility: moderate; Wind speed and direction: moderate breeze SW; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none	Low cloud just above VP, clear below	RV
13/01/2022	Vantage Point Survey	VP3	3:00 starting at 11:05	Visibility: moderate; Wind speed and direction: moderate breeze S-SW; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none	Low cloud through out, at times descended below VP	RV
13/01/2022	Vantage Point Survey	VP3	3:00 starting at 14:35	Visibility: moderate; Wind speed and direction: moderate breeze S-SW; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none	Low cloud through out, at times descended below VP	RV
20/01/2022	Vantage Point Survey	VP4	3:00 starting at 11:15	Visibility: good; Wind speed and direction: light breeze NW; Cloud cover and height: 3% >500m; Rain: none; Frost: none; Snow: none		RV
20/01/2022	Vantage Point Survey	VP4	3:00 starting at 14:45	Visibility: good; Wind speed and direction: light breeze NW; Cloud cover and height: 3% >500m; Rain: none; Frost: none; Snow: none		RV
08/02/2022	Vantage Point Survey	VP3	3:00 starting at 07:10	Visibility: good; Wind speed and direction: gentle breeze W-SW; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none	Male harrier seen, flushed a snipe.	RV
08/02/2022	Vantage Point Survey	VP3	3:00 starting at 10:40	Visibility: good; Wind speed and direction: gentle breeze W-SW; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none	Male harrier seen, flushed a snipe.	RV
08/02/2022	Hen Harrier Roost Survey	HHR1	2:00 starting at 16:25	Visibility: good; Wind speed and direction: gentle breeze W-SW; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none		RV
10/02/2022	Vantage Point Survey	VP4	3:00 starting at 07:20	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 1% >500m; Rain: light showers; Frost: none; Snow: none	Snow and frost on arrival, cleared quickl	RV



10/02/2022	Vantage Point Survey	VP4	3:00 starting at 10:50	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 1% >500m; Rain: light showers; Frost: none; Snow: none	Snow and frost on arrival, cleared quickl	RV
10/02/2022	Hen Harrier Roost Survey	HHR3	2:00 starting at 16:30	Visibility: good; Wind speed and direction: light breeze NW; Cloud cover and height: 2% >500m; Rain: drizzle; Frost: none; Snow: none	Male harrier circling and dropping into cover just before start of Survey	RV
15/02/2022	Vantage Point Survey	VP2	3:00 starting at 07:00	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 3% 150-500m; Rain: light showers; Frost: none; Snow: none	Very changeable weather	RV
15/02/2022	Vantage Point Survey	VP2	3:00 starting at 10:30	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 3% 150-500m; Rain: light showers; Frost: none; Snow: none	Very changeable weather	RV
15/02/2022	Hen Harrier Roost Survey	HHR2	2:00 starting at 16:40	Visibility: moderate; Wind speed and direction: gentle breeze S; Cloud cover and height: 3% 150-500m; Rain: light showers; Frost: none; Snow: none	Light persistent rain	RV
25/02/2022	Vantage Point Survey	VP1	3:00 starting at 06:31	Visibility: good; Wind speed and direction: light air SW; Cloud cover and height: 66-100% <150m; Rain: none; Frost: heavy; Snow: falling		LD
25/02/2022	Vantage Point Survey	VP1	1:00 starting at 10:01	Visibility: good; Wind speed and direction: light breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: heavy; Snow: on ground		LD
25/02/2022	Vantage Point Survey	VP1	1:00 starting at 11:01	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: heavy; Snow: on ground		LD
25/02/2022	Vantage Point Survey	VP1	1:00 starting at 12:01	Visibility: good; Wind speed and direction: moderate breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: heavy; Snow: on ground		LD
26/02/2022	Hen Harrier Roost Survey	HHR4	2:00 starting at 17:00	Visibility: none; Wind speed and direction: moderate breeze S; Cloud cover and height: 3% >500m; Rain: none; Frost: none; Snow: none	Male sparrowhawk, 3 woodcock	RV
08/03/2022	Hen Harrier Roost Survey	HHR1	2:00 starting at 06:05	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 3% >500m; Rain: none; Frost: none; Snow: none	Male harrier seen at 07:40	RV



08/03/2022	Vantage Point Survey	VP2	3:00 starting at 12:50	Visibility: good; Wind speed and direction: fresh breeze S; Cloud cover and height: 3% 150-500m; Rain: heavy showers; Frost: none; Snow: none	Male harrier seen once, 1 sn flushed	RV
08/03/2022	Vantage Point Survey	VP2	3:00 starting at 16:20	Visibility: good; Wind speed and direction: fresh breeze S; Cloud cover and height: 3% 150-500m; Rain: heavy showers; Frost: none; Snow: none	Male harrier seen once, 1 sn flushed	RV
14/03/2022	Hen Harrier Roost Survey	HHR3	2:00 starting at 05:50	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 3% 150-500m; Rain: light showers; Frost: none; Snow: none		RV
14/03/2022	Vantage Point Survey	VP1	3:00 starting at 13:05	Visibility: good; Wind speed and direction: gentle breeze W-SW; Cloud cover and height: 1% >500m; Rain: none; Frost: none; Snow: none	Male harrier seen twice, 20 GP, several Buzzards.	RV
14/03/2022	Vantage Point Survey	VP1	3:00 starting at 16:35	Visibility: good; Wind speed and direction: gentle breeze W-SW; Cloud cover and height: 1% >500m; Rain: none; Frost: none; Snow: none	Male harrier seen twice, 20 GP, several Buzzards.	RV
15/03/2022	Hen Harrier Roost Survey	HHR2	2:00 starting at 05:50	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 3% 150-500m; Rain: none; Frost: none; Snow: none	Dipper singing, 2 woodcock	RV
15/03/2022	Breeding Walkover Survey	Transect 1	1:02 starting at 11:17	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 3% 150-500m; Rain: drizzle; Frost: none; Snow: none	SH flushed along road	RV
15/03/2022	Vantage Point Survey	VP3	3:00 starting at 13:05	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 3% 150-500m; Rain: light showers; Frost: none; Snow: none	Very changeable weather	RV
15/03/2022	Vantage Point Survey	VP3	3:00 starting at 16:35	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 3% 150-500m; Rain: light showers; Frost: none; Snow: none	Very changeable weather	RV
27/03/2022	Hen Harrier Roost Survey	HHR4	2:00 starting at 06:20	Visibility: good; Wind speed and direction: calm E; Cloud cover and height: 1% >500m; Rain: none; Frost: none; Snow: none	Long-eared owl seen twice	RV
27/03/2022	Breeding Walkover Survey	Transect 2	1:27 starting at 08:48	Visibility: good; Wind speed and direction: light air E; Cloud cover and height: 1% >500m; Rain: none; Frost: none; Snow: none	2 BZ displaying and RG pair flushed	RV



27/03/2022	Breeding Walkover Survey	Transect 3	1:40 starting at 10:44	Visibility: good; Wind speed and direction: light breeze E; Cloud cover and height: 1% >500m; Rain: none; Frost: none; Snow: none	1 SN flushed	RV
29/03/2022	Breeding Walkover Survey	Transect 4	1:52 starting at 13:28	Visibility: good; Wind speed and direction: light breeze E-NE; Cloud cover and height: 1% >500m; Rain: none; Frost: none; Snow: none	Male K seen	RV
30/03/2022	Breeding Walkover Survey	Transect 5	2:18 starting at 09:01	Visibility: good; Wind speed and direction: gentle breeze NE; Cloud cover and height: 3% >500m; Rain: none; Frost: none; Snow: none	BZ heard but not seen	RV
30/03/2022	Vantage Point Survey	VP4	3:00 starting at 14:35	Visibility: good; Wind speed and direction: gentle breeze NE; Cloud cover and height: 2% >500m; Rain: none; Frost: none; Snow: none	Male and female harrier seen	RV
30/03/2022	Vantage Point Survey	VP4	3:00 starting at 18:05	Visibility: good; Wind speed and direction: gentle breeze NE; Cloud cover and height: 2% >500m; Rain: none; Frost: none; Snow: none	Male and female harrier seen	RV
31/03/2022	Breeding Red Grouse Survey	500m Radius	6:00 starting at 11:30	Visibility: good; Wind speed and direction: moderate breeze NW; Cloud cover and height: 66-100% >500m; Rain: light showers; Frost: none; Snow: none		AOD



Appendix 1 Table 2 Vantage Point Flight Observations

Report Ref.	Ref.	VP	Date	Time	Species	Number	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	PCH (25-175m)	Band 4 (>175m)	Habitat and activity	Surveyor
	Not Mapped	VP3	10/10/2021	06:50	Meadow Pipit	13	-	-	-	-	-	upland blanket bog; flying, 13 mostly flyovers	RV
HH001	2021-11-30T11:51:12.600	VP3	10/10/2021	08:34	Hen Harrier	1	37	37	0	0	0	raised bog, conifer plantation and scrub; flying, meandering across site	RV
K001	2021-11-30T11:53:57.018	VP3	10/10/2021	12:17	Kestrel	1	276	16	125	140	0	upland blanket bog; hunting, hovering and hunting, landed 3 times	RV
K002	2021-11-30T11:56:06.280	VP3	10/10/2021	12:41	Kestrel	1	546	45	30	471	0	upland blanket bog; hunting, hunting, dropped low a few times, consistent around 30 metres height.	RV
	Not Mapped	VP4	15/10/2021	07:00	Redwing	30	-	-	-	-	-	conifer plantation; flying, 30, 3 singles and flock of 27	RV
	2021-11-30T12:09:30.222	VP4	15/10/2021	07:00	Meadow Pipit	17	-	-	-	-	-	conifer plantation; flying, 17, lots of flyovers, highest count	RV
WK001	2021-11-30T12:01:18.439	VP4	15/10/2021	07:11	Woodcock	1	5	5	0	0	0	scrub; flying, flew low, probable, seen through vegetation in low light	RV
SH001	2021-11-30T12:02:52.490	VP4	15/10/2021	08:21	Sparrowhawk	1	10	0	10	0	0	scrub; flying, flew low past vp	RV
BZ001	2021-11-30T12:12:40.823	VP4	15/10/2021	09:46	Buzzard	1	360	0	0	350	0	improved agricultural grassland and conifer plantation; circling,	RV



												circling behind turbines	
BZ002	2021-11-30T12:14:48.515	VP4	15/10/2021	12:36	Buzzard	1	225	0	0	225	0	conifer plantation and improved agricultural grassland; circling	RV
BZ003	2021-11-30T12:16:48.525	VP4	15/10/2021	13:11	Buzzard	1	1140	0	0	800	340	conifer plantation and improved agricultural grassland; circling, circling with 2 ravens	RV
	MP002	VP2	20/10/2021	08:43	Meadow Pipit	5	-	-	-	-	-	bogs; foraging	KB
GP001	GP002	VP2	20/10/2021	09:02	Golden Plover	8	10	10	0	0	0	bogs; flying over	KB
GP002	GP003	VP2	20/10/2021	09:14	Golden Plover	1	8	8	0	0	0	bogs; flying over	KB
	MP003	VP2	20/10/2021	10:02	Meadow Pipit	1	-	-	-	-	-	bogs; foraging	KB
	GP001	VP2	20/10/2021	10:02	Golden Plover	1	-	-	-	-	-	bogs; calling heard on ground	KB
BZ004	BZ001	VP2	20/10/2021	10:11	Buzzard	1	-	-	-	-	-	bogs; calling heard	KB
SN001	SN001	VP1	22/10/2021	07:34	Snipe	1	20	0	0	20	0	bogs; travelling	KB
SN002	SN002	VP1	22/10/2021	07:40	Snipe	1	12	0	12	0	0	bogs; travelling	KB
	MP001	VP1	22/10/2021	08:02	Meadow Pipit	7	-	-	-	-	-	bogs; foraging	KB
	RE001	VP1	22/10/2021	08:16	Redwing	2	-	-	-	-	-	bogs and conifer plantation; flying over	KB
SN003	SN003	VP1	22/10/2021	08:57	Snipe	2	30	0	0	30	0	bogs and conifer plantation; travelling	KB
WS001	WS001	VP1	22/10/2021	09:29	Whooper Swan	8	50	0	0	50	0	bogs and conifer plantation; travelling	KB
GP004	GP001	VP1	22/10/2021	10:58	Golden Plover	5	8	8	0	0	0	bogs; flying over	KB
	2022-12-23T16:56:49.071	VP2	10/11/2021	11:10	Redwing	16	-	-	-	-	-	improved agricultural grassland; flying, with ff	RV
SH002	SH001	VP2	10/11/2021	11:35	Sparrowhawk	1	13	5	8	0	0	conifer plantation; flying	RV



BZ005	BZ001	VP2	10/11/2021	11:51	Buzzard	1	285	0	190	95	0	improved agricultural grassland, conifer plantation and scrub; circling/ hunting, circling along edge of plantation	RV
BZ006	BZ002	VP2	10/11/2021	12:21	Buzzard	1	105	0	35	70	0	improved agricultural grassland; circling, circled up over far hill then glided north out of view	RV
K003	K001	VP2	10/11/2021	15:12	Kestrel	1	14	0	14	0	0	upland blanket bog; flying, male, flew toward me but doubled back, landed briefly on top of pine.	RV
GP005	GP001	VP2	10/11/2021	15:13	Golden Plover	100	34	0	0	34	0	upland blanket bog; flying, circled over hill behind vp just after k. flew that way, i walked up to see where k had gone, gp flew north.	RV
K004	K002	VP2	10/11/2021	15:32	Kestrel	1	184	5	12	167	0	improved agricultural grassland and upland blanket bog; hunting, male, hovering and hunting, landed briefly but caught nothing.	RV
BZ007	BZ003	VP2	10/11/2021	16:24	Buzzard	1	19	0	19	0	0	improved agricultural grassland and conifer plantation; flying, flew quickly across edge of plantation	RV
	2022-12-23T16:53:21.855	VP2	10/11/2021	16:53	Meadow Pipit	1	-	-	-	-	-	improved agricultural grassland; flying, flew south over vp	RV



SH003	SH002	VP2	10/11/2021	16:54	Sparrowhawk	1	9	0	9	0	0	improved agricultural grassland; flying, flew quickly just over the road.	RV
SH004	LD101	VP1	17/11/2021	12:24	Sparrowhawk	1	12	12	0	0	0	wet grassland and conifer plantation; hunting and travelling, sparrowhawk seen hunting on the hillside.	LD
	Not Mapped	VP1	17/11/2021	12:27	Meadow Pipit	1	10	10	0	0	0	wet grassland; travelling, meadow pipits on site.	LD
	Not Mapped	VP1	17/11/2021	14:40	Meadow Pipit	2	10	10	0	0	0	wet grassland; travelling, meadow pipits on site.	LD
BZ008	LD104	VP1	17/11/2021	15:17	Buzzard	1	12	2	14	0	0	wet grassland and conifer plantation; hunting, buzzard also hunting further west below the vp.	LD
	2022-12-23T16:58:59.657	VP3	23/11/2021	10:50	Meadow Pipit	4	-	-	-	-	-	improved agricultural grassland; flying, along road	RV
K005	K003	VP3	23/11/2021	14:41	Kestrel	1	61	0	61	0	0	upland blanket bog; hunting, female/imm, hovered twice behind plantation, flew west	RV
K006	K004	VP3	23/11/2021	15:11	Kestrel	1	155	0	123	32	0	improved agricultural grassland; hunting, same as above, hunting in front of turbines.	RV
	Not Mapped	VP4	24/11/2021	10:50	Meadow Pipit	2	-	-	-	-	-	improved agricultural grassland; flying	RV
	2022-12-23T17:00:25.139	VP4	24/11/2021	10:50	Redwing	25	-	-	-	-	-	improved agricultural grassland; flying, rough count, several flocks	RV



SH005	SH003	VP4	24/11/2021	11:24	Sparrowhawk	1	9	0	9	0	0	improved agricultural grassland and scrub; flying, juv male, flew leisurely across fields	RV
SH006	SH004	VP4	24/11/2021	11:54	Sparrowhawk	1	11	0	11	0	0	improved agricultural grassland and scrub; flying, same as above, flew into flock of thrush but caught nothing	RV
SH007	SH005	VP4	24/11/2021	12:29	Sparrowhawk	1	8	0	8	0	0	improved agricultural grassland, scrub and conifer plantation; flying, same as above, flew across field below vp	RV
BZ009	BZ004	VP4	24/11/2021	12:35	Buzzard	1	15	0	0	15	0	improved agricultural grassland, scrub and conifer plantation; flying, adult flew across fields behind laneway	RV
	Not Mapped	VP4	24/11/2021	15:04	Grey Wagtail	1	-	-	-	-	-	improved agricultural grassland; flying, calling	RV
SH008	SH006	VP4	24/11/2021	16:26	Sparrowhawk	1	5	0	5	0	0	scrub; flying, flew quickly over vp	RV
SN004	SN001	VP1	16/12/2021	08:17	Snipe	1	6	0	6	0	0	upland blanket bog; flying, called flying over	RV
GP006	GP001	VP1	16/12/2021	09:02	Golden Plover	75	45	0	0	45	0	upland blanket bog; circling, heard also at 08:50 and 10:07 but not seen	RV
GP007	GP002	VP1	16/12/2021	10:41	Golden Plover	75	275	0	35	240	0	upland blanket bog; circling, roughly 75 birds on each occasion	RV



GP008	GP003	VP1	16/12/2021	12:30	Golden Plover	75	35	0	0	35	0	upland blanket bog; flying, flew high over and north	RV
GP009	GP004	VP1	16/12/2021	12:38	Golden Plover	75	360	0	0	360	0	upland blanket bog; circling, circling, vocal	RV
SN005	SN002	VP2	20/12/2021	08:23	Snipe	1	5	5	0	0	0	upland blanket bog; flying, flew low past vp	RV
K007	K001	VP2	20/12/2021	09:04	Kestrel	1	67	0	67	0	0	upland blanket bog and improved agricultural grassland; hunting, male hunting low below low cloud	RV
SH009	SH001	VP2	20/12/2021	09:32	Sparrowhawk	1	9	9	0	0	0	improved agricultural grassland; flying, female flying low	RV
BZ010	BZ001	VP4	31/12/2021	10:02	Buzzard	1	315	0	60	255	0	conifer plantation; circling, hear also at 09:41 and 09:49, not seen	RV
BZ011	BZ002	VP4	31/12/2021	10:04	Buzzard	1	165	0	90	75	0	conifer plantation; circling/displaying, joined bird above, circled, called and displayed	RV
BZ012	BZ003	VP4	31/12/2021	12:22	Buzzard	1	425	0	0	425	0	improved agricultural grassland; hunting, circling, hovering and hunting in front of vp	RV
BZ013	BZ004	VP4	31/12/2021	13:08	Buzzard	1	135	0	30	105	0	improved agricultural grassland and conifer plantation; hunting, circled over farmland in front of vp	RV
BZ014	BZ005	VP4	31/12/2021	13:17	Buzzard	1	8	8	0	0	0	improved agricultural grassland; flying, flew in and landed in tree	RV
BZ015	BZ006	VP4	31/12/2021	14:12	Buzzard	1	15	0	15	0	0	improved agricultural grassland; flying, flew from tree	RV



	MP001	VP1	11/01/2022	07:50	Meadow Pipit	1	-	-	-	-	-	upland blanket bog; flew over vp	RV
	RE001	VP1	11/01/2022	07:50	Redwing	15	-	-	-	-	-	upland blanket bog; flying	RV
	Not Mapped	VP4	20/01/2022	11:15	Redwing	50	-	-	-	-	-	mixed broadleaved/conifer woodland; feeding, recorded as wo	RV
	Not Mapped	VP4	20/01/2022	11:15	Meadow Pipit	5	-	-	-	-	-	mixed broadleaved/conifer woodland; feeding, recorded as wo	RV
SH010	SH001	VP4	20/01/2022	12:57	Sparrowhawk	1	96	0	0	96	0	conifer plantation; circling, circled far hill, probably a male	RV
WK002	WK001	VP4	20/01/2022	17:31	Woodcock	1	4	0	4	0	0	mixed broadleaved/conifer woodland; flying, flew from below vp south to farmland	RV
WK003	WK002	VP4	20/01/2022	17:33	Woodcock	1	4	0	4	0	0	mixed broadleaved/conifer woodland; flying, flew from below vp south to farmland	RV
SN006	SN001	VP4	20/01/2022	17:37	Snipe	1	3	0	3	0	0	mixed broadleaved/conifer woodland; flying, flew from below vp, kept low	RV
SN007	SN001	VP3	08/02/2022	07:56	Snipe	1	7	0	7	0	0	upland blanket bog; flying, flew up hill before sunrise, others heard but not seen 0718,0735 and 0738.	RV
SH011	SH001	VP3	08/02/2022	09:41	Sparrowhawk	1	72	0	72	0	0	conifer plantation; circling, circled over plantation, male	RV
HH002	HH001	VP3	08/02/2022	10:58	Hen Harrier	1	56	56	0	0	0	upland blanket bog; hunting, male hunting	RV



SN008	SN002	VP3	08/02/2022	10:59	Snipe	1	5	5	0	0	0	upland blanket bog and conifer plantation; flushed, flushed by hh, flew low and lost into plantation	RV
HH004	MP001	VP4	10/02/2022	07:10	Meadow Pipit	13	0	0	0	0	0	improved agricultural grassland and scrub; flying, flew east over vp during survey in singles and pairs	RV
HH005	RE001	VP4	10/02/2022	07:10	Redwing	20	0	0	0	0	0	improved agricultural grassland and hedgerows; feeding, feeding in sheep fields, flushed by sh twice and flew to hedgerows	RV
BZ016	BZ001	VP3	10/02/2022	08:55	Buzzard	1	18	0	18	0	0	improved agricultural grassland and hedgerows; flying, flew across fields	RV
SH012	SH002	VP4	10/02/2022	09:26	Sparrowhawk	1	10	0	10	0	0	improved agricultural grassland, hedgerows and conifer plantation; flying, female flew across in front of vp	RV
SH013	SH003	VP4	10/02/2022	11:30	Sparrowhawk	1	6	10	0	0	0	improved agricultural grassland and hedgerows; flying, female flew low across fields	RV
BZ017	BZ002	VP4	10/02/2022	11:51	Buzzard	1	625	0	45	580	0	conifer plantation and improved agricultural grassland; circling, circling and calling over plantation opposite vp	RV



	GL001	VP4	10/02/2022	13:10	Grey Wagtail	1	0	0	0	0	0	improved agricultural grassland and eroding/upland rivers; flying, flew west calling at 13:10, roughly following river	RV
	MP002	VP2	15/02/2022	07:00	Meadow Pipit	3	0	0	0	0	0	upland blanket bog; feeding, 2-3 feeding along road above vp, regularly heard calling and flying about.	RV
	2022-12-01T12:36:18.545	VP1	25/02/2022	10:46	Meadow Pipit	1	10	10	0	0	0	wet grassland; travel/display, meadow pipit's seen on site	LD
BZ018	2022-12-01T12:39:31.520	VP1	25/02/2022	10:54	Buzzard	1	-	-	-	-	-	conifer plantation and wet grassland; calling, bz was heard calling from forestry below the vp to the west.	LD
BZ019	2022-12-01T12:38:23.766	VP1	25/02/2022	11:07	Buzzard	1	140	0	140	0	0	wet grassland and conifer plantation; hunting, a buzzard heard calling, and then seen hunting below the vp in the valley off to the west.	LD
	2022-12-01T12:37:02.234	VP1	25/02/2022	11:37	Meadow Pipit	1	10	10	0	0	0	wet grassland; travel/display, meadow pipit's seen on site	LD
HH003	HH001	VP2	08/03/2022	18:20	Hen Harrier	1	9	9	0	0	0	conifer plantation and upland blanket bog; flying, male arrived late in evening	RV
SN009	SN001	VP2	08/03/2022	18:46	Snipe	1	6	0	6	0	0	upland blanket bog; flying, circled over plantation, male	RV



HH004	HH002	VP1	14/03/2022	13:53	Hen Harrier	1	15	0	15	0	0	upland blanket bog; hunting, male hunting mobbed by raven	RV
BZ020	BZ001	VP1	14/03/2022	14:09	Buzzard	1	145	0	0	145	0	improved agricultural grassland and conifer plantation; circling, circling bz, joined by a 2nd bird	RV
BZ021	BZ002	VP1	14/03/2022	14:10	Buzzard	1	55	0	0	55	0	improved agricultural grassland and conifer plantation; circling, joined #2 and circled higher together before gliding west	RV
GP010	GP001	VP1	14/03/2022	14:29	Golden Plover	20	58	0	0	58	0	upland blanket bog; circling, flock of c.20 circling over mountain top	RV
BZ022	BZ003	VP1	14/03/2022	15:23	Buzzard	1	156	0	0	156	0	conifer plantation; circling, circled from east and then turned north	RV
BZ023	BZ004	VP1	14/03/2022	16:42	Buzzard	1	184	0	0	184	0	conifer plantation and improved agricultural grassland; circling, circled from east and then flew sw	RV
GP011	GP002	VP1	14/03/2022	16:56	Golden Plover	20	25	0	0	25	0	upland blanket bog; circling, circling and calling	RV
HH005	HH003	VP1	14/03/2022	17:37	Hen Harrier	1	65	0	35	30	0	upland blanket bog and conifer plantation; circling, circled in from west and past vp	RV
BZ024	BZ005	VP1	14/03/2022	18:28	Buzzard	1	435	0	0	435	0	conifer plantation and improved agricultural grassland; circling, circled calling before	RV



												landing out of view in trees	
GP012	GP003	VP3	15/03/2022	13:36	Golden Plover	12	15	0	15	0	0	upland blanket bog; flying, flew low behind vp3 calling	RV
HH006	HH004	VP4	30/03/2022	16:35	Hen Harrier	1	75	65	10	0	0	upland blanket bog and conifer plantation; hunting, male flew in and landed out of view	RV
HH007	HH005	VP4	30/03/2022	16:36	Hen Harrier	1	385	15	45	325	0	upland blanket bog and conifer plantation; displaying, female arrived after male then circled and displayed high over area	RV
HH008	HH006	VP4	30/03/2022	17:41	Hen Harrier	1	75	25	50	0	0	upland blanket bog and conifer plantation; circling, male circled up and flew west	RV
HH009	HH007	VP4	30/03/2022	17:58	Hen Harrier	1	20	20	0	0	0	improved agricultural grassland; hunting, male hunting	RV
HH010	HH008	VP4	30/03/2022	18:10	Hen Harrier	1	28	28	0	0	0	upland blanket bog and conifer plantation; hunting, male flew in slowly hunting and landed out of view	RV
HH011	HH009	VP4	30/03/2022	19:04	Hen Harrier	1	75	50	25	0	0	upland blanket bog, improved agricultural grassland and conifer plantation; hunting, male flew around hunting, out of view behind vp and then	RV



													landed briefly before flying west	
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Appendix 1 Table 3 Winter Walkover Observations

Report Ref.	Ref.	Date	Time	Species	Number	Habitat and activity	Surveyor
	2021-11-30T14:04:29.798	17/10/2021	11:10	Meadow Pipit	6	improved agricultural grassland; feeding, feeding in rough grassland (suitable nesting habitat; possible breeder)	RV
	NOT MAPPED	17/10/2021	11:10	Redwing	13	scrub and conifer plantation; flyover, flushed from scrub in plantation (flyover; non-breeding)	RV
	2021-11-30T14:07:11.623	17/10/2021	13:45	Meadow Pipit	7	improved agricultural grassland and upland blanket bog; feeding, 2 flocks feeding (suitable nesting habitat; possible breeder)	RV
	NOT MAPPED	17/10/2021	13:45	Redwing	5	conifer plantation; flyovers, flyovers (flyover; non-breeding)	RV
SN010	2021-11-30T13:46:47.368	17/10/2021	13:45	Snipe	2	upland blanket bog; flushed, 2 flushed on mountain top (suitable nesting habitat; possible breeder)	RV
	NOT MAPPED	17/10/2021	15:56	Redwing	25	conifer plantation: flyovers, 1 flock flying over (flyover; non-breeding)	RV
	2021-11-30T13:48:52.132	17/10/2021	15:56	Meadow Pipit	4	conifer plantation; flyover, flyovers (flyover; non-breeding)	RV
	2021-11-30T13:50:06.613	28/10/2021	09:00	Meadow Pipit	28	upland blanket bog and conifer plantation; flushed, a few singles and small flocks (suitable nesting habitat; possible breeder)	RV
	NOT MAPPED	28/10/2021	09:00	Redwing	75	conifer plantation: flyovers, single flock in plantation chased by sh (flyover; non-breeding)	RV
SH014	2021-11-30T13:53:24.819	28/10/2021	09:00	Sparrowhawk	1	conifer plantation: hunting, male chasing re, appeared to catch one (suitable nesting habitat; possible breeder)	RV
	2021-11-30T13:55:08.851	28/10/2021	13:08	Meadow Pipit	38	upland blanket bog and cutover bog; feeding, several small flocks (suitable nesting habitat; possible breeder)	RV
	NOT MAPPED	28/10/2021	13:08	Redwing	40	upland blanket bog; flyovers, 1 flock flying over (flyover; non-breeding)	RV
RG001	2021-11-30T13:59:12.505	28/10/2021	14:07	Red Grouse	2	upland blanket bog; flushed, pair flushed (suitable nesting habitat; possible breeder)	RV
SN011	2021-11-30T14:00:11.050	28/10/2021	14:10	Snipe	1	upland blanket bog; flushed, single flushed close to rg location (suitable nesting habitat; possible breeder)	RV
WS002	2023-01-03T14:33:06.929	28/10/2021	14:35	Whooper Swan	30	improved agricultural grassland, conifer plantation and upland blanket bog; flyovers, 30 flew east, 1 broke away and flew north. (flyover; non-breeding)	RV
	Not mapped	10/11/2021	09:04	Meadow Pipit	2	upland blanket bog; flyover (flyover; non-breeding)	RV



	SD001	10/11/2021	09:27	Stock Dove	5	conifer plantation; flyovers, flyovers (flyover; non-breeding)	RV
	Not mapped	19/11/2021	09:04	Redwing	20	upland blanket bog; flyover (flyover; non-breeding)	RV
	Not mapped	19/11/2021	09:04	Meadow Pipit	5	upland blanket bog; flyover (flyover; non-breeding)	RV
	Not mapped	19/11/2021	09:04	Snipe	1	upland blanket bog; flushed, close to road (suitable nesting habitat; possible breeder)	RV
	Not mapped	19/11/2021	09:04	Red Grouse	1	upland blanket bog; flushed, flushed below vp3 (suitable nesting habitat; possible breeder)	RV
	Not mapped	19/11/2021	09:16	Redwing	20	conifer plantation and scrub; flyovers, flyovers in plantation, may have been more birds involved. (flyover; non-breeding)	RV
SN012	SN001	19/11/2021	09:16	Snipe	1	upland blanket bog; flushed, 1 flushed by road (suitable nesting habitat; possible breeder)	RV
RG002	RG001	19/11/2021	09:16	Red Grouse	1	upland blanket bog; flushed, 1 male flushed by road near vp3 (suitable nesting habitat; possible breeder)	RV
	MP002	19/11/2021	09:16	Meadow Pipit	5	upland blanket bog and conifer plantation; flushed and flyovers, a few singles and small flocks (suitable nesting habitat; possible breeder)	RV
	Not mapped	25/11/2021	09:04	Meadow Pipit	6	improved agricultural grassland; feeding, feeding in rough grassland (suitable nesting habitat; possible breeder)	RV
	RE001	25/11/2021	09:04	Redwing	6	scrub and conifer plantation; flyover, flyovers, mostly singles, possibly more (flyover; non-breeding)	RV
	Not mapped	25/11/2021	09:04	Redwing	6	upland blanket bog; flyover (flyover; non-breeding)	RV
	Not mapped	25/11/2021	09:04	Meadow Pipit	6	upland blanket bog; flyover, in with donkeys (flyover; non-breeding)	RV
	Not mapped	25/11/2021	09:04	Meadow Pipit	6	upland blanket bog; flyover, on top of hill around sheep feeders (flyover; non-breeding)	RV
	Not mapped	25/11/2021	09:04	Redwing	14	upland blanket bog; flyover (flyover; non-breeding)	RV
	Not mapped	25/11/2021	09:04	Meadow Pipit	3	upland blanket bog; flushed (suitable nesting habitat; possible breeder)	RV
	Not mapped	25/11/2021	09:04	Red Grouse	1	upland blanket bog; , old latrine at g92113 44572 (suitable nesting habitat; possible breeder)	RV
	MP001	25/11/2021	11:35	Meadow Pipit	6	upland blanket bog; feeding, small numbers around sheep (suitable nesting habitat; possible breeder)	RV
	Not mapped	25/11/2021	14:36	Red Grouse	1	upland blanket bog; latrine, latrine at grid ref g92113 44572, not fresh (suitable nesting habitat; possible breeder)	RV
	Not mapped	25/11/2021	14:36	Redwing	14	upland blanket bog; flyover, flyovers (flyover; non-breeding)	RV



	Not mapped	25/11/2021	14:36	Meadow Pipit	3	upland blanket bog; flushed, flushed singles (suitable nesting habitat; possible breeder)	RV
BZ025	BZ001	29/01/2022	13:04	Buzzard	1	improved agricultural grassland; flushed, flew from pole by road across sheep fields (suitable nesting habitat; possible breeder)	RV
	GL001	29/01/2022	13:04	Grey Wagtail	1	improved agricultural grassland; feeding, feeding around sheep sheds in puddles (suitable nesting habitat; possible breeder)	RV
SN013	SN001	31/01/2022	12:01	Snipe	1	cutover bog; flushed, flushed close to road (suitable nesting habitat; possible breeder)	RV
WK004	WK001	31/01/2022	12:01	Woodcock	1	scrub; flushed, flushed from scrub at edge of plantation (suitable nesting habitat; possible breeder)	RV
	MP002	15/03/2022	11:17	Meadow Pipit	3	improved agricultural grassland; displaying, 3 displaying in sheep fields (courtship and display; probable breeding)	RV
SH015	SH001	15/03/2022	11:17	Sparrowhawk	1	scrub; flushed, male sh flushed from roadside scrub, possibly carrying prey (suitable nesting habitat; possible breeder)	RV
BZ026	BZ001	27/03/2022	08:48	Buzzard	2	conifer plantation; displaying, pair circling and displaying east of transect (courtship and display; probable breeding)	RV
	MP003	27/03/2022	08:48	Meadow Pipit	7	upland blanket bog; displaying, displaying along loop walk (courtship and display; probable breeding)	RV
	MP004	27/03/2022	08:48	Meadow Pipit	6	upland blanket bog; displaying, displaying along route, a few singles spread along remainder of route (courtship and display; probable breeding)	RV
RG003	RG001	27/03/2022	08:48	Red Grouse	2	upland blanket bog; flushed, pair flushed along the route on hill top (suitable nesting habitat; possible breeder)	RV
	MP001	27/03/2022	10:44	Meadow Pipit	12	upland blanket bog; displaying, 12 displaying in upland area (courtship and display; probable breeding)	RV
SN014	SN001	27/03/2022	10:44	Snipe	1	upland blanket bog; flushed, flushed from mountain top (suitable nesting habitat; possible breeder)	RV
K008	K001	29/03/2022	13:28	Kestrel	1	conifer plantation; flying, male flew north over route, circling briefly (flyover; non-breeding)	RV
	MP005	30/03/2022	09:01	Meadow Pipit	5	upland blanket bog; displaying, displaying along route (courtship and display; probable breeding)	RV
	MP006	30/03/2022	09:01	Meadow Pipit	11	upland blanket bog; displaying, displaying along route (courtship and display; probable breeding)	RV
	MP007	30/03/2022	09:01	Meadow Pipit	6	upland blanket bog; displaying, displaying in clearing (courtship and display; probable breeding)	RV



	Not mapped	30/03/2022	09:01	Mallard	1	upland blanket bog; , transect 5 (flyover; non-breeding)	RV
	not mapped	30/03/2022	09:01	Buzzard	1	upland blanket bog and conifer plantation; calling, heard calling but not seen (suitable nesting habitat; possible breeder)	RV



Appendix 1 Table 4 Hen Harrier Roost Survey Observations

Report Ref.	Ref.	HHVP	Date	Time	Species	Number	Habitat and activity	Surveyor
HH012	HH001	HHR1	08/03/2022	06:05	Hen Harrier	1	improved agricultural grassland, flying, male flew along edge of valley	RV



Appendix 1 Table 5 Breeding Red Grouse Survey Observations

Report Ref.	Ref.	Transect	Date	Time	Species	Number	Habitat and activity	Surveyor
RG004	2022-03-31T13:50:20.155	Transect 1	31/03/2022	13:50	Red Grouse	1	montane heath, call/fly, male called and flew	AOD
RG005	2022-03-31T17:56:31.117	Transect 2	31/03/2022	17:56	Red Grouse	1	montane heath, fly/call, male	AOD

Appendix 1 Table 6 Incidental Observations

Report Ref	Ref.	Location	Date	Time	Species	Number	Habitat and Activity	Surveyor
RG006	2021-11-30T14:14:20.696	Vantage Point Survey; VP3	10/10/2021	15:30	Red Grouse	1	upland blanket bog; feeding, male sat by track	RV
HH013	2021-11-30T14:15:42.145	Vantage Point Survey; VP3	10/10/2021	15:51	Hen Harrier	1	upland blanket bog; hunting, male hunting by track, seen again 15:56	RV
HH014	2021-11-30T14:11:20.392	Vantage Point Survey; VP3	10/10/2021	15:56	Hen Harrier	1	upland blanket bog; hunting, male seen before	RV
BZ027	2021-11-30T12:32:38.653	Hen Harrier Roost Survey; HHR2	10/10/2021	17:20	Buzzard	2	improved agricultural grassland and scrub; flew ne from pole & hawthorn at hhyp2, seen as arriving on site	RV
	2021-11-30T12:33:42.808	Hen Harrier Roost Survey; HHR2	10/10/2021	17:30	Dipper	1	eroding/upland rivers; singing on river below vp 17:30-18:00, called regularly then to 19:10	RV
	2021-11-30T12:34:47.037	Hen Harrier Roost Survey; HHR2	10/10/2021	17:50	Great Spotted Woodpecker	1	scrub; calling persistently 17:50-18:15, seen in treetops	RV
BZ028	2021-11-30T12:36:05.156	Hen Harrier Roost Survey; HHR2	10/10/2021	18:14	Buzzard	1	conifer plantation and improved agricultural grassland; flew across site	RV
	2021-11-30T12:37:16.846	Hen Harrier Roost Survey; HHR2	10/10/2021	18:23	Grey Heron	1	eroding/upland rivers and improved agricultural grassland; flew up from stream	RV
SN015	2021-11-30T12:44:48.990	Hen Harrier Roost Survey; HHR3	15/10/2021	17:44	Snipe	5	conifer plantation and improved agricultural grassland; flew over at 75m height & continued east	RV
SH016	2021-11-30T12:46:00.797	Hen Harrier Roost Survey; HHR3	15/10/2021	17:46	Sparrowhawk	1	conifer plantation and improved agricultural grassland; flew east, lost behind hill, female	RV
GL001	2021-11-30T12:47:57.173	Hen Harrier Roost Survey; HHR3	15/10/2021	18:00	Grey Wagtail	1	improved agricultural grassland and eroding/upland rivers; landed on road by vp, and slowly walked down toward stream feeding in puddles	RV
SH017	2021-11-30T12:47:14.295	Hen Harrier Roost Survey; HHR3	15/10/2021	18:45	Sparrowhawk	1	conifer plantation and improved agricultural grassland; flew east, lost behind hill, male	RV
	Not Mapped	Hen Harrier Roost Survey; HHR4	28/10/2021	17:00	Redwing	100	improved agricultural grassland; large flock moving across site	RV
SN016	2021-11-30T12:54:27.641	Hen Harrier Roost Survey; HHR4	28/10/2021	18:33	Snipe	1	improved agricultural grassland; heard not seen, sounded like flew south over vp	RV
SN017	2021-11-30T12:55:31.235	Hen Harrier Roost Survey; HHR4	28/10/2021	18:37	Snipe	1	improved agricultural grassland; heard not seen, sounded like flew south over vp	RV



WK005	WK001	Vantage Point Survey; In transit	14/12/2021	07:36	Woodcock	1	scrub and conifer plantation; flushed, flushed while driving	RV
	MP001	Vantage Point Survey; VP3	14/12/2021	10:12	Meadow Pipit	3	upland blanket bog; flyovers, 3 singles flew over in a loose flock	RV
SN018	SN001	Vantage Point Survey; VP3	14/12/2021	11:15	Snipe	2	upland blanket bog; flushed, 2 flushed walking back to vp after break	RV
SN019	SN002	Vantage Point Survey; VP3	14/12/2021	14:25	Snipe	1	upland blanket bog; flushed, 1 flushed after survey	RV
WK006	WK005	Hen Harrier Roost Survey; HHR4	14/12/2021	17:10	Woodcock	1	improved agricultural grassland and scrub; flushed, 1 flushed from roadside leaving vp	RV
WK007	WK002	Hen Harrier Roost Survey; In transit	16/12/2021	07:35	Woodcock	1	conifer plantation; flushed, flushed while driving	RV
WK008	WK003	Hen Harrier Roost Survey; In transit	20/12/2021	07:30	Woodcock	3	conifer plantation and scrub; flushed, 3 individuals flushed while driving along road	RV
	MP002	Vantage Point Survey; VP2	20/12/2021	08:30	Meadow Pipit	3	upland blanket bog; feeding, 3 feeding around vp throughout survey	RV
	DI001	Hen Harrier Roost Survey; HHR2	20/12/2021	15:00	Dipper	1	eroding/upland rivers; singing/calling, 1 dipper singing and calling throughout survey	RV
	RE001	Hen Harrier Roost Survey; HHR2	20/12/2021	15:45	Redwing	75	improved agricultural grassland and conifer plantation; flying, several small flocks flew into plantation between 15:45 and 16:15	RV
WK009	WK004	Vantage Point Survey; VP1	31/12/2021	07:45	Woodcock	1	improved agricultural grassland; flushed, flushed walking to vp	RV
	RE002	Hen Harrier Roost Survey; HHR3	31/12/2021	16:24	Redwing	35	improved agricultural grassland; flying, 1 flock flew over with ff	RV
	Not Mapped	Hen Harrier Roost Survey; HHR1	11/01/2022	07:50	Redwing	5	improved agricultural grassland; flying, 5 singles flew over calling in dark	RV
	2022-12-23T17:13:49.494	Hen Harrier Roost Survey; HHR2	12/01/2022	07:50	Redwing	3	improved agricultural grassland and conifer plantation; flying, 3 singles flew over	RV
	2022-12-23T17:14:48.354	Hen Harrier Roost Survey; HHR2	12/01/2022	07:50	Meadow Pipit	1	improved agricultural grassland; flying, 1 flew over south	RV
WK010	WK002	Hen Harrier Roost Survey; HHR2	12/01/2022	08:42	Woodcock	1	improved agricultural grassland; flying, flew ne	RV
WK011	WK001	Vantage Point Survey; VP2	12/01/2022	17:45	Woodcock	1	improved agricultural grassland; flushed, flew up from roadside	RV



WK012	WK003	Hen Harrier Roost Survey; HHR4	13/01/2022	08:08	Woodcock	1	improved agricultural grassland, scrub and conifer plantation; flying, 1 flew over	RV
WK013	WK004	Hen Harrier Roost Survey; HHR4	13/01/2022	08:11	Woodcock	1	improved agricultural grassland, scrub, and conifer plantation; flying, 1 flew over	RV
SH018	SH001	Hen Harrier Roost Survey; HHR4	13/01/2022	09:50	Sparrowhawk	1		RV
WK014	WK007	Hen Harrier Roost Survey; HHR3	20/01/2022	07:40	Woodcock	1	treelines and immature woodland; flushed, flushed from muddy roadside	RV
WK015	WK005	Hen Harrier Roost Survey; HHR3	20/01/2022	08:04	Woodcock	1	improved agricultural grassland; flying, flew over	RV
WK016	WK006	Hen Harrier Roost Survey; HHR3	20/01/2022	08:07	Woodcock	1	improved agricultural grassland; flying, flew over	RV
BZ029	2022-12-23T17:15:52.427	Hen Harrier Roost Survey; HHR3	20/01/2022	09:09	Buzzard	1	hedgerows; calling, calling behind vp	RV
WK017	WK001	Vantage Point Survey; VP4	10/02/2022	07:10	Woodcock	1	improved agricultural grassland and scrub; flushed, flushed as I walked up to vp	RV
HH015	HH001	Hen Harrier Roost Survey; HHR3	10/02/2022	16:12	Hen Harrier	1	conifer plantation and improved agricultural grassland; circling, circled and displayed briefly as i prepared for harrier roost vp, appeared to land just before heavy shower	RV
WK018	WK006	Vantage Point Survey; VP2	15/02/2022	06:45	Woodcock	1	improved agricultural grassland; flushed, flushed from roadside	RV
WK019	WK007	Vantage Point Survey; VP2	15/02/2022	06:46	Woodcock	1	conifer plantation; flushed, flushed from roadside	RV
WK020	WK002	Hen Harrier Roost Survey; HHR2	15/02/2022	18:03	Woodcock	1	improved agricultural grassland and conifer plantation; flying, flew over vp, low and lost against trees on far side of valley	RV
SN020	SN001	Hen Harrier Roost Survey; HHR2	15/02/2022	18:07	Snipe	2	improved agricultural grassland and conifer plantation; flying, flew over vp.	
SH019	SH001	Hen Harrier Roost Survey; HHR4	26/02/2022	17:02	Sparrowhawk	1	improved agricultural grassland and hedgerows; circling, circled in strong wind but buffered quickly west.	RV
WK021	WK003	Hen Harrier Roost Survey; HHR4	26/02/2022	18:19	Woodcock	1	improved agricultural grassland and hedgerows; flying, 1 woodcock flew out towards open fields	RV
WK022	WK004	Hen Harrier Roost Survey; HHR4	26/02/2022	18:27	Woodcock	1	improved agricultural grassland and hedgerows; flying, 1 woodcock flew out towards open fields	RV

WK023	WK005	Hen Harrier Roost Survey; HHR4	26/02/2022	18:29	Woodcock	1	improved agricultural grassland and hedgerows; flying, 1 woodcock flew out towards open fields	RV
SN021	SN002	Hen Harrier Roost Survey; HHR4	26/02/2022	18:36	Snipe	1	improved agricultural grassland; calling, heard flying over similar route to wk's but not seen	RV
WK024	WK001	Hen Harrier Roost Survey; HHR2	15/03/2022	06:05	Woodcock	2	improved agricultural grassland and scrub; flying, 2 woodcock flew along river against the sky.	RV
LE001	LE001	Hen Harrier Roost Survey; HHR4	27/03/2022	06:38	Long-Eared Owl	1	improved agricultural grassland; hunting, long-eared owl hunting in front of vp, may have landed	RV
LE002	LE002	Hen Harrier Roost Survey; HHR4	27/03/2022	06:41	Long-Eared Owl	1	improved agricultural grassland; hunting, same as above, flew across road and out of view.	RV
	Not Mapped	Walkover Survey, Transect 4	29/03/2022	12:15	Hen Harrier	1	conifer plantation and scrub; displaying, male circling and displaying at beginning of transect 4	RV
	Not Mapped	Walkover Survey, Transect 4	29/03/2022	12:27	Hen Harrier	1	conifer plantation and scrub; displaying, female joined male above displaying, together till 12:41	RV
	Not Mapped	Walkover Survey, Transect 4	29/03/2022	12:29	Buzzard	1	conifer plantation; flying, flew west high over displaying harriers	RV
	Not Mapped	Walkover Survey, Transect 4	29/03/2022	13:20	Hen Harrier	2	conifer plantation and scrub; displaying, pair of hh displaying together before moving north.	RV
HH016	2022-03-31T13:54:17.342	Breeding Red Grouse Survey; Killea	31/03/2022	13:54	Hen Harrier	1	conifer plantation and montane heath; foraging, male	AOD
SN022	2022-03-31T13:54:53.696	Breeding Red Grouse Survey; Killea	31/03/2022	13:54	Snipe	1	montane heath; fly, flushed	AOD
	2022-04-13T19:14:35.695	Walkover Survey; Faughary	13/04/2022	17:00	Hen Harrier	1	wet grassland; foraging, adult male. possibly same bird as earlier in day.	AOD
	2022-04-20T20:05:59.997	Walkover Survey; On Site	20/04/2022	20:06	Hare	1	conifer plantation; feeding	AOD
	2022-04-20T20:06:29.525	Walkover Survey; On Site	20/04/2022	20:06	Hare	1	conifer plantation; feeding	AOD
	2022-12-21T15:00:24.082	Breeding Raptor Survey; 5Km Radius	11/05/2022	15:35	Mallard	1	bogs; travelling	KB
	2022-10-11T16:39:16.983	Breeding Raptor Survey; 5Km Radius	18/05/2022	08:32	Lesser Black-Backed Gull	2	wet grassland, conifer plantation and bogs; travelling	KB
	2022-10-11T16:45:36.159	Breeding Raptor Survey; 5Km Radius	18/05/2022	09:11	Lesser Black-Backed Gull	3	wet grassland, conifer plantation and bogs; travelling	KB



	2022-10-11T16:57:37.974	Breeding Raptor Survey; 5Km Radius	19/05/2022	08:17	Meadow Pipit	3	bogs; foraging	KB
	2022-10-11T16:59:05.971	Breeding Raptor Survey; 5Km Radius	19/05/2022	08:45	Meadow Pipit	2	bogs; singing	KB
	2022-10-11T17:00:32.587	Breeding Raptor Survey; 5Km Radius	19/05/2022	09:14	Meadow Pipit	5	bogs; foraging	KB
	2022-10-11T17:08:11.901	Breeding Raptor Survey; 5Km Radius	24/05/2022	17:12	Snipe	2	bogs; vociferous chipping and drumming/displaying in sky together	KB
	2022-10-11T17:09:47.279	Breeding Raptor Survey; 5Km Radius	24/05/2022	17:15	Woodcock	1	bogs; roding	KB
	2022-10-11T17:11:02.439	Breeding Raptor Survey; 5Km Radius	24/05/2022	17:18	Snipe	2	bogs; chipping and drumming	KB
	2022-10-11T17:15:04.204	Breeding Raptor Survey; 5Km Radius	24/05/2022	18:00	Snipe	1	bogs; chipping	KB
	2022-10-11T17:16:09.781	Breeding Raptor Survey; 5Km Radius	24/05/2022	18:27	Snipe	1	bogs; chipping	KB
	2022-10-11T17:17:19.355	Breeding Raptor Survey; 5Km Radius	24/05/2022	18:34	Snipe	1	bogs; display flight	KB
	2022-10-11T17:18:33.321	Breeding Raptor Survey; 5Km Radius	24/05/2022	18:59	Snipe	1	bogs; display flight	KB
	2022-10-27T10:40:09.023	Breeding Raptor Survey; 5Km Radius	25/05/2022	14:21	Lesser Black-Backed Gull	3	bogs; travelling	KB
	2022-10-27T11:08:38.735	Breeding Raptor Survey; 5Km Radius	25/05/2022	14:33	Lesser Black-Backed Gull	1	semi-natural grassland and watercourses; travelling	KB
	2022-10-27T10:57:39.887	Breeding Raptor Survey; 5Km Radius	25/05/2022	14:58	Lesser Black-Backed Gull	1	semi-natural grassland, watercourses and bogs; travelling	KB
	2022-10-27T10:50:15.925	Breeding Raptor Survey; 5Km Radius	25/05/2022	15:20	Lesser Black-Backed Gull	8	bogs; travelling	KB
	2022-10-27T10:52:37.293	Breeding Raptor Survey; 5Km Radius	25/05/2022	15:58	Lesser Black-Backed Gull	5	bogs; travelling	KB
	2022-10-27T11:16:21.898	Breeding Raptor Survey; 5Km Radius	25/05/2022	16:40	Lesser Black-Backed Gull	3	semi-natural grassland and watercourses; soaring	KB
	2022-10-11T15:38:15.833	Vantage Point Survey; VP3	26/05/2022	04:09	Woodcock	1	bogs; flushed	KB



	2022-10-11T16:16:48.144	Vantage Point Survey; VP3	26/05/2022	04:11	Woodcock	1	conifer plantation; flushed	KB
	2022-10-27T11:13:28.595	Breeding Raptor Survey; 5Km Radius	26/05/2022	07:44	Snipe	1	bogs; chipping	KB
	2022-10-27T11:14:51.991	Breeding Raptor Survey; 5Km Radius	26/05/2022	07:50	Herring Gull	1	bogs and conifer plantation; travelling	KB
	2022-10-27T11:16:21.898	Breeding Raptor Survey; 5Km Radius	26/05/2022	10:02	Lesser Black-Backed Gull	1	conifer plantation; travelling	KB
	2022-10-27T11:25:45.922	Breeding Raptor Survey; 5Km Radius	27/05/2022	08:56	Meadow Pipit	1	bogs and wet grassland; singing	KB
	2022-10-27T11:27:37.307	Breeding Raptor Survey; 5Km Radius	27/05/2022	10:04	Meadow Pipit	2	bogs; singing	KB
	2022-10-27T11:33:53.709	Breeding Raptor Survey; 5Km Radius	30/05/2022	17:20	Meadow Pipit	2	semi-natural grassland and bogs; foraging	KB
	2022-10-27T11:36:12.113	Breeding Raptor Survey; 5Km Radius	31/05/2022	17:22	Meadow Pipit	2	bogs; foraging	KB
	2022-10-27T11:37:21.817	Breeding Raptor Survey; 5Km Radius	31/05/2022	17:58	Meadow Pipit	4	bogs; 2x fledglings	KB
	2022-10-27T11:38:44.607	Breeding Raptor Survey; 5Km Radius	31/05/2022	18:31	Meadow Pipit	2	bogs; foraging	KB
	2022-10-27T11:42:32.366	Breeding Raptor Survey; 5Km Radius	01/06/2022	16:34	Lesser Black-Backed Gull	1	bogs and semi-natural grassland; travelling	KB
	2022-10-27T11:44:09.777	Breeding Raptor Survey; 5Km Radius	01/06/2022	16:45	Meadow Pipit	4	bogs and wet grassland; singing and foraging	KB
	2022-12-02T08:34:46.487	Breeding Raptor Survey; 5Km Radius	14/06/2022	07:31	Meadow Pipit	2	bogs; singing	KB
	2022-12-02T08:35:47.878	Breeding Raptor Survey; 5Km Radius	14/06/2022	07:31	Meadow Pipit	5	bogs; foraging	KB
	2022-12-02T08:36:14.881	Breeding Raptor Survey; 5Km Radius	14/06/2022	07:48	Snipe	1	bogs; chipping	KB
	2022-12-02T08:36:40.278	Breeding Raptor Survey; 5Km Radius	14/06/2022	09:50	Snipe	1	bogs; chipping	KB
	2022-12-02T08:37:29.926	Breeding Raptor Survey; 5Km Radius	14/06/2022	10:48	Snipe	1	bogs; drumming	KB



	2022-12-02T08:42:52.487	Breeding Raptor Survey; 5Km Radius	14/06/2022	11:32	Snipe	1	bogs; drumming	KB
	2022-12-02T08:43:18.898	Breeding Raptor Survey; 5Km Radius	14/06/2022	13:39	Snipe	1	bogs; chipping	KB
	2022-12-02T08:45:11.820	Breeding Raptor Survey; 5Km Radius	15/06/2022	13:41	Lesser Black-Backed Gull	1	bogs; foraging	KB
	2022-12-02T08:45:53.048	Breeding Raptor Survey; 5Km Radius	15/06/2022	13:58	Meadow Pipit	7	bogs; foraging	KB
	2022-12-02T08:46:39.298	Breeding Raptor Survey; 5Km Radius	15/06/2022	16:20	Lesser Black-Backed Gull	1	lakes and ponds and bogs; on ground	KB
	2022-12-02T08:47:45.152	Breeding Raptor Survey; 5Km Radius	16/06/2022	13:22	Meadow Pipit	2	wet grassland and bogs; foraging	KB
	2022-12-02T08:49:27.659	Breeding Raptor Survey; 5Km Radius	17/06/2022	13:00	Meadow Pipit	6	bogs; foraging	KB
	2022-12-02T08:50:19.502	Breeding Raptor Survey; 5Km Radius	17/06/2022	15:47	Swift	1	bogs; foraging	KB
	2022-12-02T08:51:42.737	Breeding Raptor Survey; 5Km Radius	20/06/2022	14:41	Swift	1	bogs; foraging	KB
	2022-12-02T08:52:57.779	Breeding Raptor Survey; 5Km Radius	20/06/2022	14:47	Meadow Pipit	1	bogs; singing	KB
	2022-12-02T08:53:26.804	Breeding Raptor Survey; 5Km Radius	20/06/2022	15:11	Swift	9	bogs; foraging	KB
	2022-12-02T08:53:54.514	Breeding Raptor Survey; 5Km Radius	20/06/2022	15:35	Meadow Pipit	5	bogs; foraging	KB
	2022-12-02T08:55:33.327	Breeding Raptor Survey; 5Km Radius	20/06/2022	18:34	Meadow Pipit	4	bogs; foraging	KB
	2022-12-02T08:58:34.898	Breeding Raptor Survey; 5Km Radius	21/06/2022	11:00	Grey Wagtail	3	buildings and artificial surfaces; 2 adults + 1 fledgeling foraging	KB
	2022-12-02T08:59:23.663	Breeding Raptor Survey; 5Km Radius	21/06/2022	14:46	Lesser Black-Backed Gull	1	bogs and wet grassland; travelling	KB
	2022-12-02T08:59:57.062	Breeding Raptor Survey; 5Km Radius	21/06/2022	15:15	Meadow Pipit	24	bogs; 9 fledgelings, 15 adults - foraging	KB
	2022-12-02T09:01:06.000	Breeding Raptor Survey; 5Km Radius	21/06/2022	15:40	Lesser Black-Backed Gull	3	wet grassland; travelling	KB

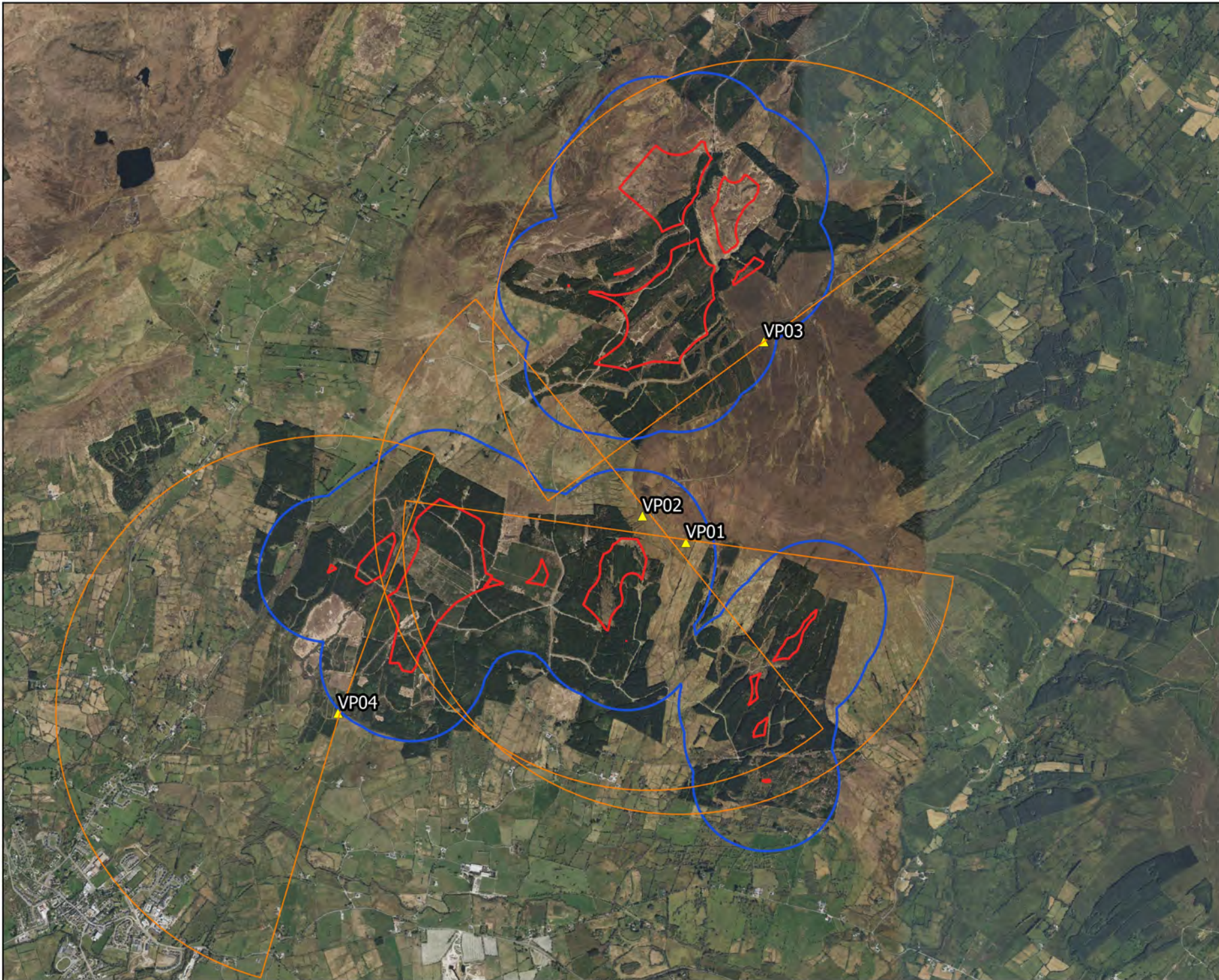
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	2022-12-02T09:02:44.069	Breeding Raptor Survey; 5Km Radius	21/06/2022	16:32	Lesser Black-Backed Gull	1	lakes and ponds and bogs; travelling	KB
	2022-12-02T09:04:13.273	Vantage Point Survey; VP3	23/06/2022	17:17	Grey Wagtail	1	wet grassland and disturbed ground; foraging	KB
	2022-07-14T20:01:18.643	Walkover Survey; West of South Site	14/07/2022	20:01	Red Squirrel	1	mixed broadleaved/conifer woodland; feeding	AOD
	2022-12-19T11:40:11.816	Breeding Raptor Survey; 5Km Radius	15/07/2022	08:55	Meadow Pipit	38	bogs and wet grassland; foraging	KB
	2022-12-19T11:57:16.178	Breeding Raptor Survey; 5Km Radius	20/07/2022	12:10	Lesser Black-Backed Gull	3	conifer plantation and wet grassland; travelling	KB
	2022-12-19T12:53:15.058	Breeding Raptor Survey; 5Km Radius	20/07/2022	12:23	Lesser Black-Backed Gull	1	conifer plantation; travelling	KB
	2022-12-19T13:58:34.011	Breeding Raptor Survey; 5Km Radius	21/07/2022	08:05	Meadow Pipit	8	bogs; foraging (3x fledgelings)	KB
	2022-12-19T14:00:16.431	Breeding Raptor Survey; 5Km Radius	21/07/2022	08:11	Snipe	1	bogs; chipping	KB
	2022-08-11T10:21:00.236	Vantage Point Survey; VP2	11/08/2022	09:12	Golden Plover	1	montane heath; fly/call, flew low from heather called.likely migrant recently returned	AOD
	2022-08-11T10:22:08.523	Vantage Point Survey; VP2	11/08/2022	09:22	Snipe	1	montane heath; fly	AOD





## APPENDIX 2

### FIGURES



### Map Legend

-  VP Location
-  500m Buffer of Site
-  Site Boundary
-  VP Viewsheds



Drawing Title:

VP Locations and Viewsheds

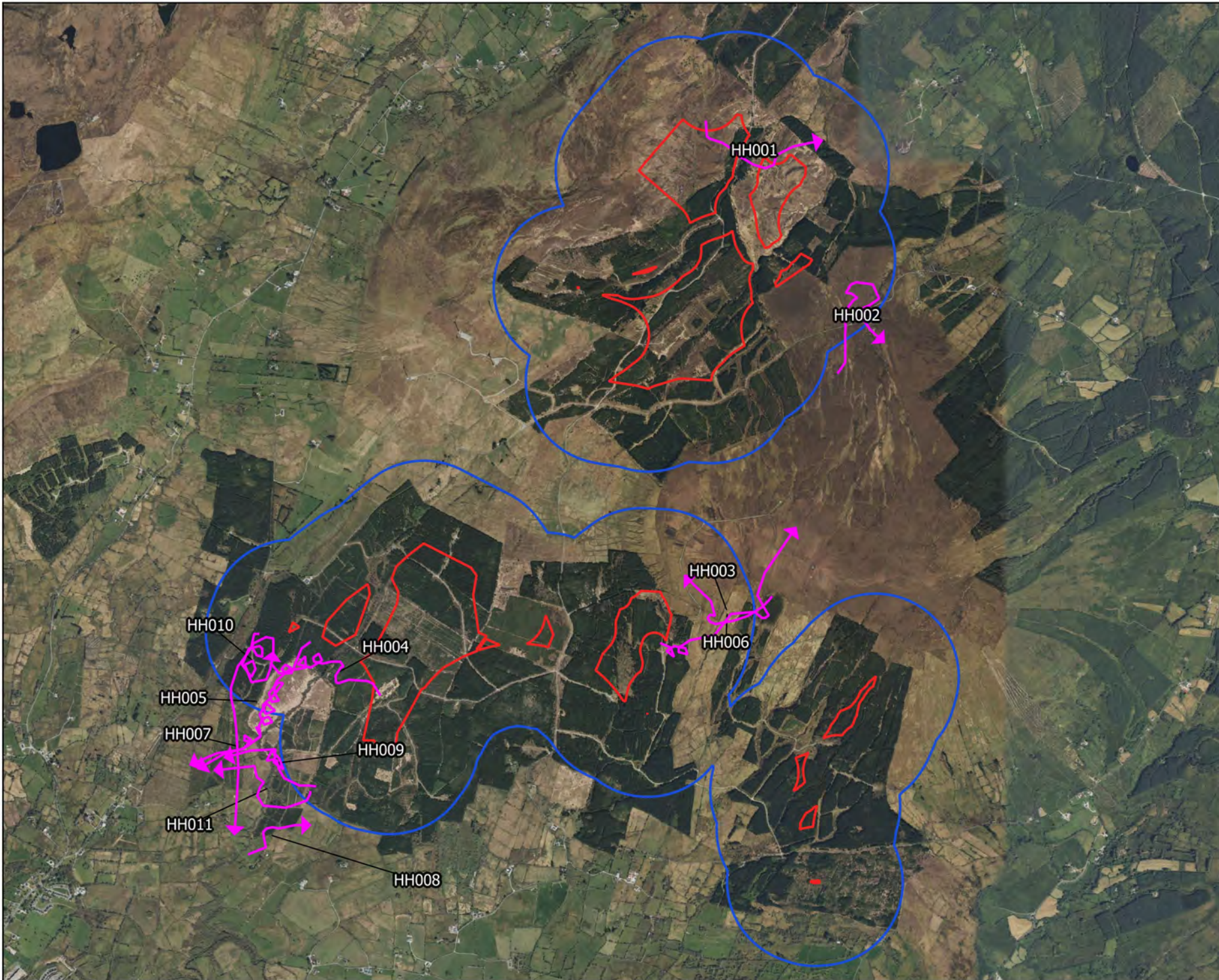
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Lissinagroagh




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AO'D	AO'D
Project No.	Drawing No.
200217-f	Fig 1.0
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Map Legend

-  500m Buffer of Site
-  Site Boundary
-  Observation Flightline



Drawing Title:

Hen harrier VP Observations

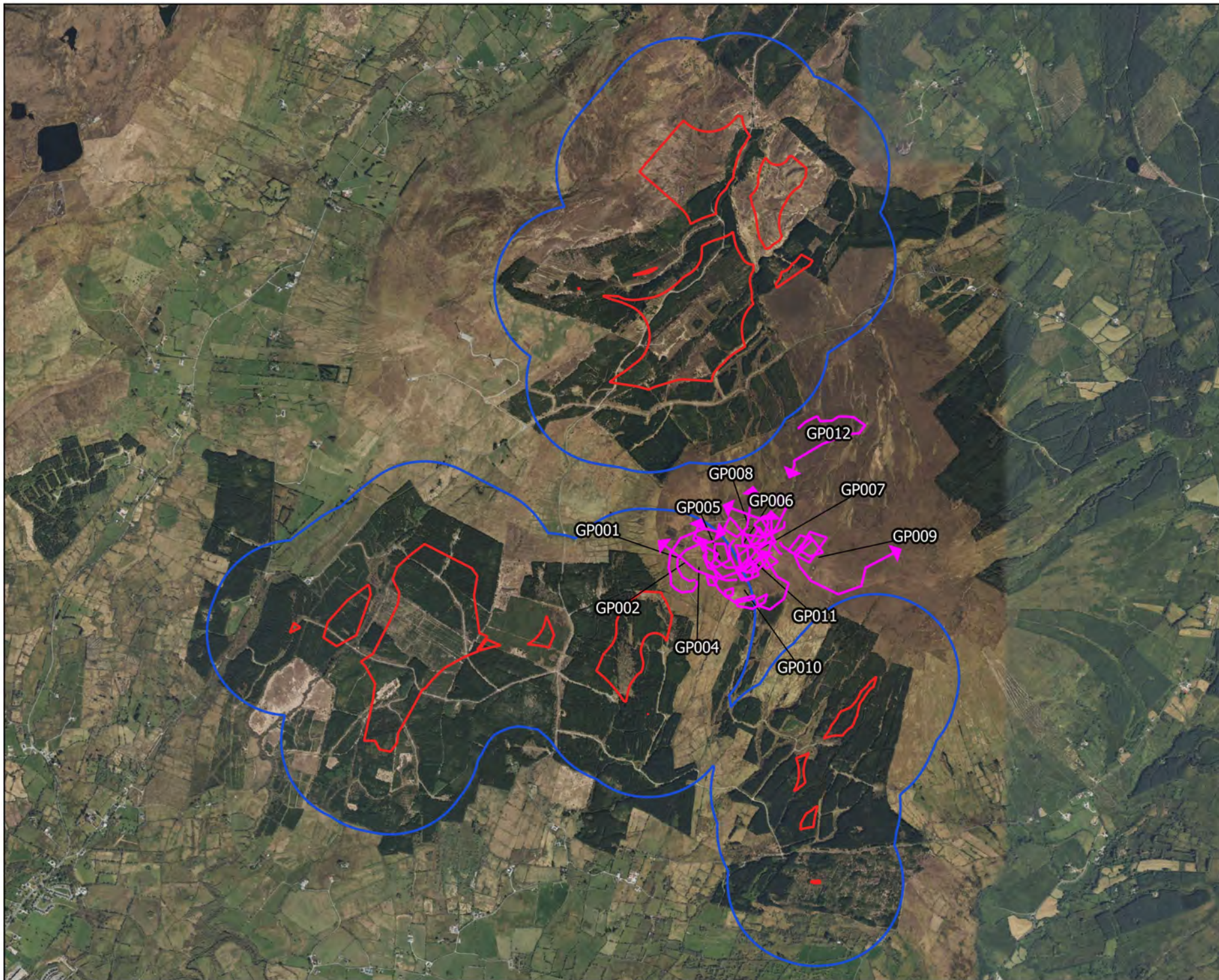
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### Map Legend

-  500m Buffer of Site
-  Site Boundary
-  Observation Flightline



Drawing Title:

Golden plover  
VP Observations

Project No.:

Lissinagroagh

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AO'D

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AO'D

Project No.:

200217-f

Drawing No.:

Fig 1.2

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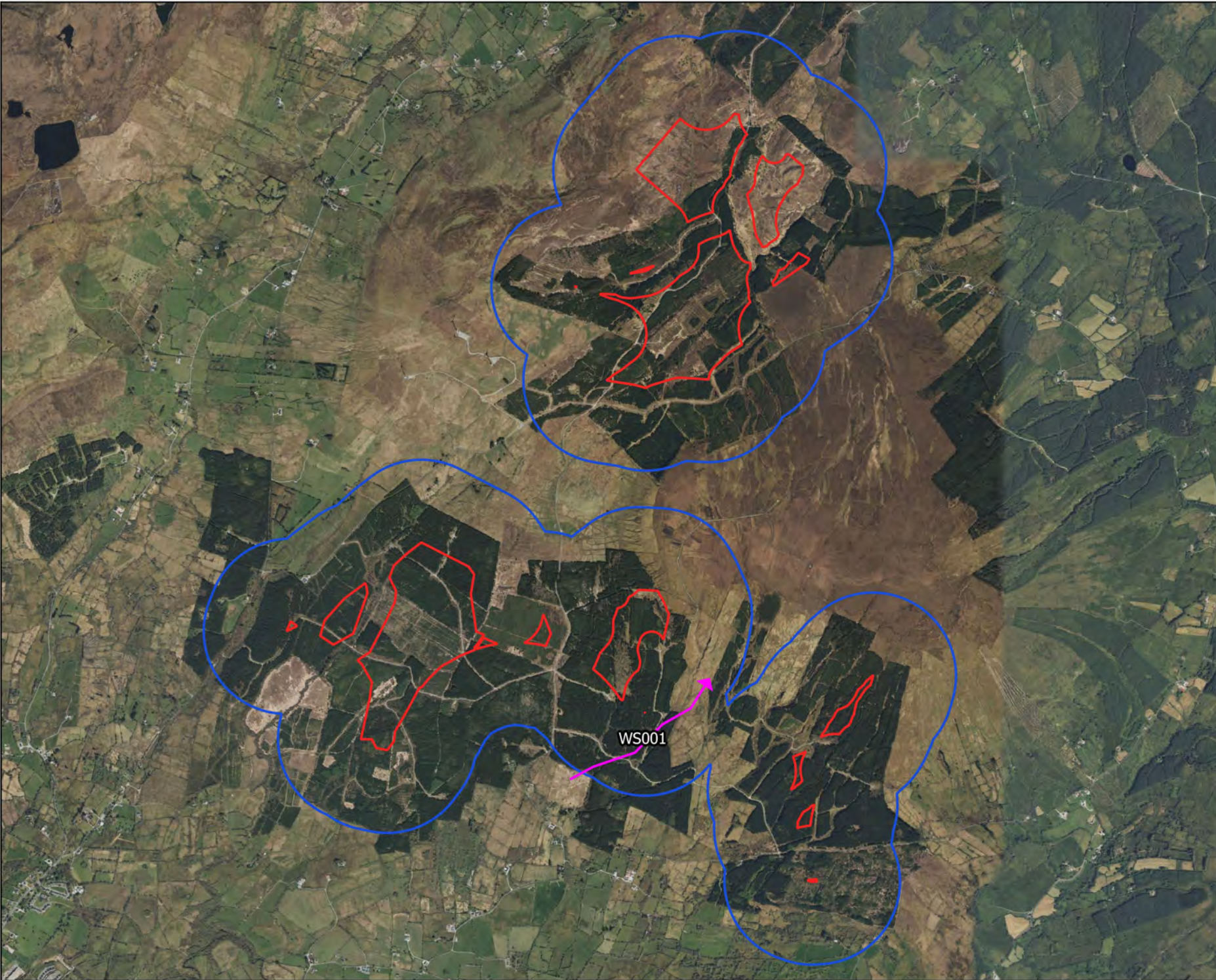
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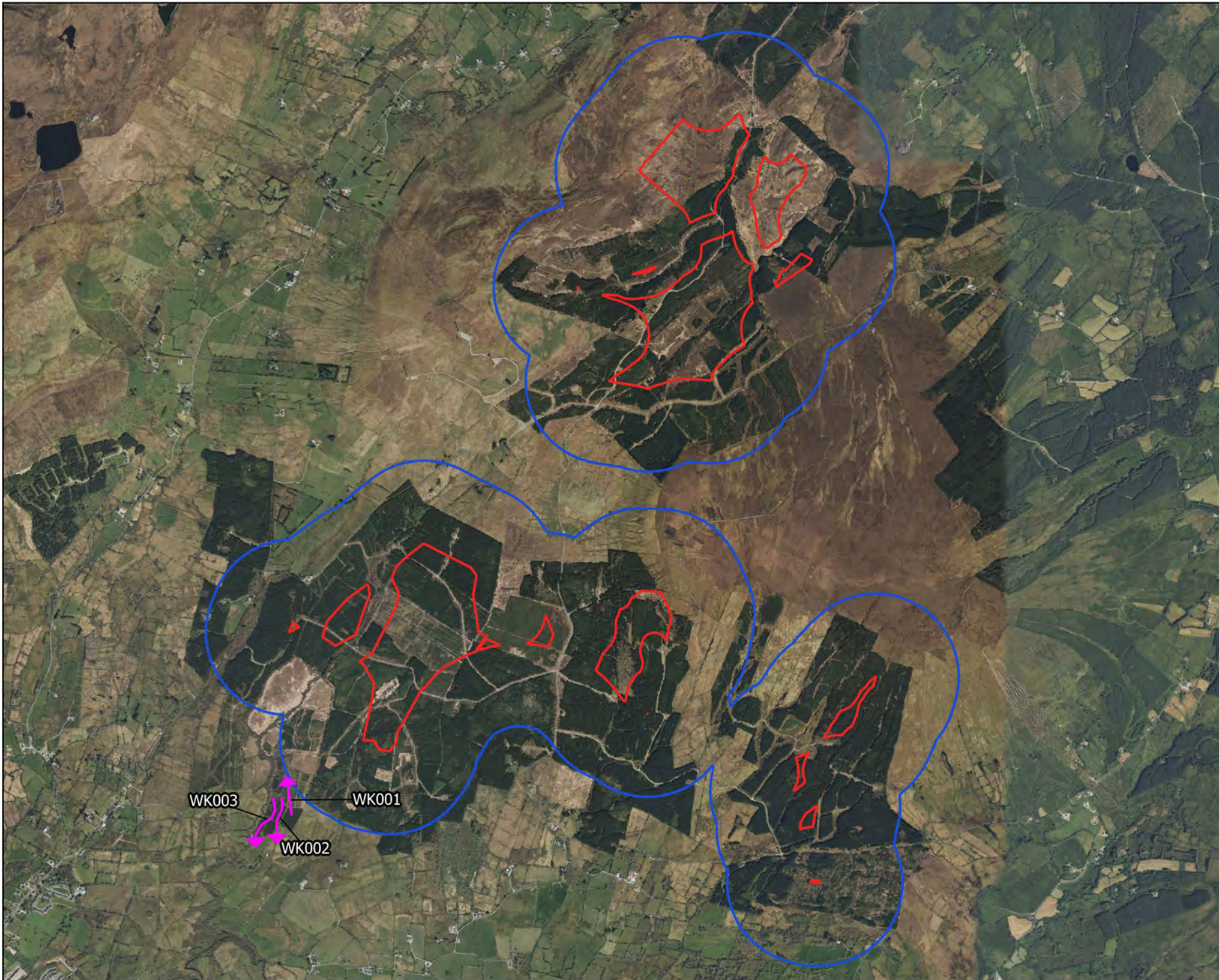
Map Legend

-  500m Buffer of Site
-  Site Boundary
-  Observation Flightline






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Project Title		Lissinagroagh	
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Project No.	Drawing No.		
200217-f	Fig 1.3		
Scale	Date		
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Map Legend

-  500m Buffer of Site
-  Site Boundary
-  Observation Flightline



Drawing Title

Woodcock  
VP Observations

Project Title

Lissinagroagh

Drawn By

AO'D

Checked By

AO'D

Project No.

200217-f

Drawing No.

Fig 1.4

Scale

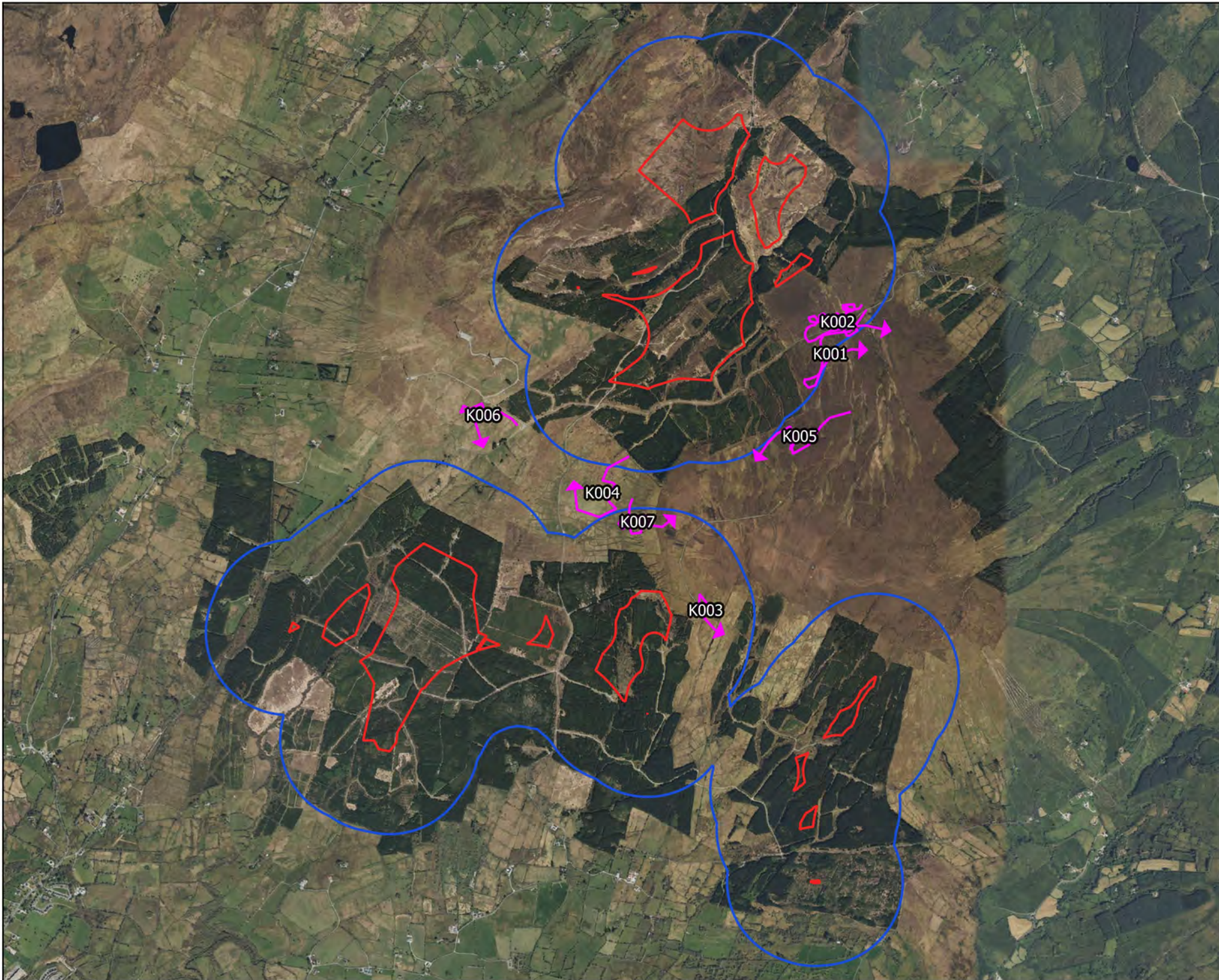
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### Map Legend

-  500m Buffer of Site
-  Site Boundary
-  Observation Flightline



Drawing Title:

Kestrel  
VP Observations

Project No.:

Lissinagroagh

Drawn By:

AO'D

Checked By:

AO'D

Project No.:

200217-f

Drawing No.:

Fig 1.5

Scale:

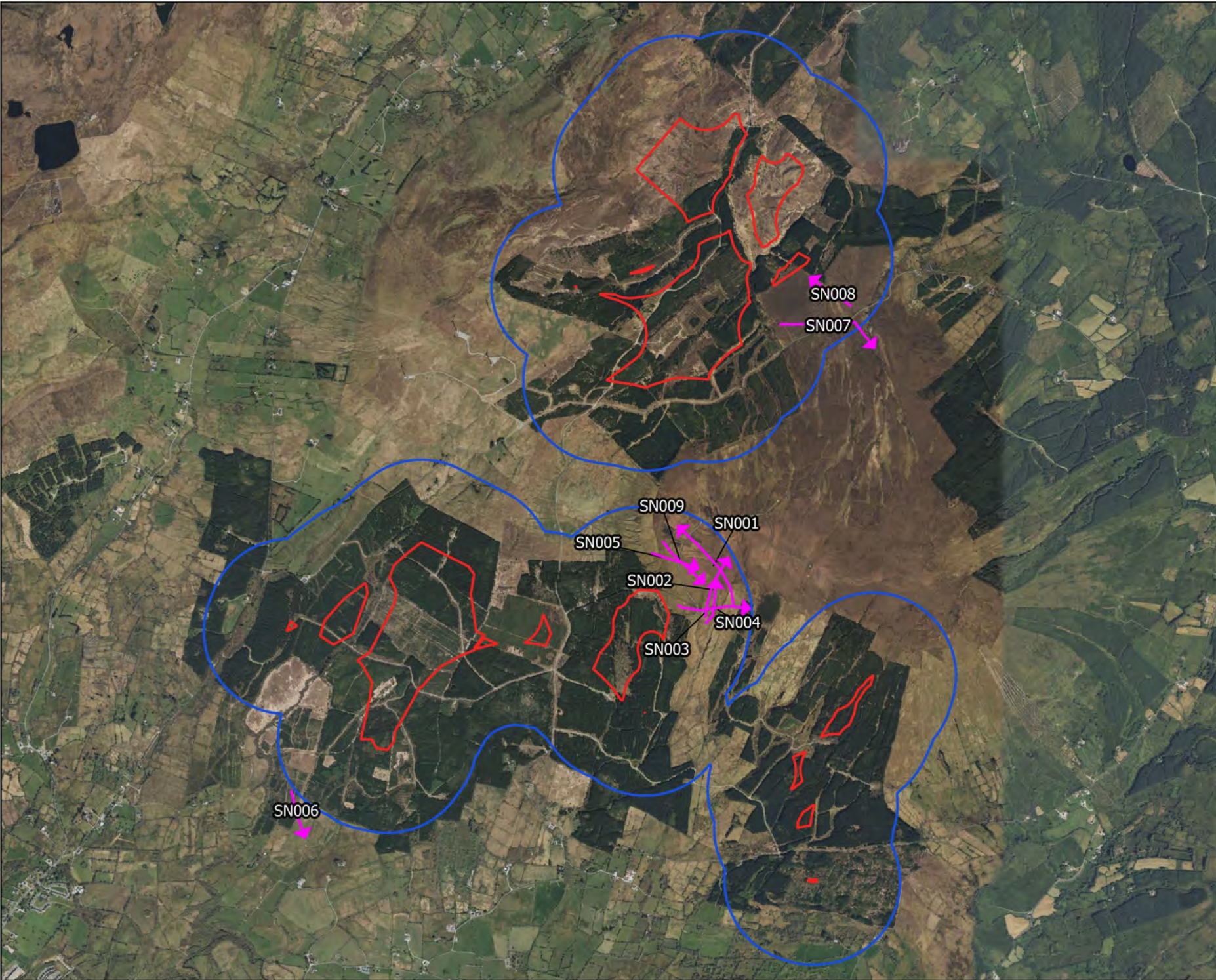
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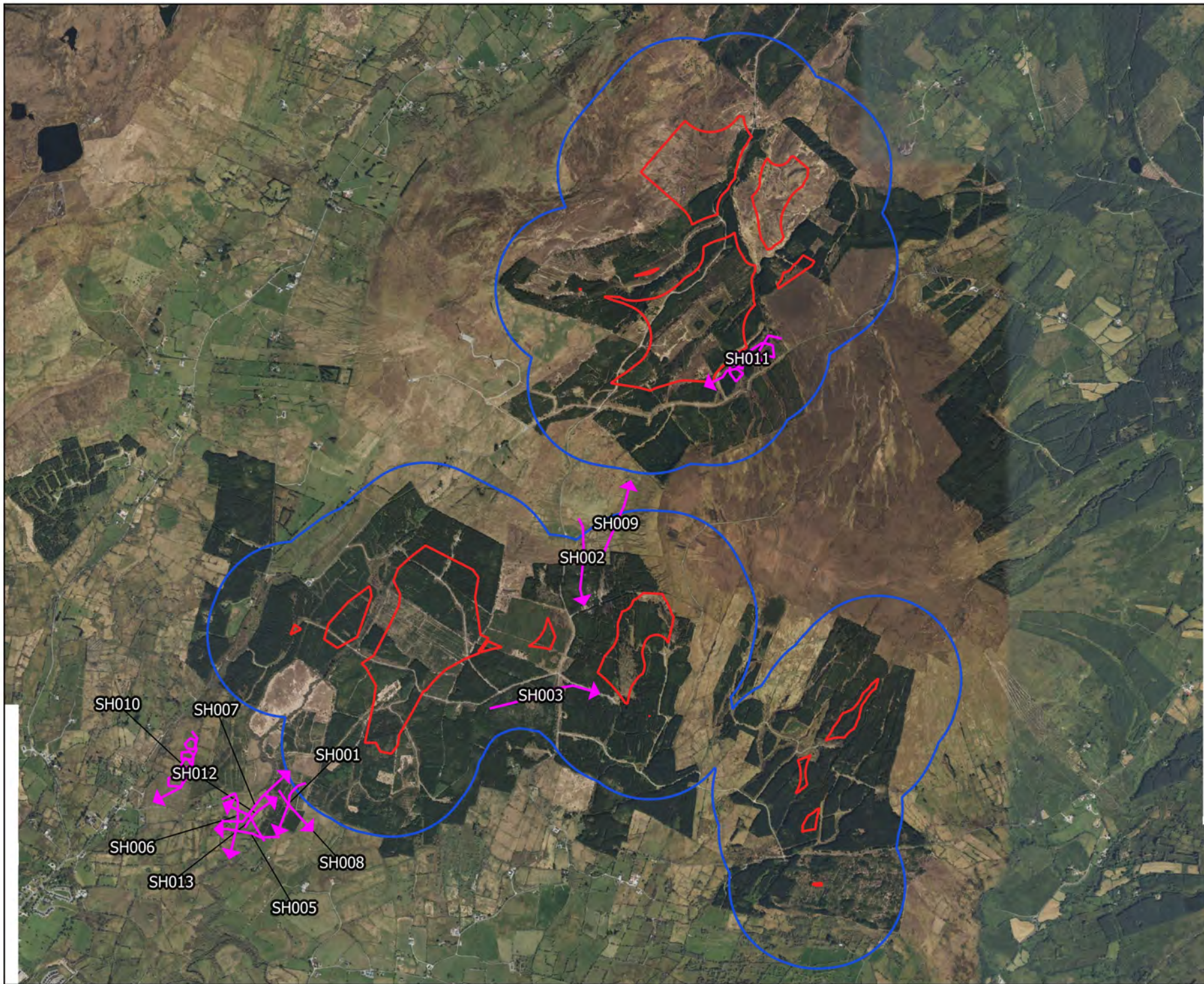
Map Legend

-  500m Buffer of Site
-  Site Boundary
-  Observation Flightline



Drawing Title		Snipe VP Observations	
Project Title			
Lissinagroagh			
Drawn By	Checked By		
AO'D	AO'D		
Project No.	Drawing No.		
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Scale	Date		
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### Map Legend

- 500m Buffer of Site
- Site Boundary
- ↗ Observation Flightline



Drawing Title:

Sparrowhawk  
VP Observations

Project No.:

Lissinagroagh

Drawn By:

AO'D

Checked By:

AO'D

Project No.:

200217-f

Drawing No.:

Fig 1.7

Scale:

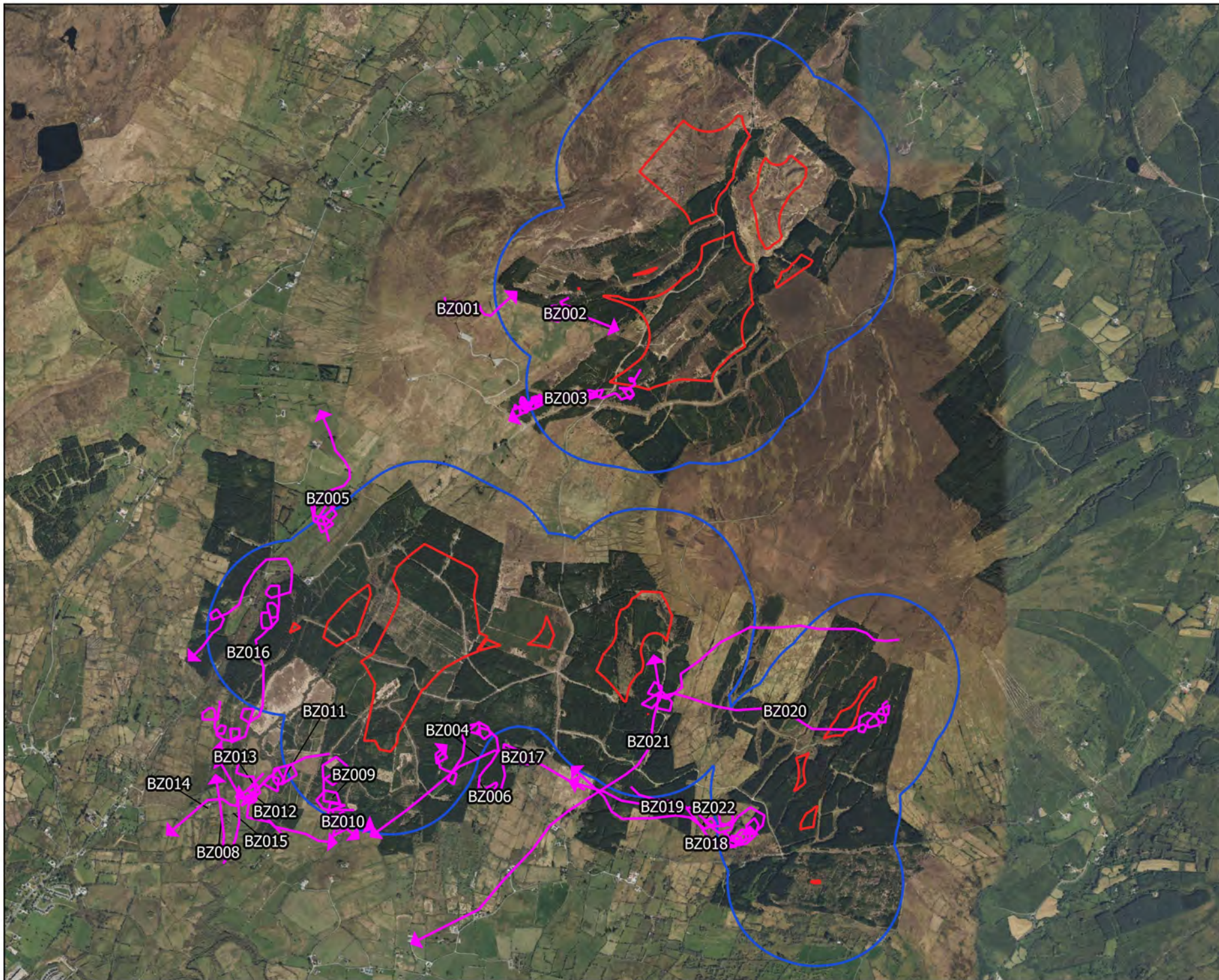
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Date:

25.04.23



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Map Legend

-  500m Buffer of Site
-  Site Boundary
-  Observation Flightline



Drawing Title

Buzzard  
VP Observations

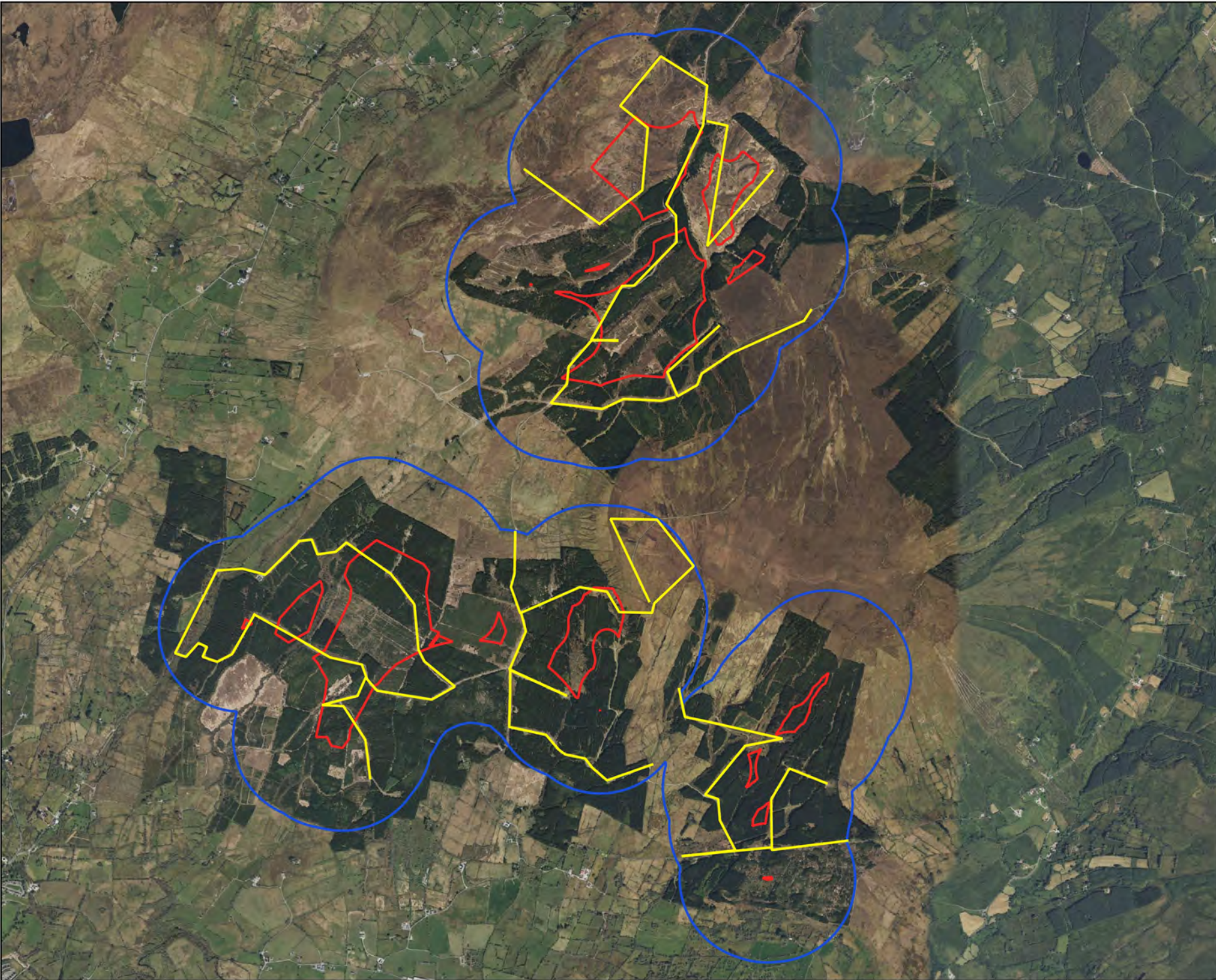
Project Title

Lissinagroagh

Drawn By	Checked By
AO'D	AO'D
Project No.	Drawing No.
200217-f	Fig 1.8
Scale	Date
1:30000	25.04.23



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**Map Legend**

- 500m Buffer of Site
- Site Boundary
- Walkover Transects



Drawing Title

Winter Walkover Transects

Project Title

Lissinagroagh




Drawn By	Checked By
AO'D	AO'D
Project No.	Drawing No.
200217-f	Fig 2.0
Scale	Date
1:30000	25.04.23

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Map Legend

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-  Site Boundary
-  Observation Flightline



Drawing Title:

Whooper swan  
Winter Walkover Observations

Project Title:

Lissinagroagh

Drawn By:

AO'D

Checked By:

AO'D

Project No.:

200217-f

Drawing No.:

Fig 2.1

Scale:

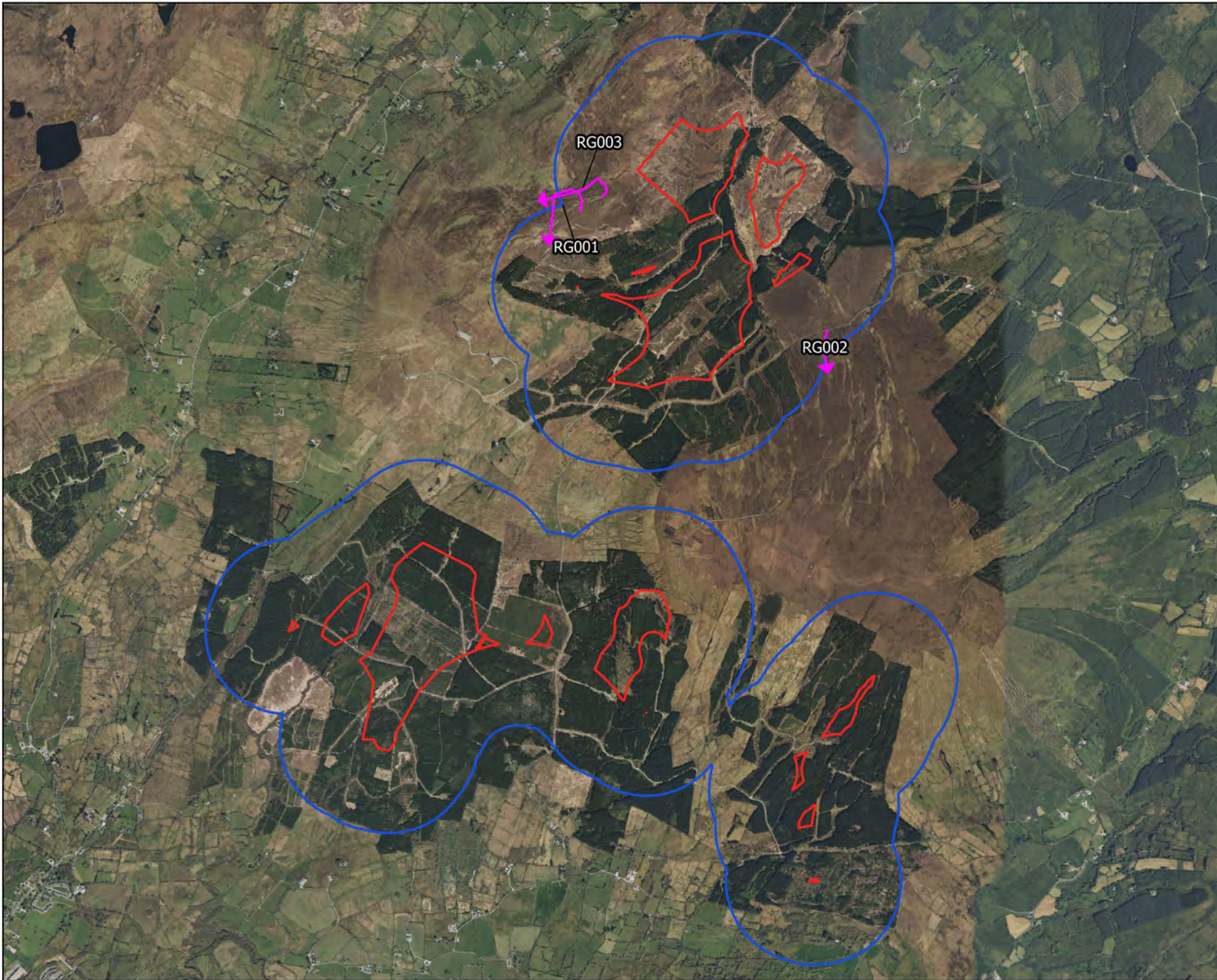
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Date:




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-  Site Boundary
-  Observation Flightline



Drawing Title:

**Red grouse  
Winter Walkover Observations**

Project Title:

**Lissinagroagh**

Drawn By:

AO'D

Checked By:

AO'D

Project No.:

200217-f

Drawing No.:

Fig 2.2

Scale:

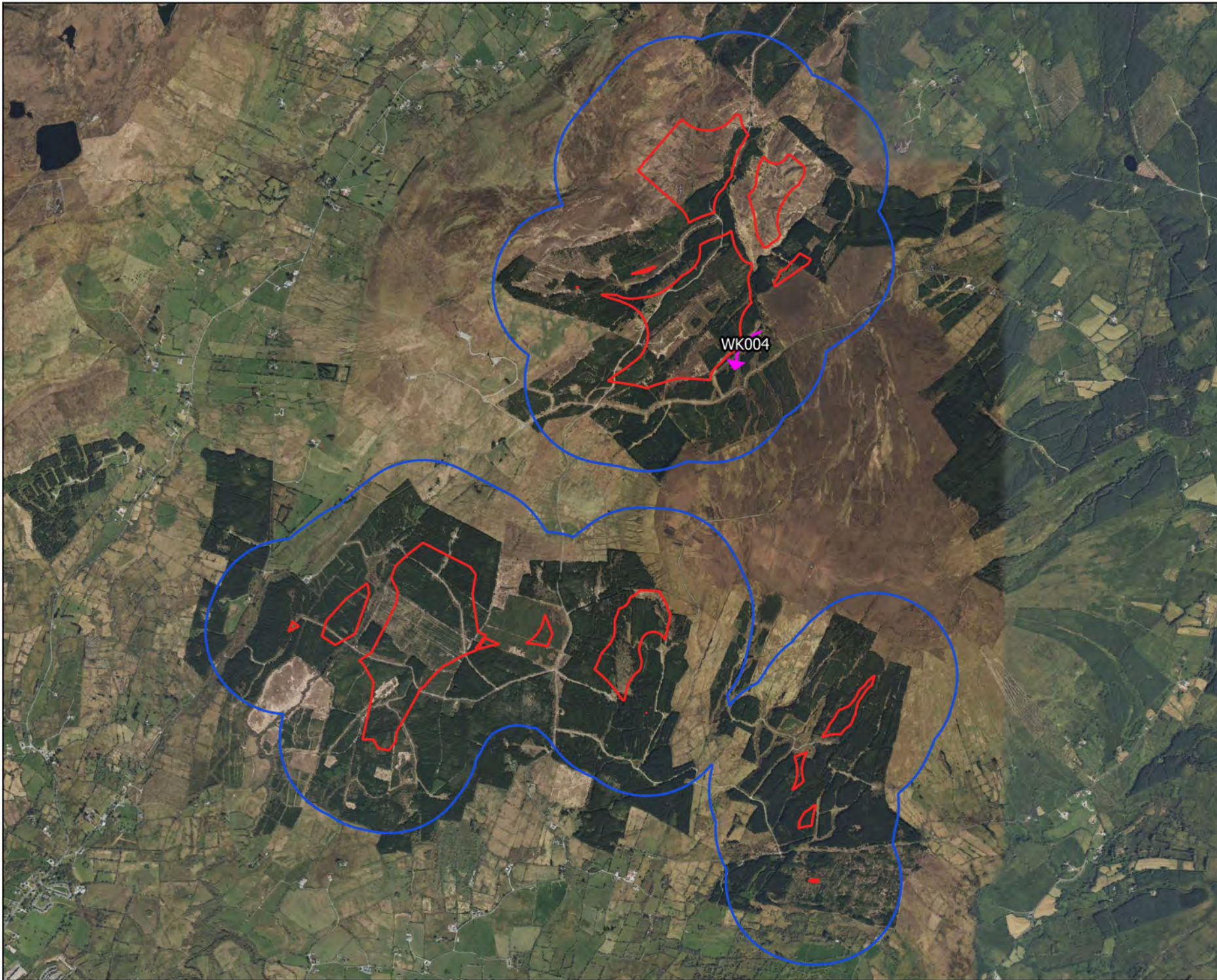
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Date:




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-  500m Buffer of Site
-  Site Boundary
-  Observation Flightline

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Drawing Title	
Woodcock Winter Walkover Observations	
Project Title	
Lissinagroagh	
Drawn By	Checked By
AO'D	AO'D
Project No.	Drawing No.
200217-f	Fig 2.3
Scale	Date
1:30000	25.04.23



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Map Legend

-  500m Buffer of Site
-  Site Boundary
-  Observation Flightline



Drawing Title:

**Kestrel**  
**Winter Walkover Observations**

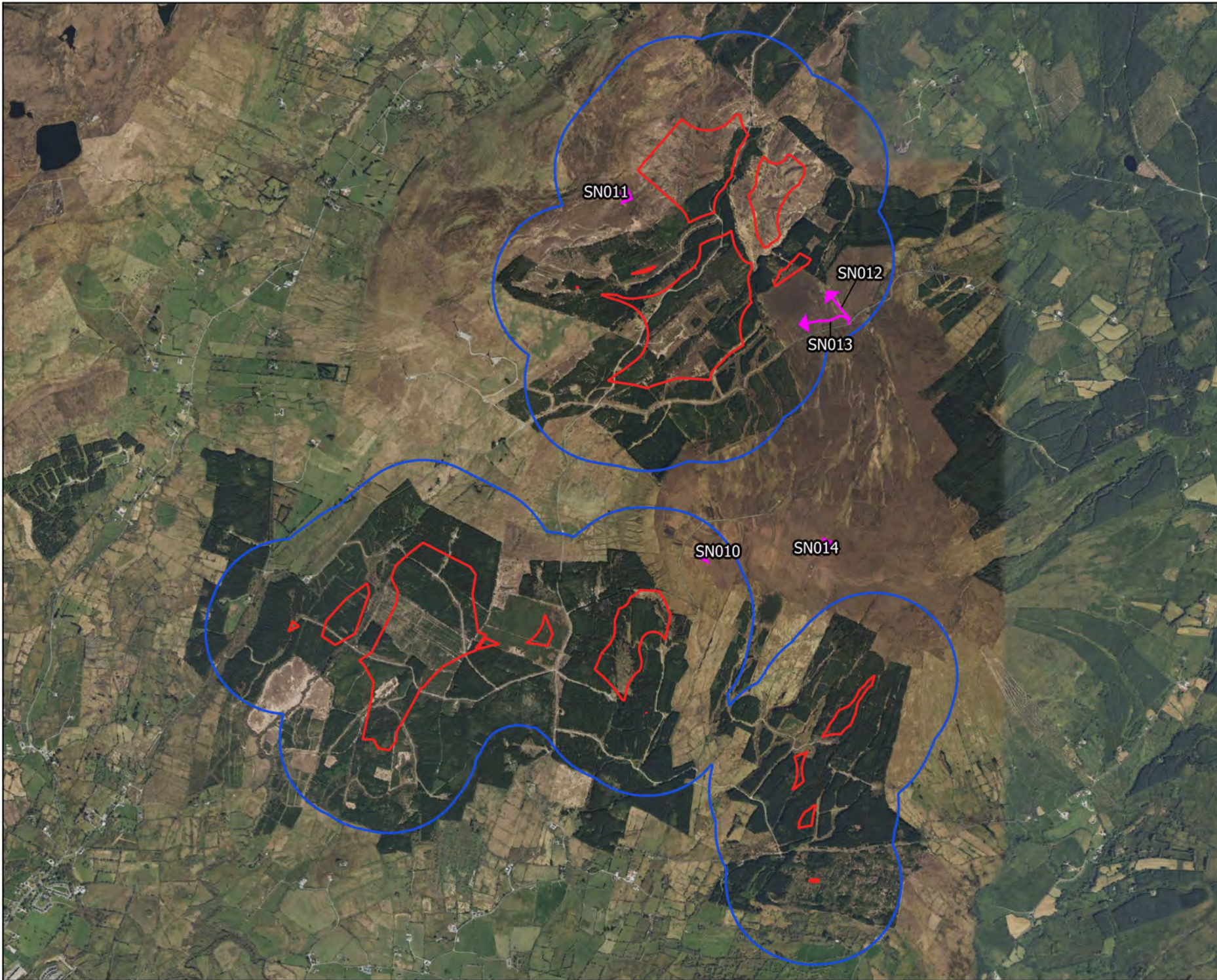
Project Title:

**Lissinagroagh**




Drawn By	Checked By
AO'D	AO'D
Project No.	Drawing No.
200217-f	Fig 2.4
Scale	Date
1:30000	25.04.23



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Map Legend

-  500m Buffer of Site
-  Site Boundary
-  Observation Flightline

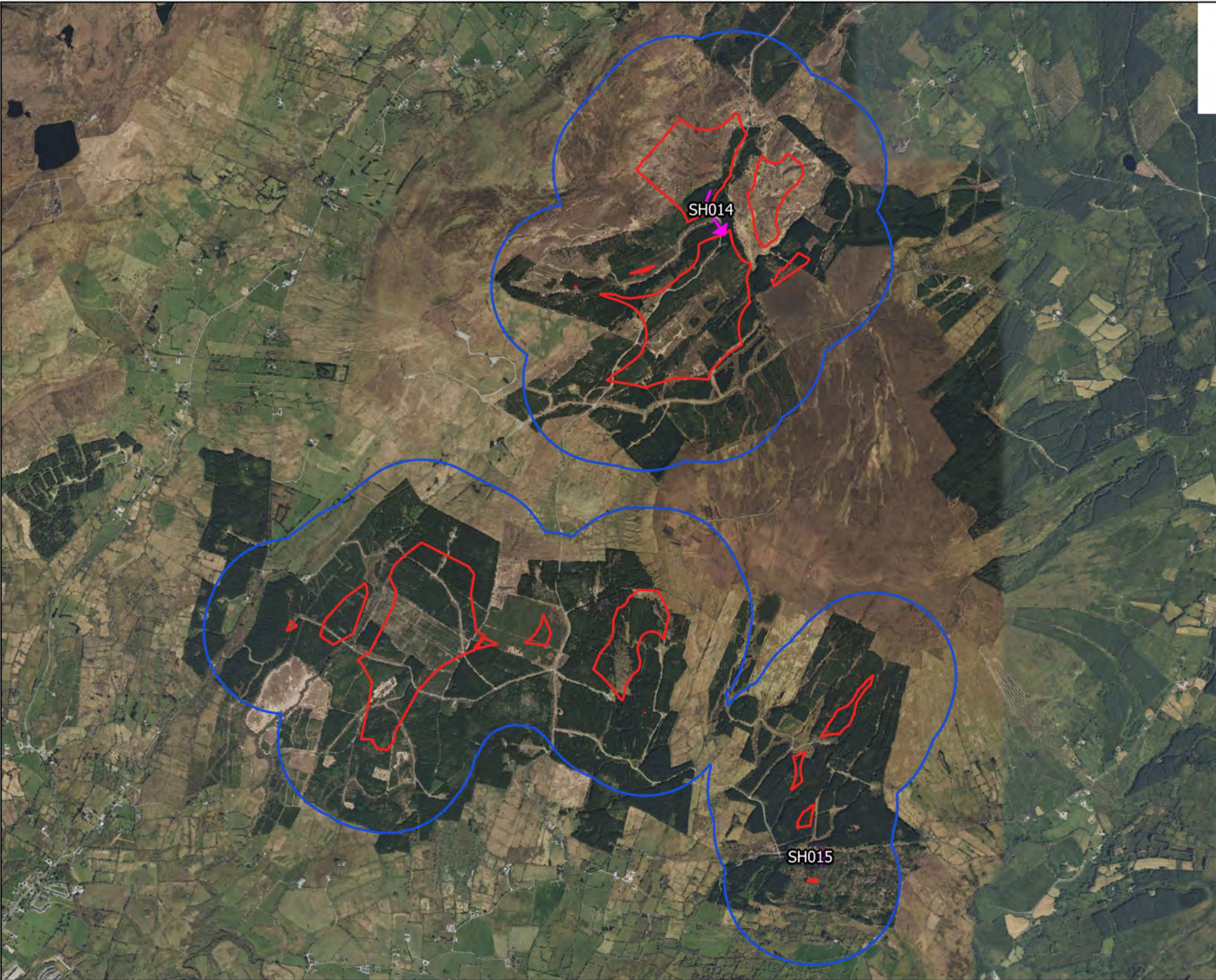
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Drawing Title	
Snipe Winter Walkover Observations	
Project Title	
Lissinagroagh	
Drawn By	Checked By
AO'D	AO'D
Project No.	Drawing No.
200217-f	Fig 2.5
Scale	Date
1:30000	25.04.23



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Map Legend

-  500m Buffer of Site
-  Site Boundary
-  Observation Flightline

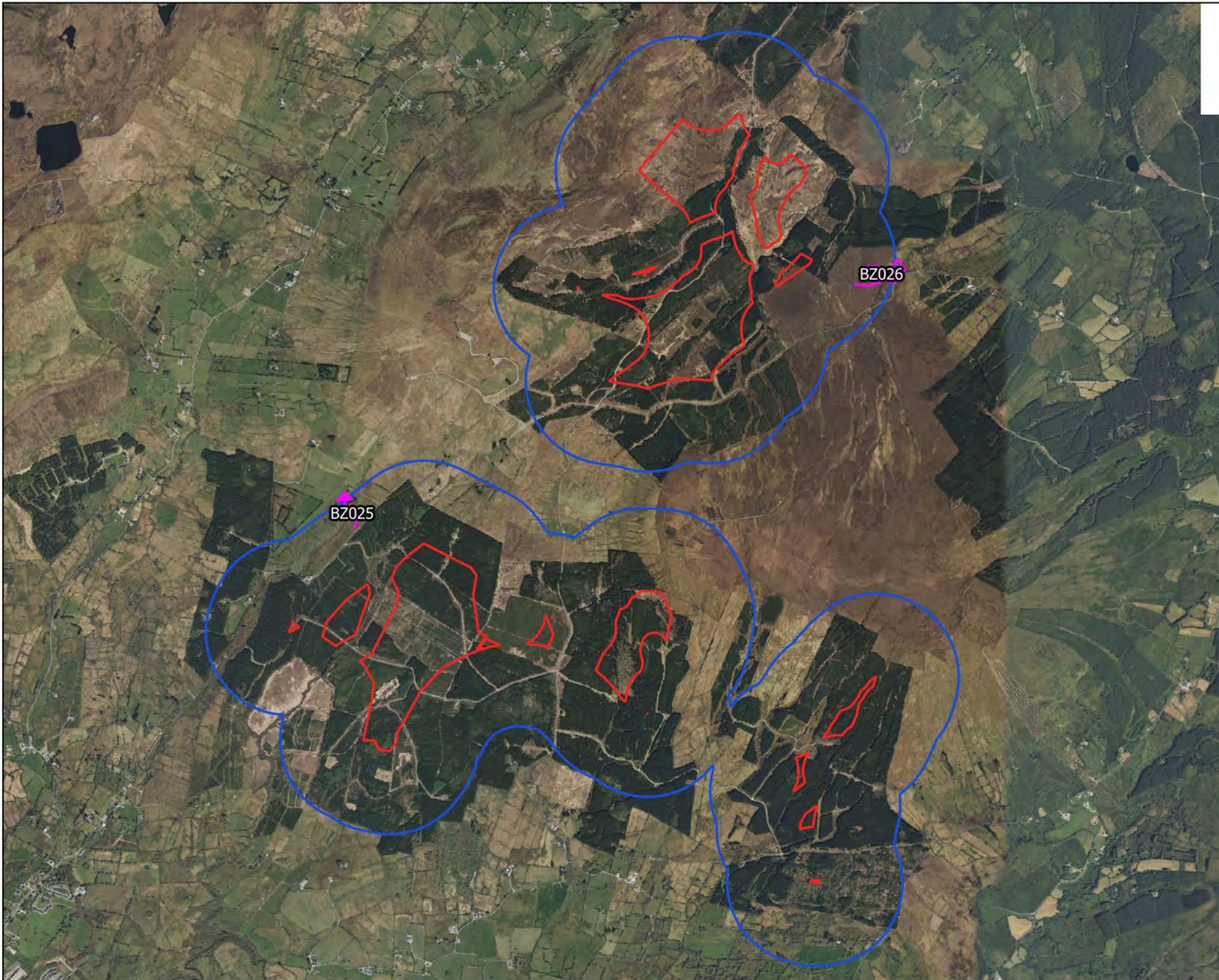


Drawing Title	
Sparrowhawk Winter Walkover Observations	
Project Title	
Lissinagroagh	
Drawn By	Checked By
AO'D	AO'D
Project No.	Drawing No.
200217-f	Fig 2.6
Scale	Date
1:30000	25.04.23



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Map Legend

- 500m Buffer of Site
- Site Boundary
- Observation Flightline



Drawing Title

**Buzzard  
Winter Walkover Observations**

Project Title

**Lissinagroagh**




Drawn By	Checked By
AO'D	AO'D
Project No.	Drawing No.
200217-f	Fig 2.7
Scale	Date
1:30000	25.04.23

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**Map Legend**

-  500m Buffer of Site
-  Site Boundary
-  HHVP Location



Drawing Title:

HHVP Locations

Project Title:

Lissinagroagh

Drawn By:

AO'D

Checked By:

AO'D

Project No.:

200217-f

Drawing No.:

Fig 3.0

Scale:

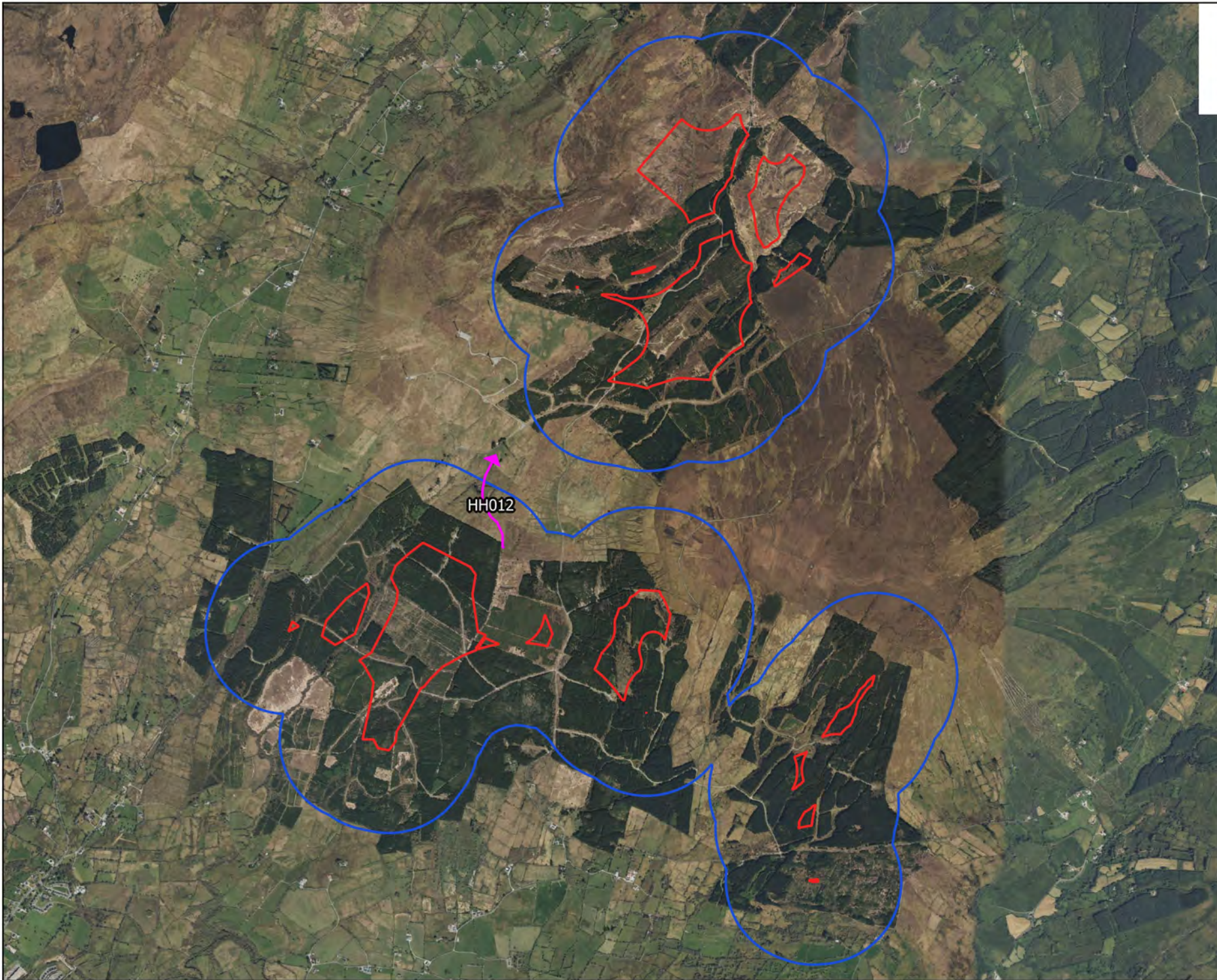
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Date:




25.04.23



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Map Legend

-  500m Buffer of Site
-  Site Boundary
-  Observation Flightline



Drawing Title

Hen harrier  
HHVP Observations

Project Title

Lissinagroagh

Drawn By

AO'D

Checked By

AO'D

Project No.

200217-f

Drawing No.

Fig 3.1

Scale

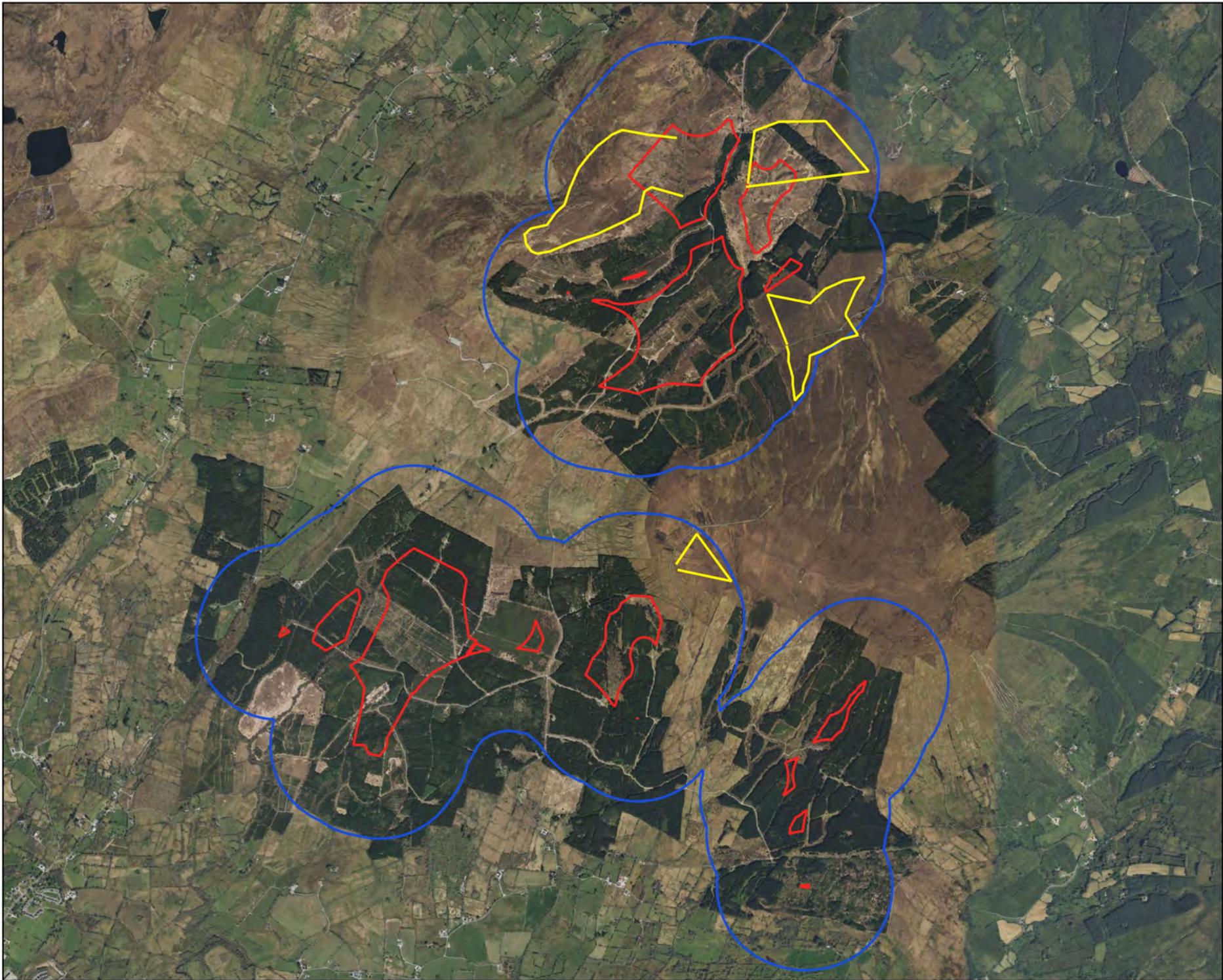
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**Map Legend**

- 500m Buffer of Site
- Site Boundary
- RG Transects

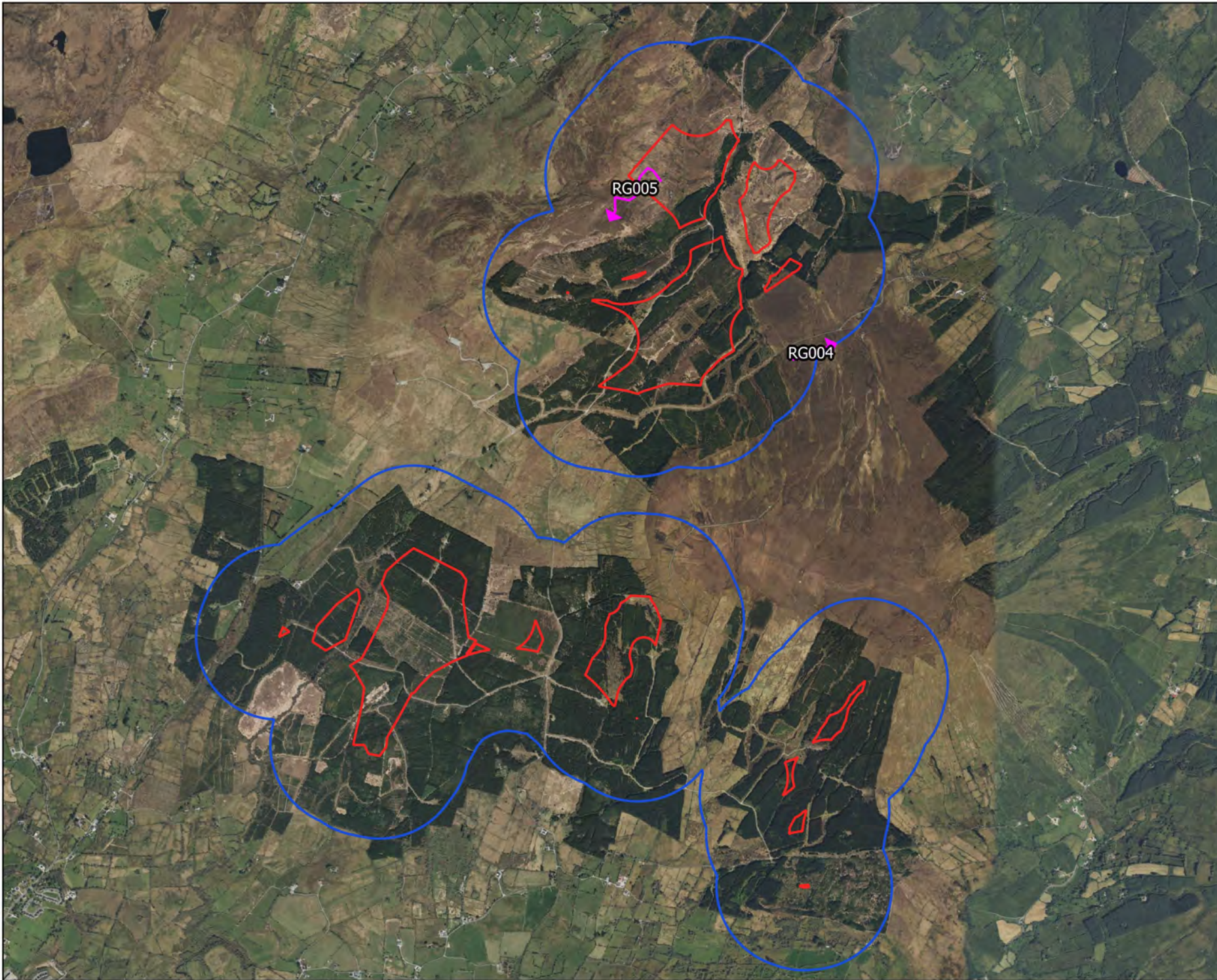


Drawing Title: **Red Grouse Survey Transects**

Project Title: **Lissinagroagh**

Drawn By: <b>AO'D</b>	Checked By: <b>AO'D</b>
Project No.: <b>200217-f</b>	Drawing No.: <b>Fig 4.0</b>
Scale: <b>1:30000</b>	Date: <b>25.04.23</b>

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### Map Legend

-  500m Buffer of Site
-  Site Boundary
-  Observation Flightline



Drawing Title:

**Red Grouse Survey  
Observations**

Project Title:

**Lissinagroagh**

Drawn By:

AO'D

Checked By:

AO'D

Project No.:

200217-f

Drawing No.:

Fig 4.1

Scale:

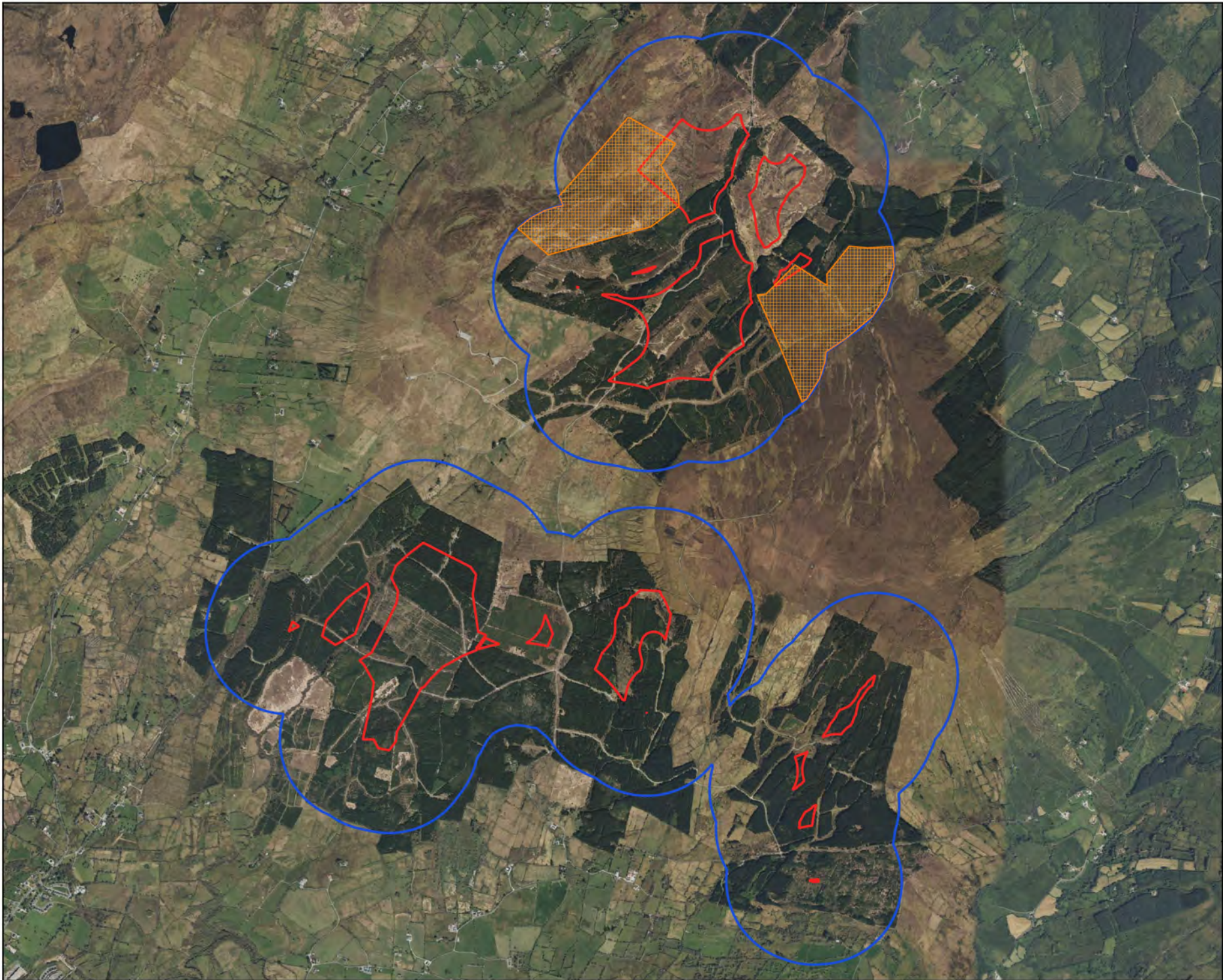
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Map Legend

-  500m Buffer of Site
-  Site Boundary
-  RG Territory(Suitbale habitat buffered)



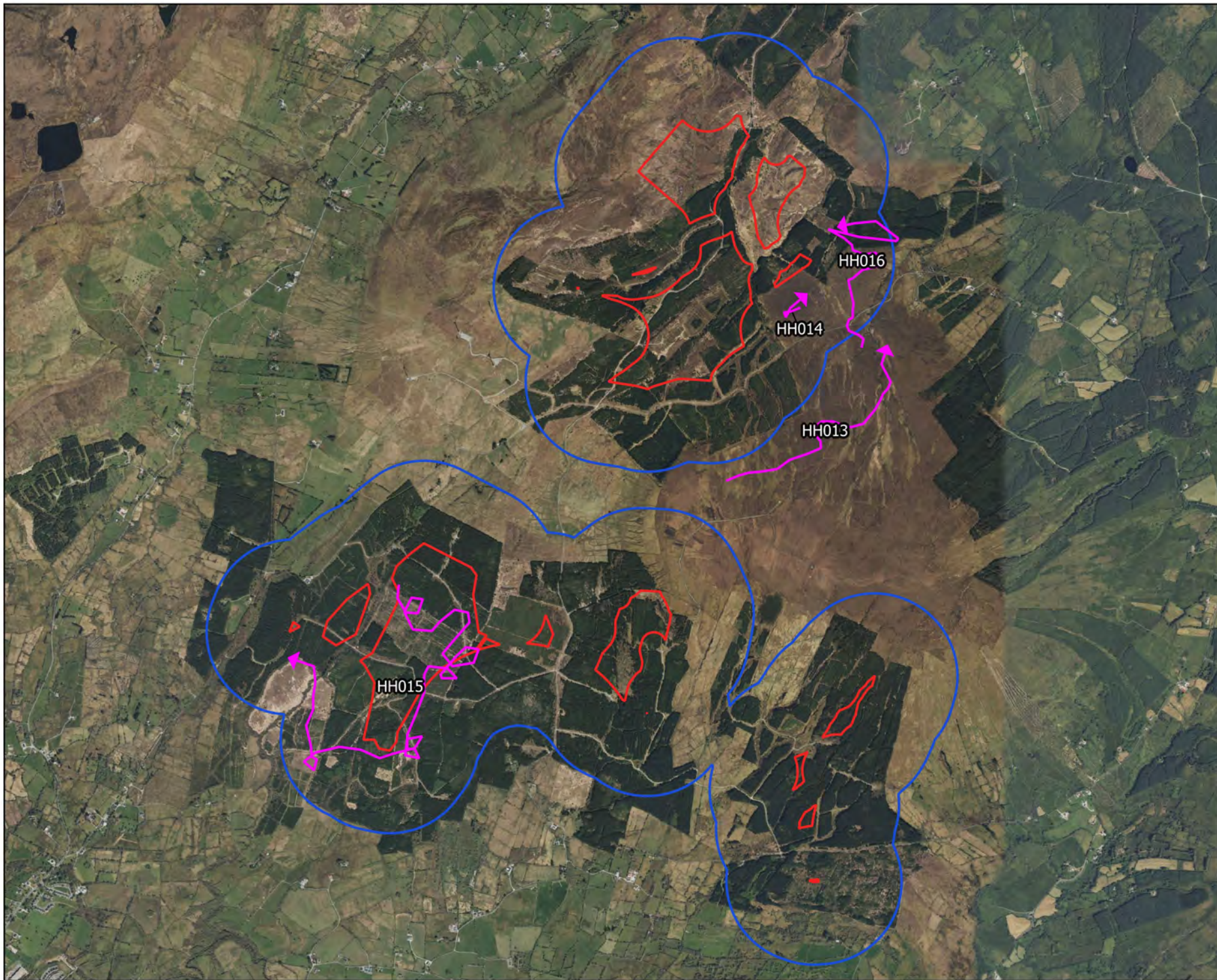
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**Red grouse Territories**

Project Title:  
**Lissinagroagh**

Drawn By	Checked By
AO'D	AO'D
Project No.	Drawing No.
200217-f	Fig 4.1.1
Scale	Date
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Map Legend

-  500m Buffer of Site
-  Site Boundary
-  Observation Flightline



Drawing Title

Hen harrier  
Incidental Observations

Project Title

Lissinagroagh

Drawn By

AO'D

Checked By

AO'D

Project No.

200217-f

Drawing No.

Fig 5.0

Scale

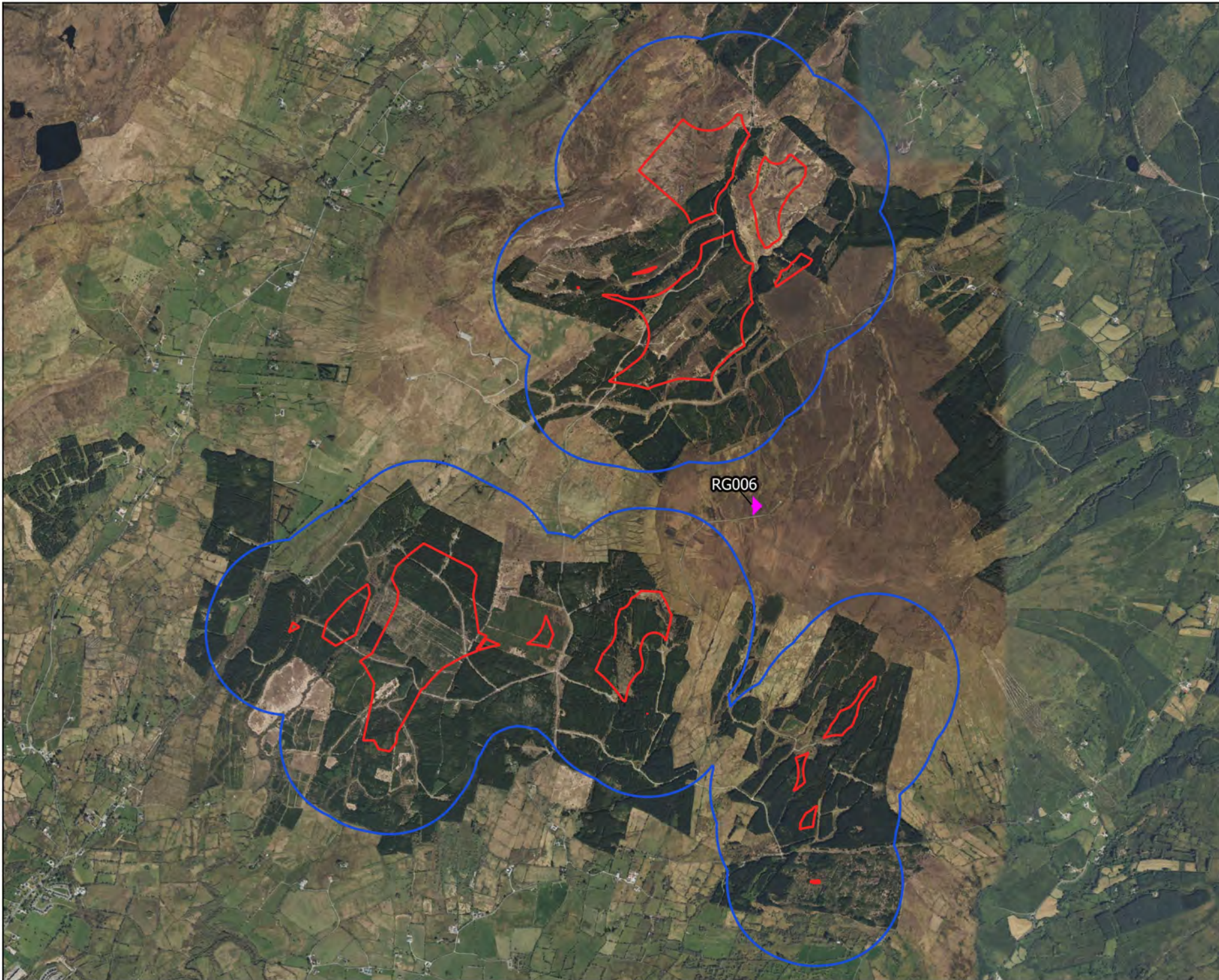
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Date




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Map Legend

-  500m Buffer of Site
-  Site Boundary
-  Observation Flightline



Drawing Title

Red grouse  
Incidental Observations

Project Title

Lissinagroagh

Drawn By

AO'D

Checked By

AO'D

Project No.

200217-f

Drawing No.

Fig 5.1

Scale

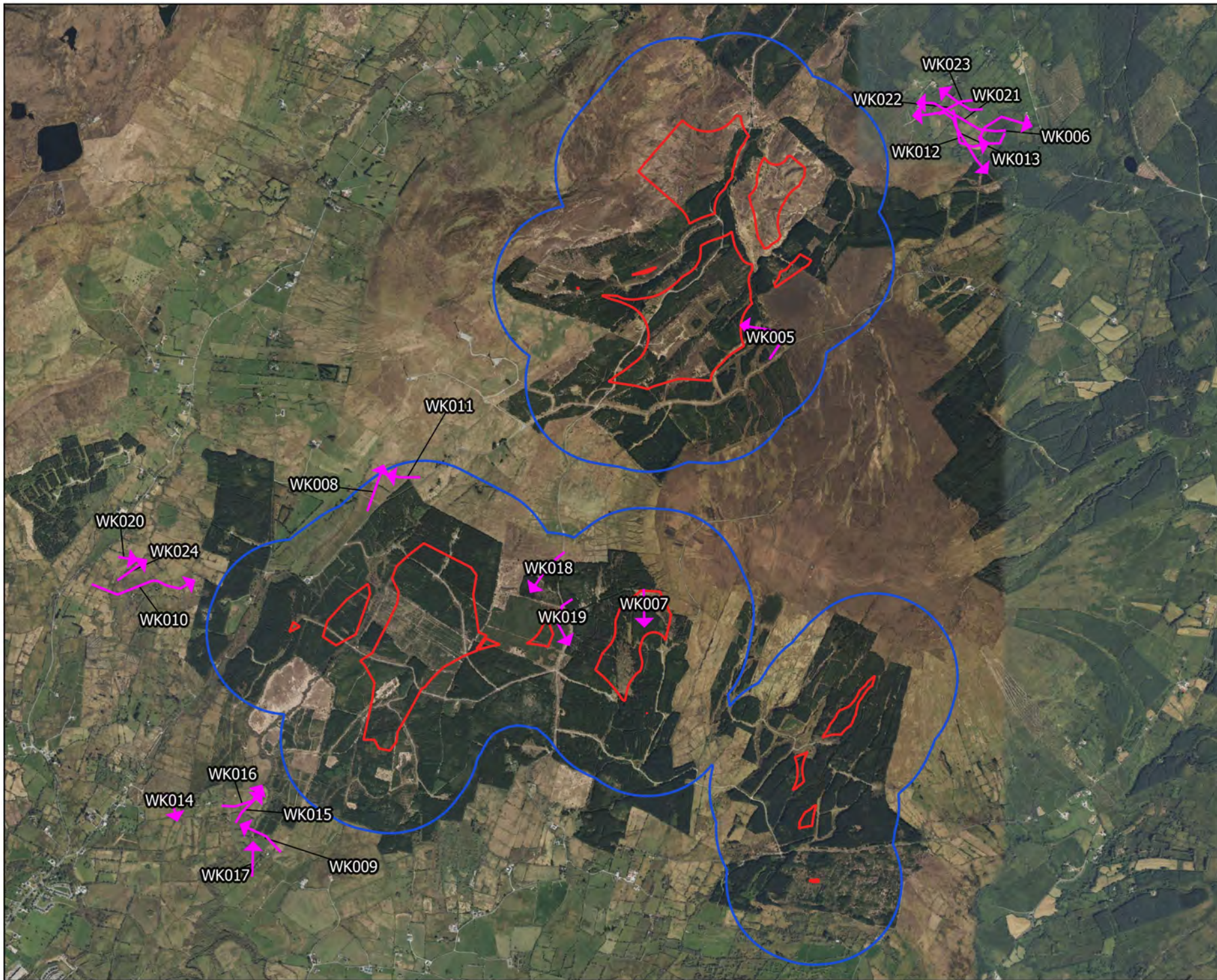
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Map Legend

- 500m Buffer of Site
- Site Boundary
- Observation Flightline



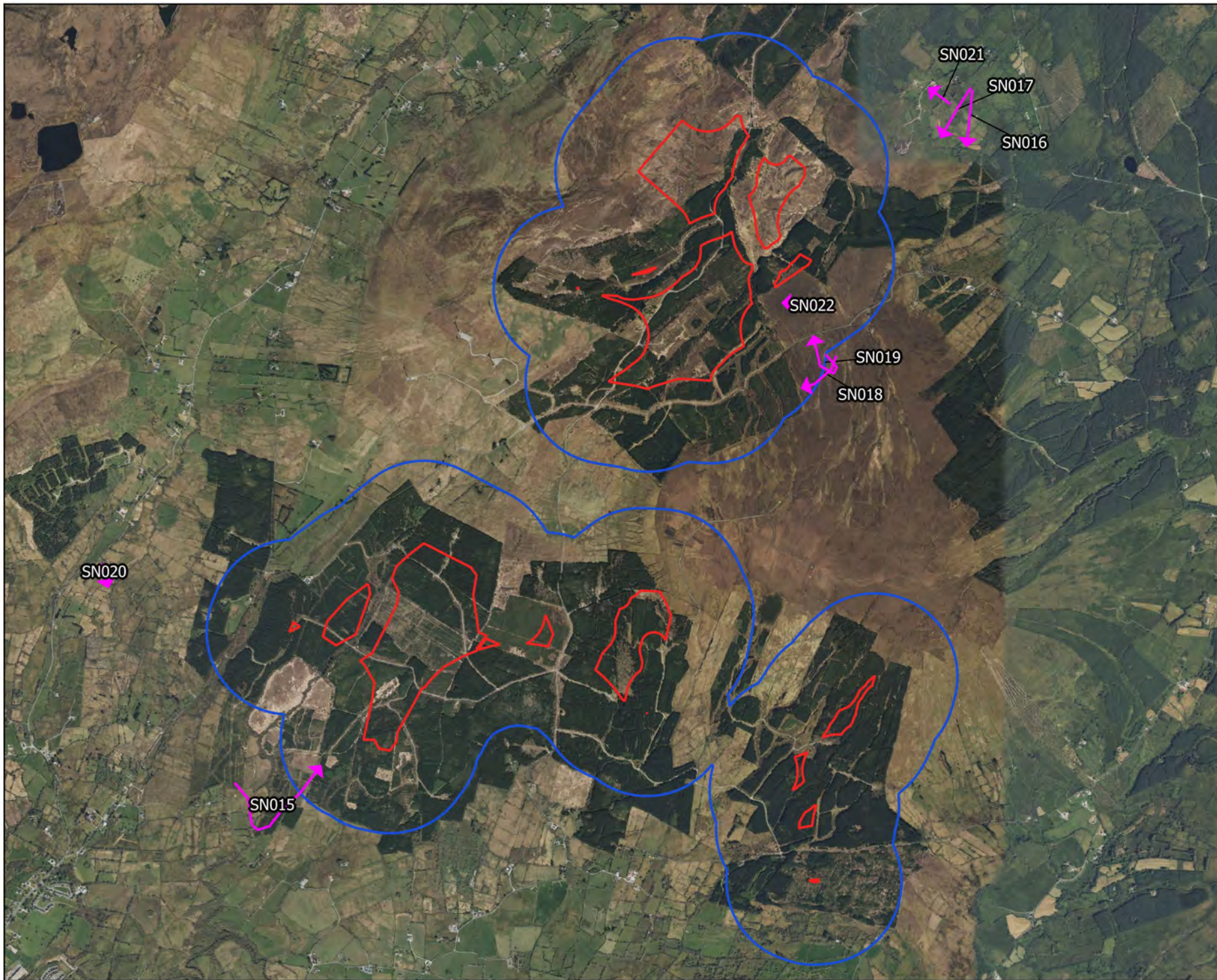
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Woodcock Incidental Observations	
Project Title	
Lissinagroagh	
Drawn By	Checked By
AO'D	AO'D
Project No.	Drawing No.
200217-f	Fig 5.2
Scale	Date
1:30000	25.04.23

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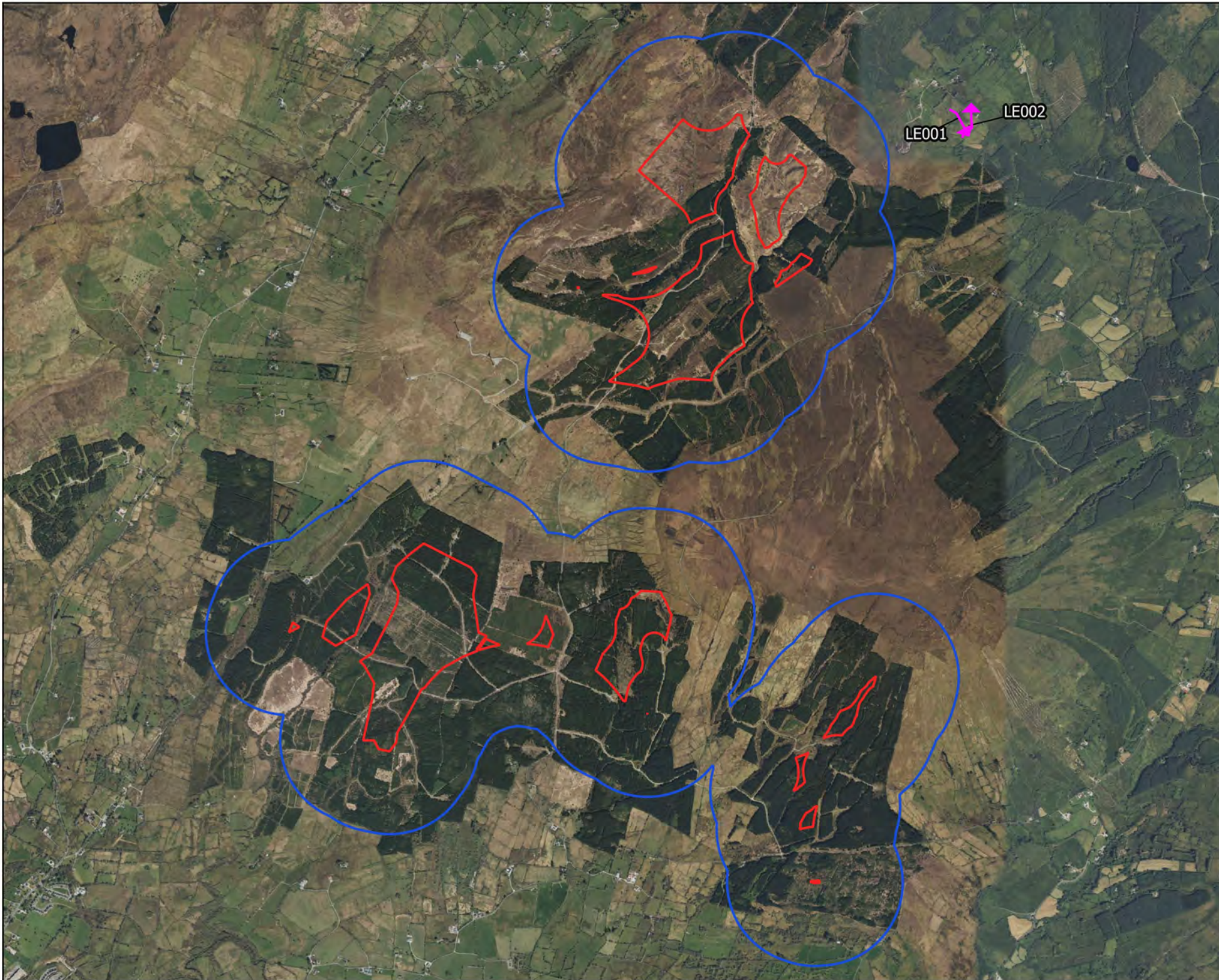
- 500m Buffer of Site
- Site Boundary
- ↔ Observation Flightline






Drawing Title	
Snipe Incidental Observations	
Project Title	
Lissinagroagh	
Drawn By	Checked By
AO'D	AO'D
Project No.	Drawing No.
200217-f	Fig 5.3
Scale	Date
1:30000	25.04.23

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Map Legend

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-  Site Boundary
-  Observation Flightline

LE001 LE002



Drawing Title

Long eared owl  
Incidental Observations

Project Title

Lissinagroagh

Drawn By

AO'D

Checked By

AO'D

Project No.

200217-f

Drawing No.

Fig 5.4

Scale

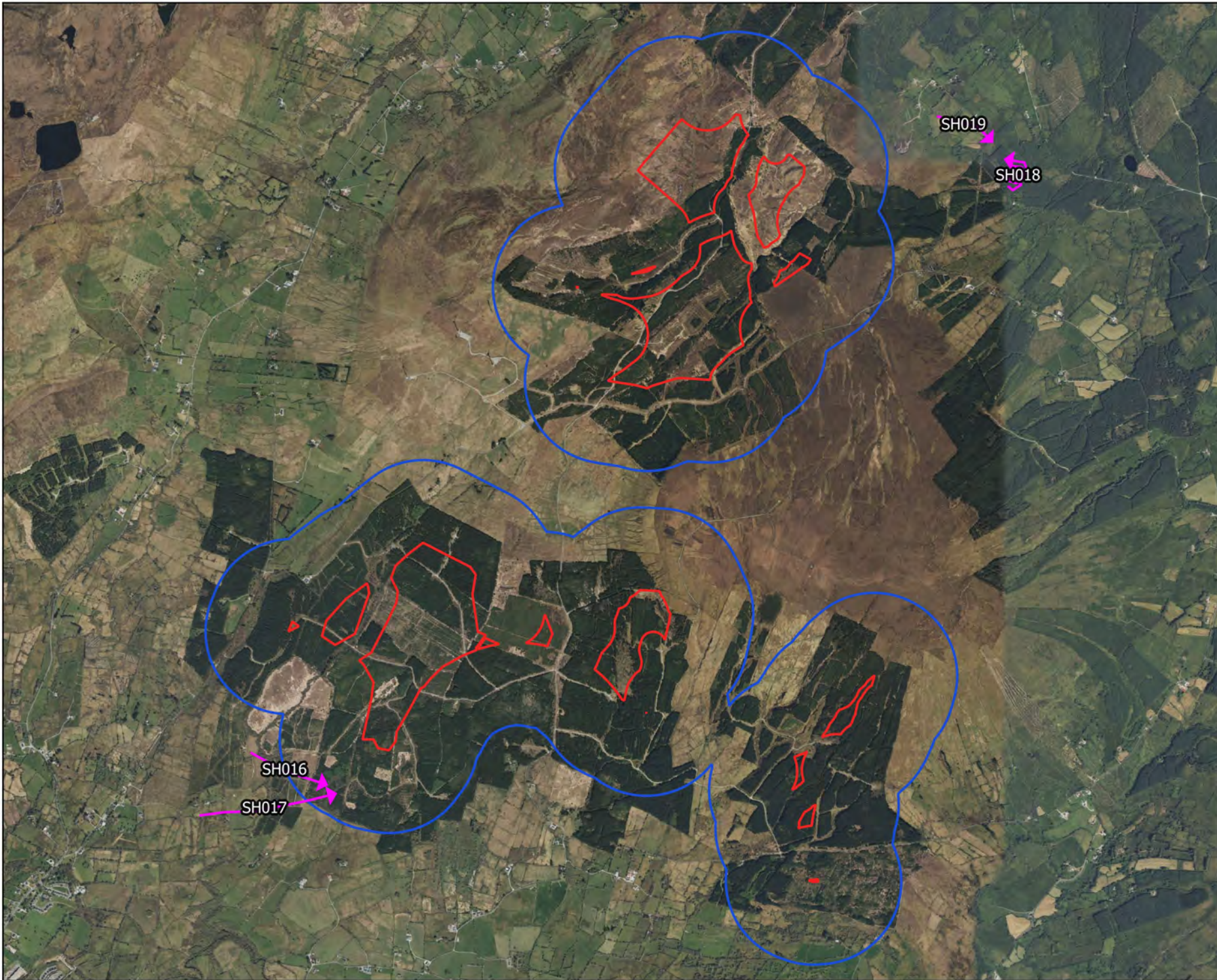
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Date

25.04.23



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Map Legend

- 500m Buffer of Site
- Site Boundary
- ➔ Observation Flightline



Drawing Title

Sparrowhawk  
Incidental Observations

Project Title

Lissinagroagh

Drawn By

AO'D

Checked By

AO'D

Project No.

200217-f

Drawing No.

Fig 5.5

Scale

1:30000

Date




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Map Legend

-  500m Buffer of Site
-  Site Boundary
-  Observation Flightline



Drawing Title

**Buzzard  
Incidental Observations**

Project Title

**Lissinagroagh**

Drawn By

AO'D

Checked By

AO'D

Project No.

200217-f

Drawing No.

Fig 5.6

Scale

1:30000

Date

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