

Breeding Bird Survey Report 2020

Lissinagroagh Wind Farm,
Co. Leitrim





DOCUMENT DETAILS

Client: **FuturEnergy Ireland**

Project Title: **Lissinagroagh Wind Farm, Co. Leitrim**

Project Number: **200217-a**

Document Title: **Breeding Bird Survey Report 2020**

Document File Name: **Lissinagroagh Breeding Season 2020 Report - F - 2025.01.08 - 200217-a**

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Rev	Status	Date	Author(s)	Approved By
01	Draft	16/09/2024	ZOC	PC
02	Draft	21/11/2024	ZOC	PC
03	Final	08/01/2025	ZOC	PM

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1. SUMMARY

Ornithological surveys have been conducted at the site of Lissinagroagh Wind Farm, Co. Leitrim since September 2017. This report outlines the findings from surveys completed during the 2020 breeding season from April 2020 to September 2020. The following surveys were undertaken:

- > Vantage Point Surveys
- > Breeding Walkover Surveys
- > Breeding Raptor Surveys
- > Breeding Woodcock Surveys

The key observations at the site involved nesting hen harrier. There were two confirmed nests located on the wind farm site. At least one chick fledged from one of the nests and while a second nest was confirmed, there was no evidence of fledged chicks from that nest.

Breeding territories were also identified for kestrel, snipe, woodcock, buzzard and sparrowhawk on, or within 500m of, the wind farm site. A possible red grouse breeding territory was identified within 500m of the site.

2. INTRODUCTION

MKO was appointed to carry out bird surveys at Lissinagroagh Wind Farm, Co. Leitrim for the breeding season 2020. This report describes the ornithological survey methods employed and survey data collected at Lissinagroagh Wind Farm, Co. Leitrim for the period from April 2020 to September 2020 inclusive.

2.1 Site Description

The site is located 3km northeast of Manerhamilton (Grid Ref: G 90949 42157). The dominant habitat onsite is conifer plantation and upland blanket bog with accompanying smaller areas of mixed conifer woodland and heath. The wider surroundings are predominantly improved agricultural grassland and wet grassland.

2.2 Details of the Proposed Development

The total area of the development is approximately 152 hectares. Figure 1 shows the wind farm site boundary.

2.3 Purpose of this Report

This report describes the ornithological survey methods employed and the survey data collected at Lissinagroagh Wind Farm for the period April 2020 to September 2020 inclusive. This report aims to provide robust baseline ornithological survey data for the breeding season. This data will be used to inform a separate ecological impact assessment and appropriate assessment for the proposed development.

2.4 Relevant Legislation

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

3. METHODS

3.1 Scope

3.1.1 Description of Study Area

The ornithology study area was defined as a 500m radius of the viable area for turbines (Figure 1). This boundary accounts for both detecting birds that use the wind farm site occasionally and spatial inaccuracies in observational data, as well as ancillary structures. The ornithology study area was used for vantage point surveys, following SNH (2017) guidance that flight activity surveys encompass an area extending 500m beyond the potential outermost proposed turbines. A 500m radius of the ornithology study area boundary was used for breeding walkover surveys, the methodology followed Brown and Shepard (1993) and Calladine *et al.* (2009). A 500m radius of the ornithology study area boundary was also used for breeding woodcock surveys, following Gilbert *et al.* (1998). A 5km radius of the ornithology study area boundary was used for breeding raptor surveys, based on Hardey *et al.* (2013).

3.1.2 Ecological Features Considered

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

3.1.3 Consultation

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

Table 3-1 Consultation Response Summary

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

3.2 Desk Study

A comprehensive desk study was undertaken prior to surveys in the breeding season 2020 to search for any relevant information on species of conservation concern which potentially use the study area. The assessment included a thorough review of the available ornithological data including:

- Review of online web-mappers from the National Parks and Wildlife Service (NPWS) and National Biodiversity Data Centre (NBDC);
- Review of the Bird Atlas (Balmer *et al.*, 2013);

- Review of specially requested records from the NPWS Rare and Protected Species Database.

3.3 Field Surveys

The approach to breeding bird surveys for the proposed wind farm is based on recommendations given in Scottish Natural Heritage (SNH; now NatureScot) 2017 guidance (SNH, 2017). This guidance is recognised as standard good practice guidance throughout the UK and Ireland for surveying birds to inform impact assessment for onshore wind farms. Field surveys were undertaken from April 2020 to September 2020 inclusive. Individual survey types are described below.

3.3.1 Vantage Point Surveys

Vantage point surveys were undertaken following the guidance of SNH (2017) from four vantage point locations during the 2020 breeding season.

Vantage Point Locations and Viewshed Analysis

Vantage point locations are presented in Table 3-2. Viewshed analysis was carried out to confirm the sufficiency of the chosen vantage point locations. Viewsheds were calculated using Resoft Wind Farm ZTV (Zone of Theoretical Visibility) software in combination with MapInfo Professional (Version 10.0) using a notional layer suspended at 25m, which is representative of the minimum height considered for the Potential Collision Height (PCH) based on the turbine model at the time the vantage point locations were selected. Note that while the relevance of being able to view as much of the site to ground level is acknowledged, the SNH guidance emphasises the importance of visibility of the ‘collision risk volume’ when the data is to be used to estimate the risk of collision with turbines by birds. Therefore, the viewshed analysis aims to identify the most suitable locations to site vantage points such that the airspace of the turbine rotor swept area is in view using the fewest possible number of vantage points. The vantage point locations were tested for visibility coverage by creating a viewshed point 1.75m in height (to represent the height of the observer) on a map using 10m contours terrain data. The relative height of any surrounding trees and its effects on visibility is also accounted for in the analysis. Using the ZTV software, a viewshed of 360° was produced calculating an area 25m from ground level up to a 2km radius. The resulting viewshed image was then cropped to 180° to give the viewshed.

Survey Effort

A total of 36 hours of watches was undertaken at each of the vantage point locations, equating to a total of six hours per vantage point per month. The survey effort is summarised in Table 3-2 and full details are presented in Appendix 2 of this report, including dates, times, duration and weather conditions. The location of vantage points is shown in Appendix 1.

Table 3-2 Summary of Vantage Point Survey effort

	VP1 ITM ¹ X 592930 Y 842236	VP2 ITM X 592615 Y 842428	VP3 ITM X 593496 Y 843692	VP4 ITM X 590407 Y 840997
Month	Date & Hours			
April	17/04/2020 3 hrs 20/04/2020 3 hrs	16/04/2020 6 hrs	17/04/2020 3 hrs 20/04/2020 3 hrs	21/04/2020 6 hrs
May	20/05/2020 4 hrs 21/05/2020 2 hrs	26/05/2020 6 hrs	25/05/2020 6 hrs	20/05/2020 2 hrs 21/05/2020 4 hrs

¹ Irish Transverse Mercator Co-Ordinates

	VP1 ITM ¹ X 592930 Y 842236	VP2 ITM X 592615 Y 842428	VP3 ITM X 593496 Y 843692	VP4 ITM X 590407 Y 840997
Month	Date & Hours			
June	11/06/2020 3 hrs 15/06/2020 3 hrs	23/05/2020 3 hrs 24/06/2020 3 hrs	25/06/2020 6 hrs	10/06/2020 3 hrs 15/06/2020 3 hrs
July	08/07/2020 2 hrs 20/07/2020 4 hrs	07/07/2020 3 hrs 08/07/2020 3 hrs	29/07/2020 6 hrs	07/07/2020 3 hrs 09/07/2020 3 hrs
August	06/08/2020 3 hrs 10/08/2020 3 hrs	05/08/2020 6 hrs	11/08/2020 6 hrs	06/08/2020 3 hrs 10/08/2020 3 hrs
September	13/09/2020 3 hrs 14/09/2020 2 hrs 30/09/2020 1 hr	04/09/2020 3 hrs 13/09/2020 3 hrs	14/09/2020 4 hrs 30/09/2020 2 hrs	03/09/2020 6 hrs
Total Hours	36:00	36:00	36:00	36:00

Primary Target Species

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

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

Secondary Target Species

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

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

Data Collection

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

- Date, time, and location of observation;
- Number of species recorded;
- Total duration of flightline observation;

- > Duration at each of flightline at each height band;
- > Species age and sex (where determinable);
- > Habitat(s);
- > Behaviour.

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

- > Band 1 = 0 - 10m (below the likely rotor swept area);
- > Band 2 = 10 - 25m (potentially within the likely rotor swept area, at least in part);
- > Band 3 = 25 - 175m (within the likely rotor swept area, PCH);
- > Band 4 = >175m (above the likely rotor swept area).

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

3.3.2 Breeding Walkover Surveys

Breeding walkover surveys were undertaken to determine the presence of bird species of conservation concern and identify areas of possible, probable or confirmed breeding territories. The survey methodology Brown and Shepherd (1993) and Calladine *et al.* (2009). Transect routes were devised to ensure coverage of different habitat complexes between vantage point locations within the study area and to survey all areas of suitable breeding habitat to within 100m, where access allowed. Surveys were carried out during daylight hours during the core breeding season months of April, May, June, and July 2020, with the site being visited four days per month on each occasion. Following all survey visits, the field maps were analysed to determine the number and location of breeding territories. All non-breeding individuals and species encountered were also recorded. Survey effort is provided in Appendix 2 of this report, including dates, times, duration and weather conditions. A map of the breeding walkover survey area is provided in Appendix 1.

3.3.3 Breeding Raptor Surveys

Breeding raptor surveys (i.e. birds of prey) were undertaken to identify occupied raptor territories and ascertain whether breeding was successful. Methodology followed Hardey *et al.* (2013). Surveys involved a combination of raptor vantage point watches of 3 hours and transects in areas deemed most likely to hold breeding raptors based on habitat and observed movements of raptor species in the study area. Breeding raptor surveys were undertaken out to a 5km survey radius. Once breeding activity was observed, vantage point and transect locations were adjusted to pinpoint breeding locations. Each breeding raptor survey location was visited four times to complete a full round of breeding season surveys. The purpose of the four visits is (1) to establish occupancy, (2) to establish active nests, (3) to check for chicks and (4) to check for fledglings. Timing of these visits vary by species as set out in Hardey *et al.* (2013). Survey effort is provided in Appendix 2 of this report, including dates, times, duration and weather conditions. A map of the breeding raptor survey area is presented in Appendix 1.

3.3.4 Breeding Woodcock Surveys

Breeding season surveys for woodcock were undertaken to record the presence of roding (displaying) male woodcock and thereby establish the distribution and abundance of the species in the study area. Methodology followed Gilbert *et al.* (1998). Transects were carried out in areas of suitable habitat, i.e. woodland (particularly broadleaf) and dense bracken in upland areas by a surveyor walking slowly (~2km/hr). The same transect routes were followed on successive surveys. When a woodcock was detected, the following details are recorded for each observation: location, time, transect number, number

of birds, breeding activity/behaviour and primary habitat used (and secondary and tertiary habitat if applicable).

Transect surveys were undertaken in May and June 2020. Surveys commenced one hour before sunset and continued for an hour after sunset or until it was too dark to see. Survey effort is provided in Appendix 2 of this report, including dates, times, duration and weather conditions. A map of the survey area is presented in Appendix 1.

3.4 Project Team

This report has been prepared by Zak O'Connor (B.Sc.), Ornithologist of MKO, and reviewed by Thalie Konstantinidis (B.Sc.), Ornithologist, Patrick Manley (B.Sc.), Senior Ornithologist of MKO and Padraig Cregg (B.Sc. M.Sc.), Principal Ornithologist of MKO. All are suitably qualified ornithologists with experience in completing avifaunal assessments and competent experts for the purposes of the preparation of this report, following SNH (2017) and CIEEM (2017) ecological reporting guidelines.

3.4.1 Field Team

Field surveys were undertaken by Andrew O'Donoghue (B.Sc.). Andrew is a suitably qualified competent expert in field ornithology.

3.5 Survey Limitations

A comprehensive suite of bird surveys was undertaken at the site between April 2020 and September 2020. Results from the breeding season 2020 are derived from a continuous 6 months of surveying undertaken in accordance with best practice guidance, SNH (2017).

There were no issues relating to study area access/weather/time of year/Coillte forestry operations. However, one round of the breeding walkover surveys was not conducted in April 2020 due to the movement restrictions mandated by the Government of Ireland during the COVID-19 pandemic. Nonetheless, surveys were conducted during the core breeding season in May, June and July.

4. RESULTS

4.1 Desk Review

4.1.1 Sites Designated for Nature Conservation

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

Table 4-1 Special Protection Areas within 15 kilometres of site

Designated site and code	Special Conservation Interest Species ²	Distance from wind farm site (km)
Sligo/Leitrim Uplands (004187)	<ul style="list-style-type: none"> > Peregrine > Chough 	9.2km

4.1.2 Previous Survey Data

4.1.2.1 Breeding/Wintering Bird Atlas Records

Bird Atlas 2007-11: The breeding and wintering birds of Britain and Ireland' (Balmer *et al.*, 2013) is the most recent comprehensive work on wintering/breeding birds in Ireland. It provides information on species and their wintering/breeding status in 10km hectads. The site lies within hectad G94. Table 4-2 presents a list of nine species of conservation interest recorded within this hectad.

Table 4-2 Bird atlas data for relevant hectads

Species Name	Bird Atlas 2007-2011		Conservation Status
	G94 Breeding	G94 Winter	
Golden Plover	-	Present	BD, RL
Peregrine	Prob	-	BD, SCI
Hen Harrier	Conf	Present	BD
Greenland White-fronted Goose	-	Present	BD
Merlin	Poss	-	BD
Woodcock	-	Present	RL
Red Grouse	Prob	Present	RL
Kestrel	Prob	Present	RL
Meadow Pipit	Conf	Present	RL

BD=Birds Directive; RL = BoCCI Red List; Poss = possible breeding; Prob = probable breeding; Conf= confirmed breeding; Seen = present without evidence of breeding.

² It is noted that a determination will be made on whether there is connectivity between the SPAs and the wind farm site at the appropriate assessment stage

4.1.2.2 Rare and Protected Species Dataset

An information request was sent to the NPWS requesting records from the Rare and Protected Species Database. The sections below provide records obtained from the NPWS of the rare and protected breeding bird species:

Hen Harrier

Table 4-3 below presents the NPWS records for hen harrier nest sites to defined radii (km) of the development site.

Table 4-3 NPWS Hen Harrier Nest Site Records

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

Peregrine

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

Red Grouse

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

4.2 Field Surveys

4.2.1 Flight Activity Survey

Observations during vantage point surveys, breeding walkover surveys, breeding raptor surveys, breeding woodcock surveys and incidental observations are provided below. Summaries include individual species accounts of primary and secondary target species.

4.2.2 Vantage Point Surveys

4.2.2.1 Primary Target Species

Golden Plover

There were three observations of golden plover during vantage point surveys. All observations were recorded during the migratory period for this species during April and September. Observations were of between 6 and 17 birds. Two observations were within 500m of the site and the other was within 600m of the site. A total of 40 seconds (s) was spent at potential collision height (PCH). Observations are shown in Appendix 1 Figure 1.2.

Hen Harrier

There were 44 observations of hen harrier during vantage point surveys. Observations were mostly of individual birds with a maximum of three birds observed simultaneously. All observations were on, or within 500m of the site and likely relate to the two breeding territories identified during the survey period. Observations in these areas include birds displaying, showing agitated behaviour, and food provisioning flights. There was one observation at the nest west of Boleyboy in July of a ringtail (possible juvenile) flying up from forestry. The remaining observations of hen harrier were of birds commuting or hunting. A total of 1,330s was spent at PCH. Observations are shown in Appendix 3 Figure 1.1.

Peregrine

There were three observations of peregrine during vantage point surveys. All observations were of individual birds commuting and occurred on site. A total of 200s was recorded at PCH. Observations are shown in Appendix 1 Figure 1.3.

Whooper Swan

There was one observation of whooper swan during vantage point surveys. This observation was of a flock of 28 birds commuting within the PCH for 50s in April.

Kestrel

There were 11 observations of kestrel during vantage point surveys. All observations were on, or within 500m of the site. Observations were of between one and two birds mostly hunting or commuting. There were multiple observations of juvenile birds in the same area north of Boleyboy in August and September, confirming breeding in this area. Eight observations were recorded at PCH for a combined time of 303s. Observations are shown in Appendix 1 Figure 1.4.

Red Grouse

There were 12 observations of red grouse during vantage point surveys. All observations were of birds calling and ranged between one and two birds. All observations occurred within 500m of the site from suitable breeding west of Killea. Observations are shown in Appendix 1 Figure 1.5.

Snipe

There were nine observations of snipe during vantage point surveys. Observations were of between one and two birds and occurred within 500m of the site. Most observations were recorded around Killea. A

total of 100s were observed at PCH. Birds were observed displaying (drumming), flying and calling. This behaviour indicates probable breeding for this species. Observations shown in Appendix 1 Figure 1.6.

Woodcock

There were three observations of woodcock during vantage point surveys. Observations were of between one and two birds. Birds were observed displaying (drumming) and occurred within 500m of the site. There were no observations at PCH. Observations are shown in Appendix 1 Figure 1.7.

4.2.2.2 Secondary Target Species

Buzzard

There were 26 observations of buzzard during vantage point surveys. One breeding territory was identified on site at Boleyboy and juvenile birds were heard calling/begging from this area on several occasions in August. The remainder of observations during these surveys were of birds commuting on, or within 500m of the site. A total of 870s was recorded at PCH. Observations are shown in Appendix 1 Figure 1.8.

Sparrowhawk

There were 13 observations of sparrowhawk during vantage point surveys. One breeding territory was identified at Tawnyfeacle during these surveys. Juvenile birds were heard begging in this area in August, and in September three juvenile birds were observed here. The remainder of the observations were of birds hunting and commuting. Seven observations occurred at PCH for a combined time of 745s. Observations are shown in Appendix 1 Figure 1.9.

Grey Heron

There were two observations of grey heron during vantage point surveys. Both observations were of individual birds commuting and a total of 45s was spent at PCH.

Lesser Black-backed Gull

There were 13 observations of lesser black-backed gulls during vantage point surveys. All observations were of birds commuting and ranged between 1 and 360 birds. A total of 822s was recorded at PCH.

Mallard

There were two observations of mallard during vantage point surveys. Both observations were of individual birds commuting and neither occurred at PCH.

4.2.3 Breeding Walkover Surveys

Hen Harrier

There were 11 observations of hen harrier during breeding walkover surveys. All observations were on, or within 500m of the site and are likely related to the two breeding territories identified during this survey period. There was one food pass observed at the nest to the southeast of Saddle Hill in May, and two

separate food passes observed at the nest west of Boleyboy in May and June. Other observations were of birds displaying and commuting. Observations are shown in Appendix 3 Figure 2.1.

Kestrel

There was one observation of kestrel during breeding walkover surveys. In July, a juvenile bird was observed perching on site. This observation was within the breeding kestrel territory identified north of Boleyboy, so it is thought to be related to this nest. Observations are shown in Appendix 1 Figure 2.2.

Red Grouse

There were five observations of red grouse during breeding walkover surveys. Observations were on, or within 500m of the site. All observations were of individual birds calling or flying within suitable breeding habitat, west of Killea. Observations are shown in Appendix 1 Figure 2.3.

Grey wagtail

There were eight observations of grey wagtail during breeding walkover surveys. Observations were between one and three birds.

Meadow pipit

There were 120 observations of meadow pipit during breeding walkover surveys. These observations were recorded across the site and flock sizes varied between two and ten birds with some observations having only one bird.

Snipe

There was one observation of snipe during breeding walkover surveys. An individual bird was flushed by the surveyor within 500m of the site. Observations are shown in Appendix 1 Figure 2.4.

Buzzard

There were 12 observations of buzzard during breeding walkover surveys. Observations were between one and two birds with all on, or within 500m of the site. Most observations were of birds commuting or hunting. There were two observations related to a nest on site, in both instances, adult birds displayed agitated behaviour at the nest site in the presence of the surveyor. Observations are shown in Appendix 1 Figure 2.5.

Lesser Black-backed Gull

There were nine observations of lesser black-backed gull during breeding walkover surveys. Most observations were of birds flying over and within 500m of the site.

Sparrowhawk

There were nine observations of sparrowhawk during breeding walkover surveys. Observations were on, or within 500m of the site. Two nests were identified during these surveys, in addition to the one identified during the vantage point surveys. Both nests are located at the northern section of the site with one located on the site and the other located 350m from the site. Most observations were of birds hunting. At both nests, juvenile birds were heard begging during these surveys. Observations are shown in Appendix 1 Figure 2.6.

4.2.4 Breeding Raptor Surveys

Hen Harrier

There were 26 observations of hen harrier during breeding raptor surveys. All but one of the observations were on, or within 500m of the site. All observations are likely related to the two breeding territories identified during the survey period. Observations included birds displaying, showing agitated behaviour, and food provisioning flights. There was one fledgling observed flying low between trees at the nest site west of [REDACTED] in July. Observations are shown in Appendix 3 Figure 3.1.

Kestrel

There was one observation of a kestrel during breeding raptor surveys. This observation was of a juvenile bird over 3km from the site. Observations are shown in Appendix 1 Figure 3.2.

Buzzard

There were 28 observations of buzzard during breeding raptor surveys. Most observations occurred on, or within 500m of the site. A breeding territory was identified within the site at Boleyboy in July. During these surveys, at least two chicks were determined to be fledged from this nest. Other observations during these surveys included birds commuting, perching and calling. Observations are shown in Appendix 1 Figure 3.3.

Sparrowhawk

There were 13 observations of sparrowhawk during breeding raptor surveys. All observations were on, or within 500m of the site. Two breeding territories were identified during these surveys which were also monitored during the breeding walkover surveys. Observations included birds showing agitated behaviour and a juvenile bird was heard begging from the nest on site in July. Observations are shown in Appendix 1 Figure 3.4.

4.2.5 Breeding Woodcock Survey

There were 18 observations of individual birds during breeding woodcock surveys. All observations were of birds displaying (roding). There were two breeding territories recorded given the presence of roding birds. One territory was identified between Saddle Hill and Killea in the northern section of the site and the other was recorded in the southern section of the site, north of Tawnyfeacle. Observations are shown in Appendix 1 Figure 4.1.

4.2.6 Incidental Observations

Golden Plover

There was one incidental observation of golden plover during a breeding raptor survey in April. This observation was of a flock of 86 birds being flushed within 500m of the site and then landing again 1km from the site near Dough Mountain. Observations are shown in Appendix 1 Figure 5.1.

Red Grouse

There were six incidental observations of red grouse during breeding raptor surveys. Observations were of individual birds calling or flying between 550m to 4km from the site. Observations are shown in Appendix 1 Figure 5.2.

There were 13 incidental observations of snipe during vantage point and breeding raptor surveys up to 5km from the site. Observations were of between one and two birds who were observed displaying (drumming), commuting and calling. Observations are shown in Appendix 1 Figure 5.3.

Common Gull

There was one incidental observation of three common gull commuting during a breeding raptor survey in May, up to 5km from the site.

Grey Heron

There was one incidental observation of a grey heron commuting during a breeding raptor survey in June, up to 5km from the site.

Lesser Black-backed Gull

There were 13 incidental observations of lesser black-backed gull during breeding raptor surveys, up to 5km from the site. Observations ranged from one to six birds. All observations were of birds commuting.

5.

DISCUSSION

Ornithological surveys were conducted at the Lissinagroagh wind farm site from April 2020 to September 2020. The key observations during surveys are outlined below.

Two breeding territories were identified for hen harrier on the wind farm site. The nest west of [REDACTED] fledged at least one chick however, while a second nest was confirmed there was no evidence of fledged chicks at the nest southeast of [REDACTED]. One breeding territory was identified for kestrel on the wind farm site with several observations of juvenile birds in an area north of [REDACTED] from July onwards. Additionally, there was one buzzard nest identified on the wind farm site at Boleyboy, this nest fledged at least two chicks. Three sparrowhawk nests were identified on, or within 500m of the site. One nest was located north of Tawnyfeacle, which is thought to have fledged three chicks. The other two sparrowhawk nests were between Saddle Hill and Killea at the northern section of the site. Juvenile birds were heard calling/begging from both of these nests, but it could not be determined how many chicks were present. Breeding was also confirmed for snipe and woodcock.

There is a resident population of red grouse within 500m of the wind farm site. Given the level of activity and the suitable breeding habitat in which they were observed, it is possible that breeding took place within 500m of the site. Golden plover, peregrine and whooper swan were recorded infrequently and in low numbers at the wind farm site.

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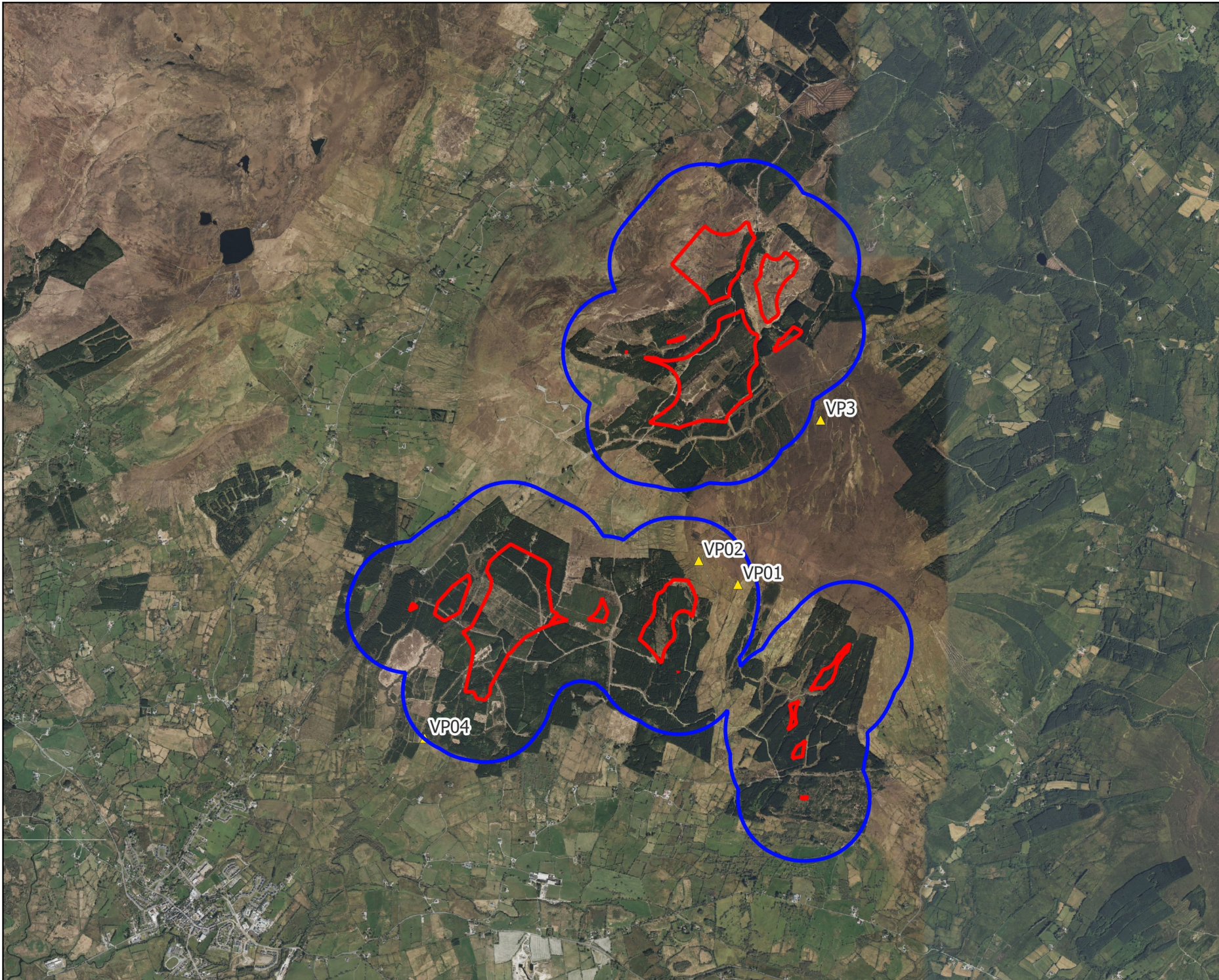
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APPENDIX 1

FIGURES



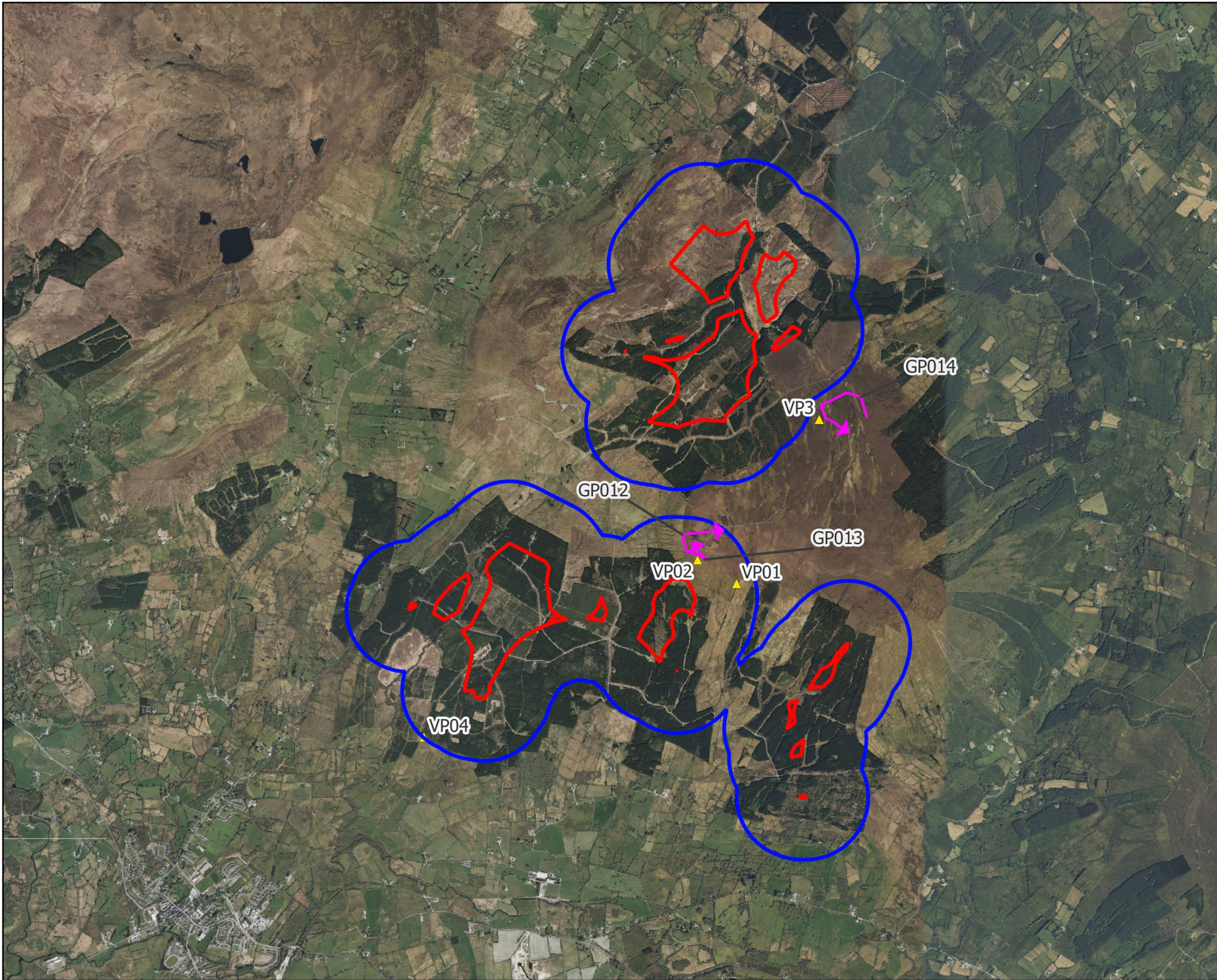
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- Wind farm Site
- 500m Survey Radius
- ▲ Vantage Point Locations




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Drawing Title	
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Project Title	
Lissinagroagh Wind Farm	
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ZOC	AOD
Project No.	Drawing No.
200217-a	Fig 1
Scale	Date
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- ### Map Legend
- Site Boundary
 - 500M Survey Radius
 - ▲ Vantage Point Locations
 - Flightline

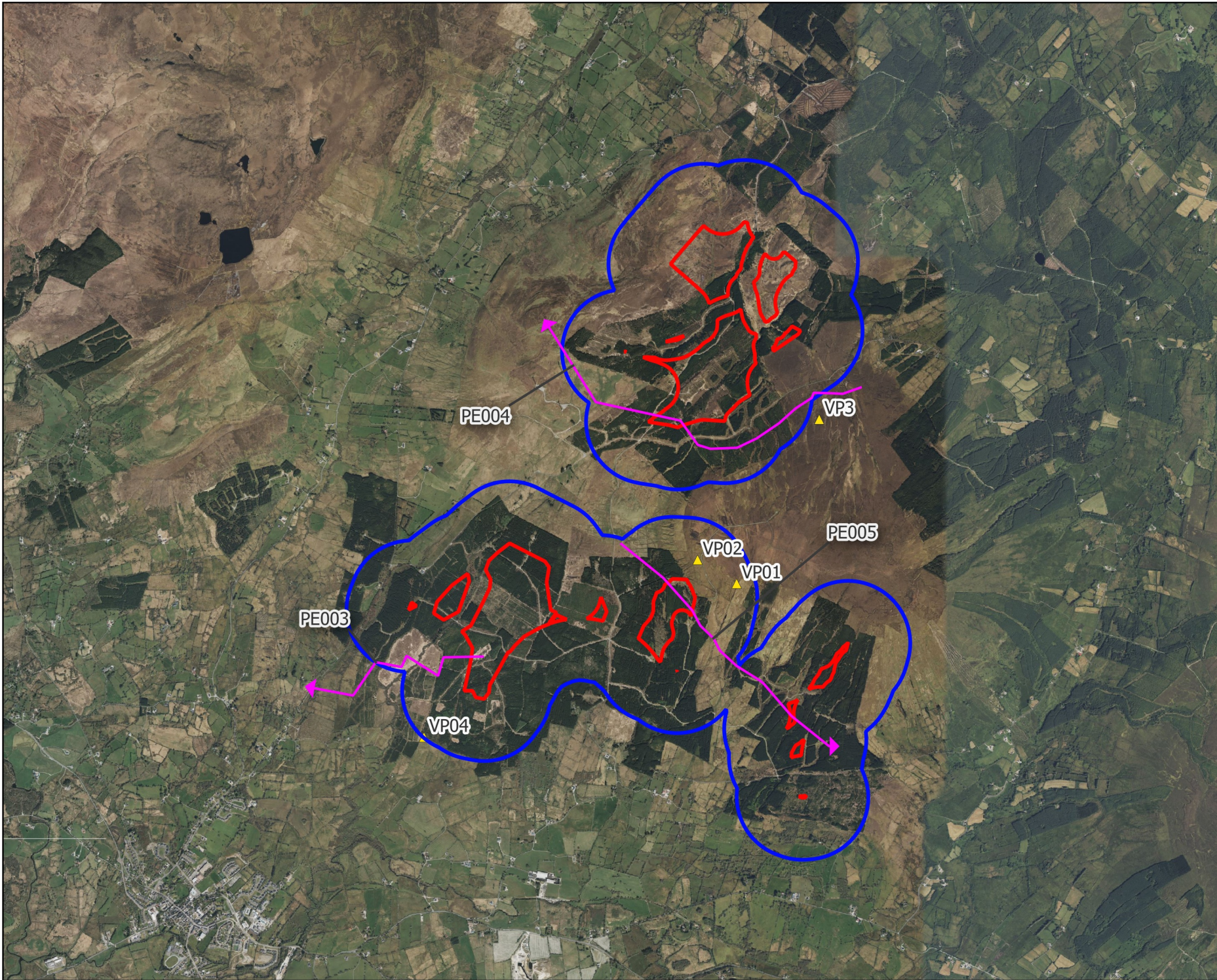
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Map Legend

- Wind Farm Site
- 500m Survey Radius
- ▲ Vantage Point Location
- Flightline

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Drawing Title

Vantage Point Survey
Peregrine Observations

Project Title

Lissinagroagh Wind Farm

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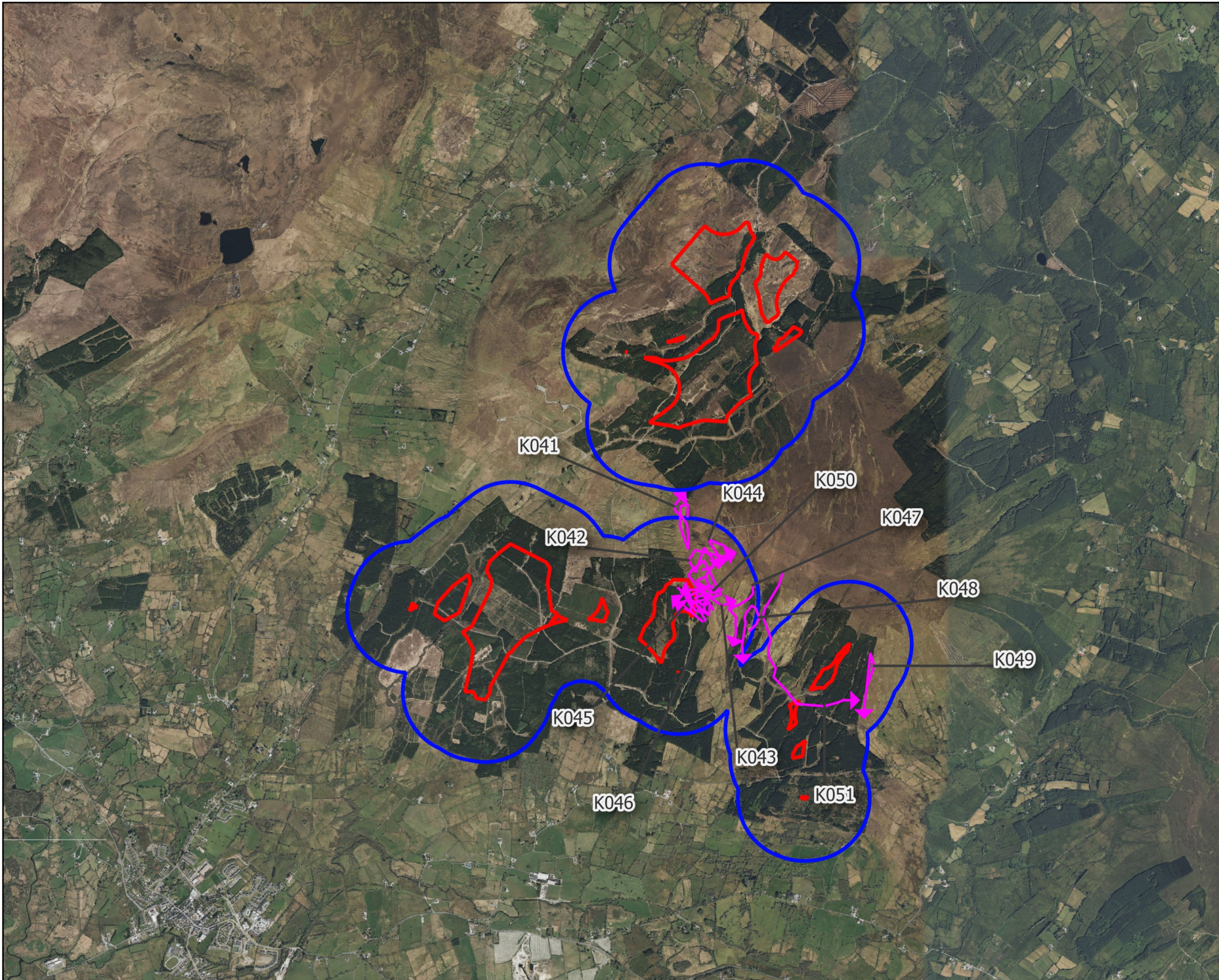
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Map Legend

- Wind Farm Site
- 500m Survey Radius
- ▲ Vantage Point Location
- Flightline

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Drawing Title

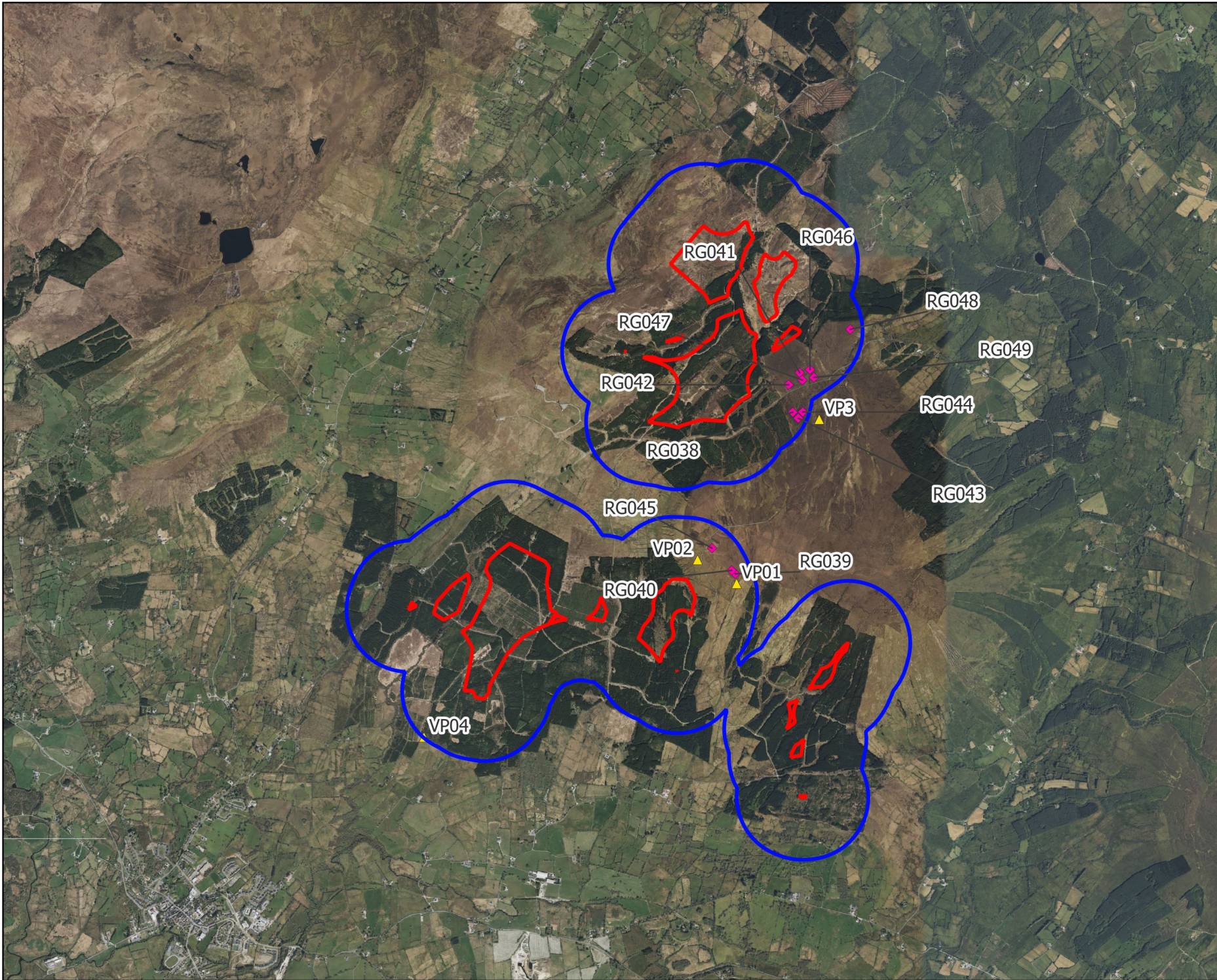
Vantage Point Survey
Kestrel Observations

Project Title

Lissinagroagh Wind Farm

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Project No.	Drawing No.
200217-a	Fig 1.4
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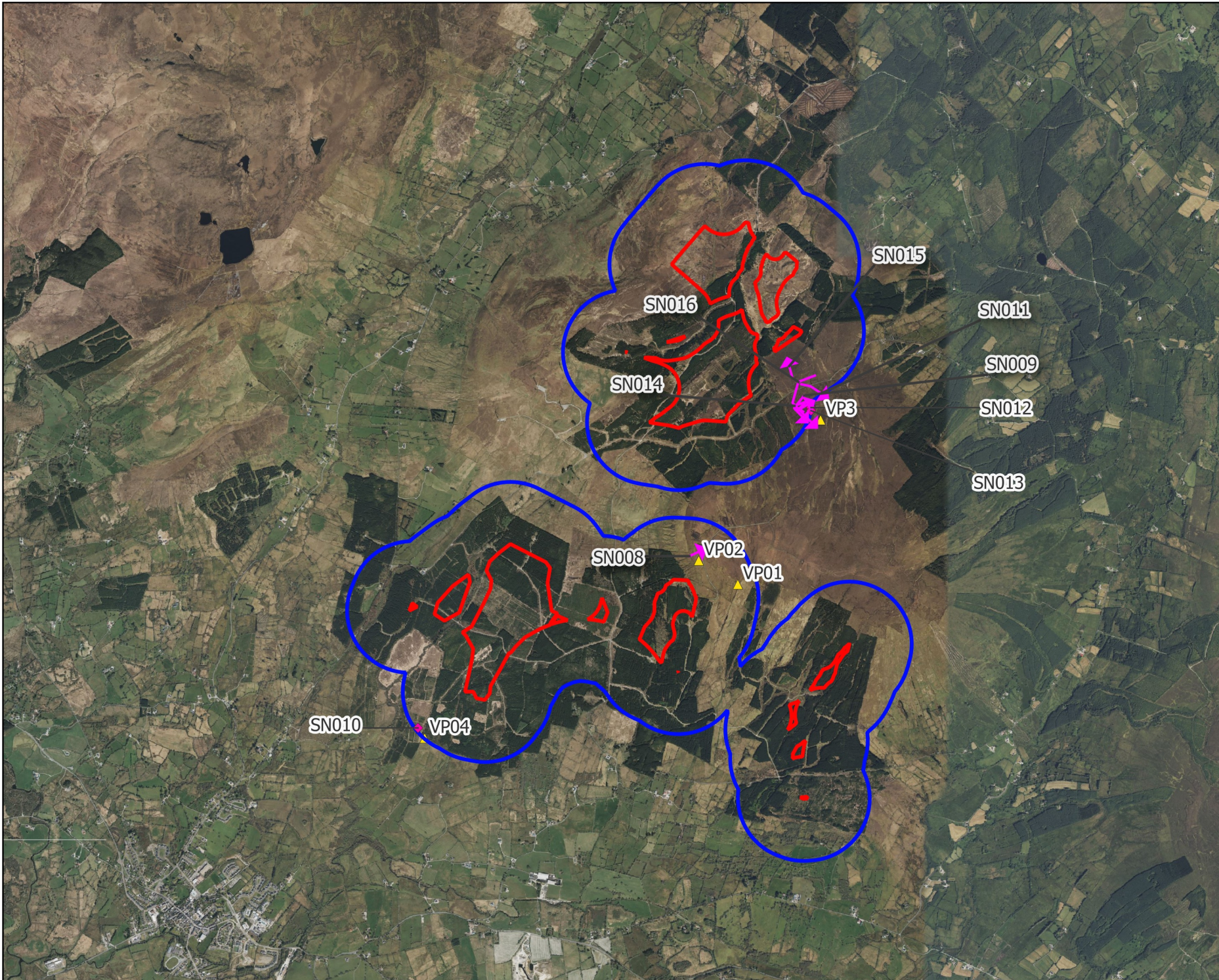
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- ◆ Observation



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Project Title Lissinagroagh Wind Farm	
Drawn By ZOC	Checked By AOD
Project No. 200217-a	Drawing No. Fig 1.5
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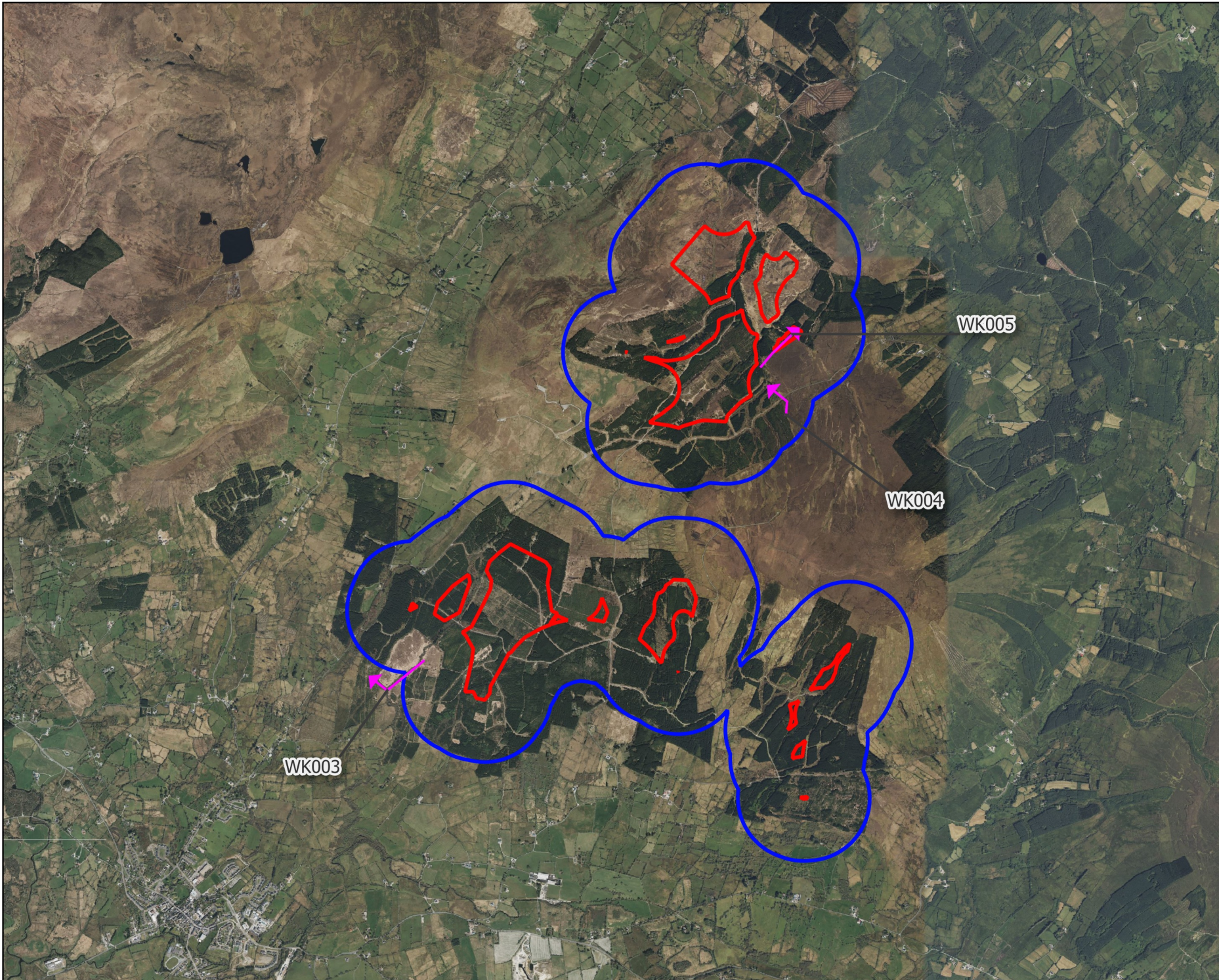
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- ▲ Vantage Point Locations
- ➔ Flightline
- ◆ Observation

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Project Title	
Lissinagroagh Wind Farm	
Drawn By	Checked By
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Project No.	Drawing No.
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Scale	Date
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Map Legend

- Wind Farm Site
- 500m Survey Radius
- ▲ Vantage Point Location
- Flightline

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Drawing Title

Vantage Point Survey
Woodcock Observations

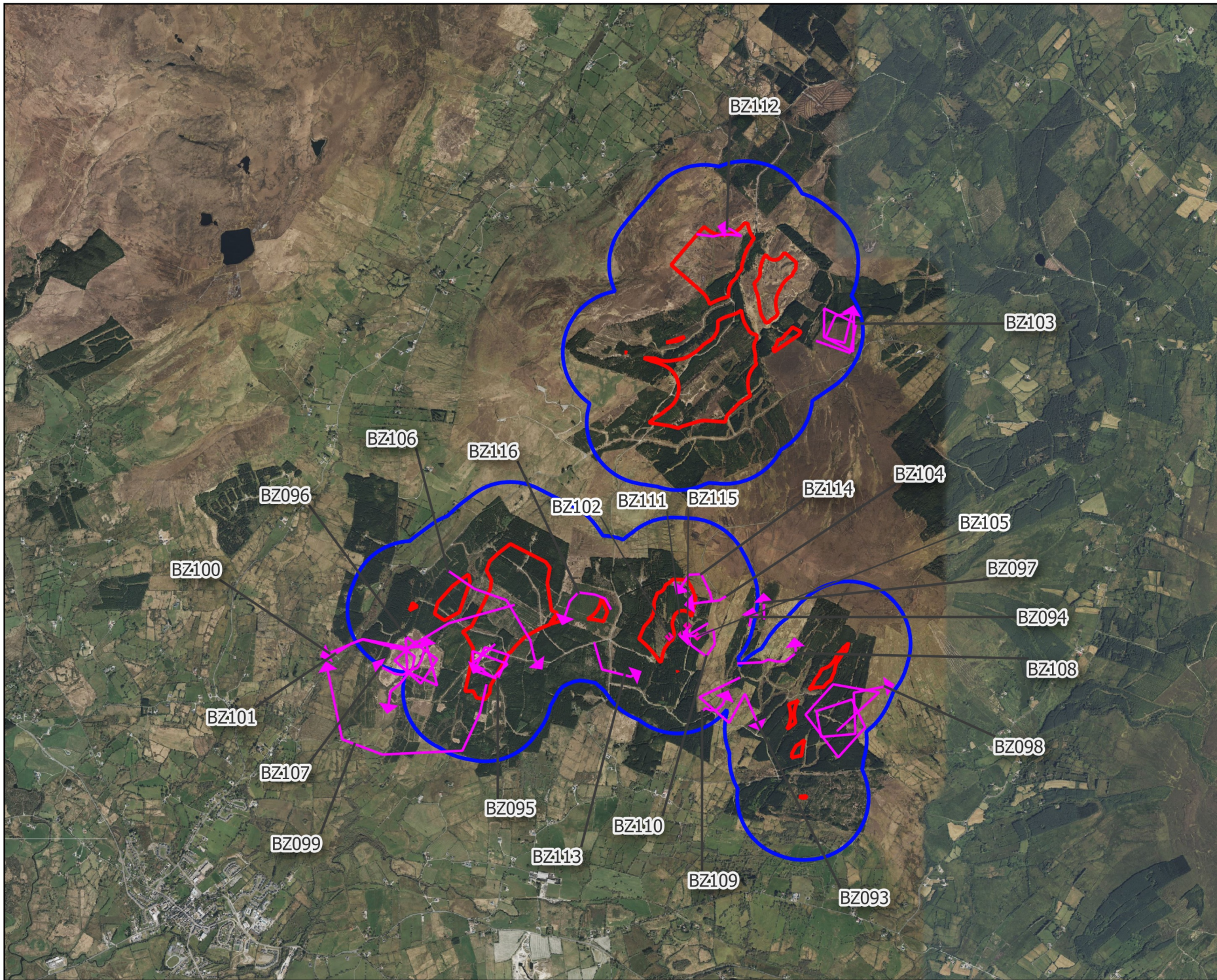
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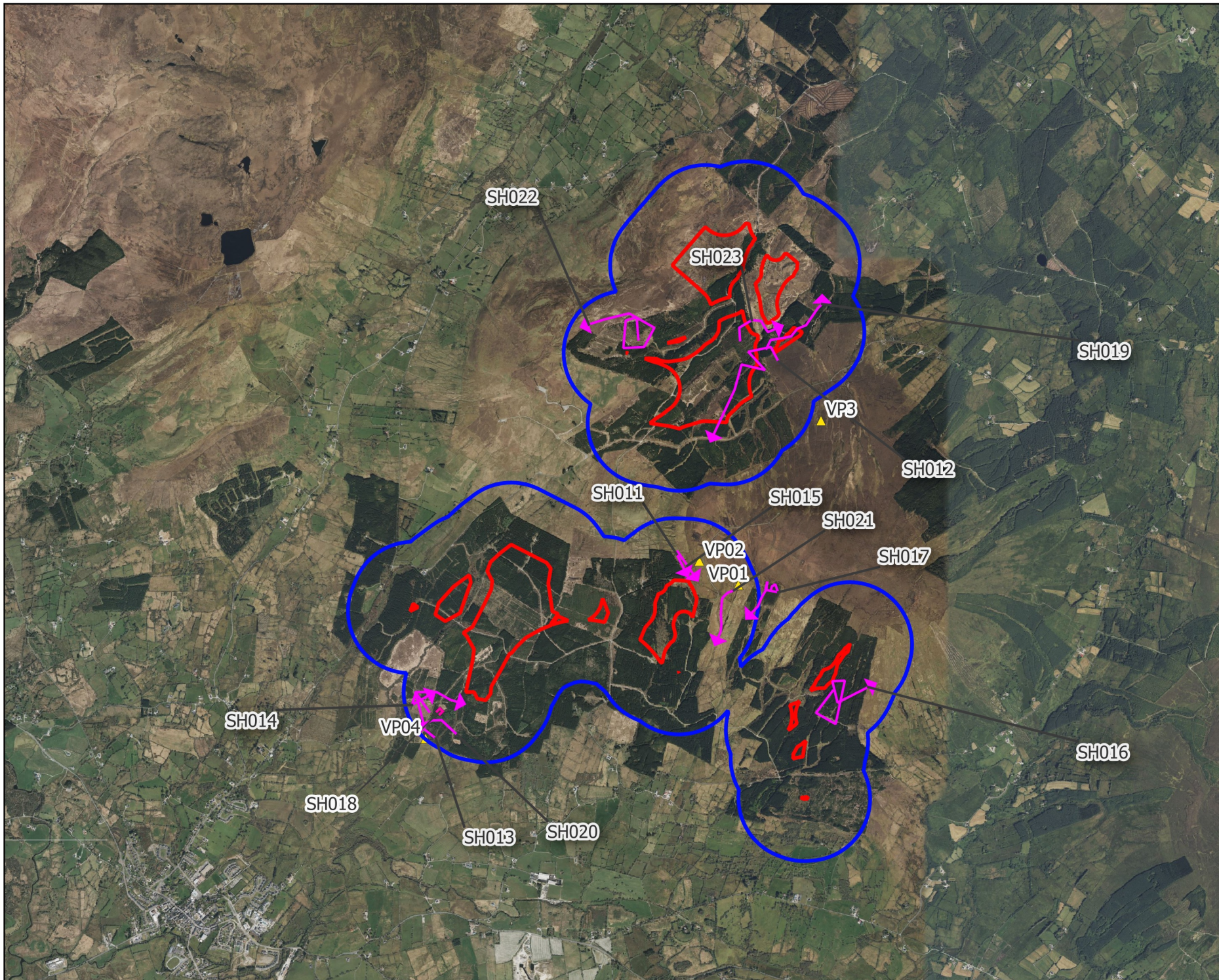
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- Flightline
- ◆ Observation



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Project No.	Drawing No.
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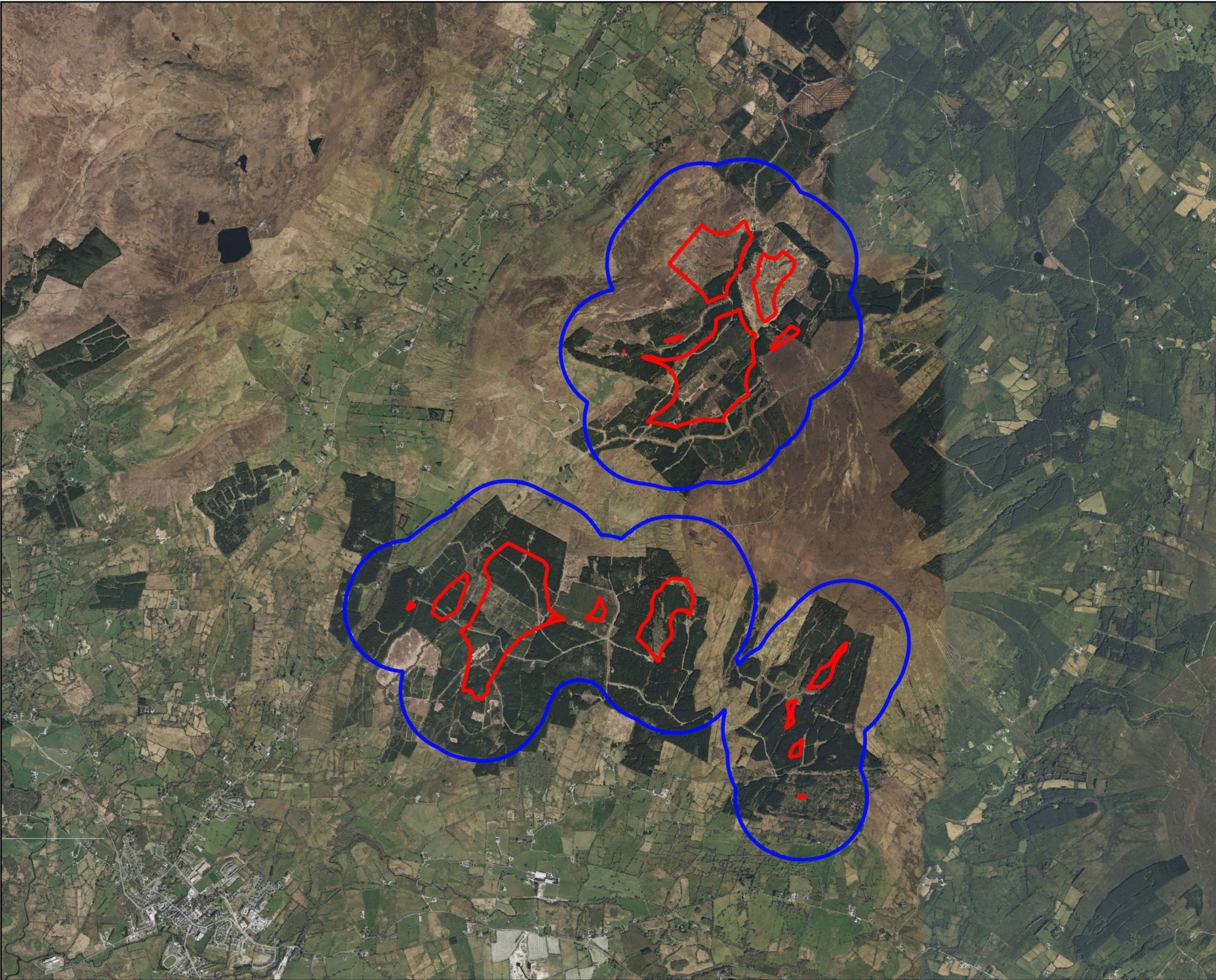


Map Legend



- Wind Farm Site
- 500m Survey Radius
- ▲ Vantage Point Locations
- Flightline
- ◆ Observation

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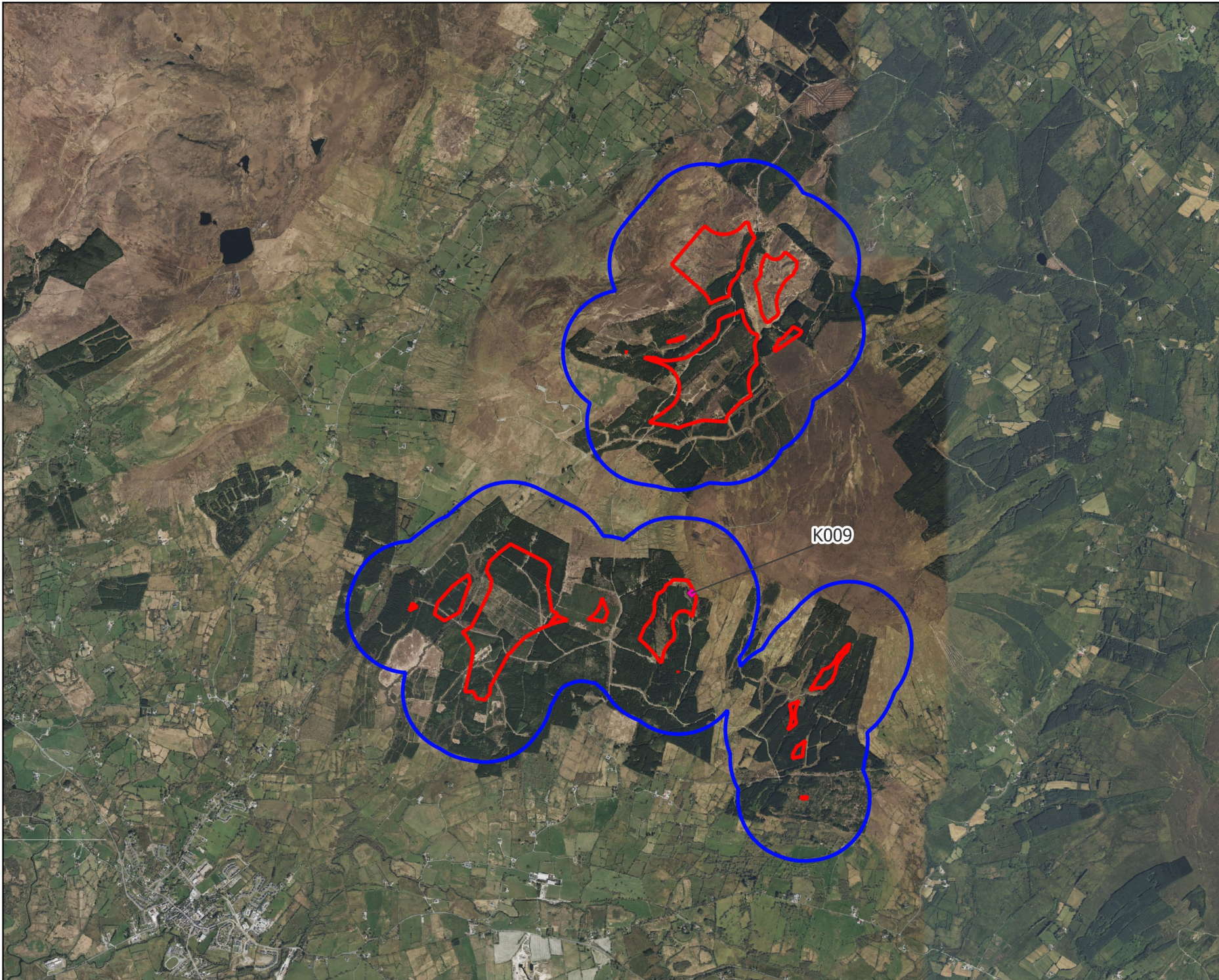
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-  Wind farm Site
-  500m Survey Radius



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Lissinagroagh Wind Farm	
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Map Legend

- Wind Farm Site
- 500m Survey Radius
- ◆ Observation



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Drawing Title

Breeding Walkover Survey
Kestrel Observations

Project Title

Lissinagroagh Wind Farm

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200217-a

Drawing No.

Fig 2.2

Scale

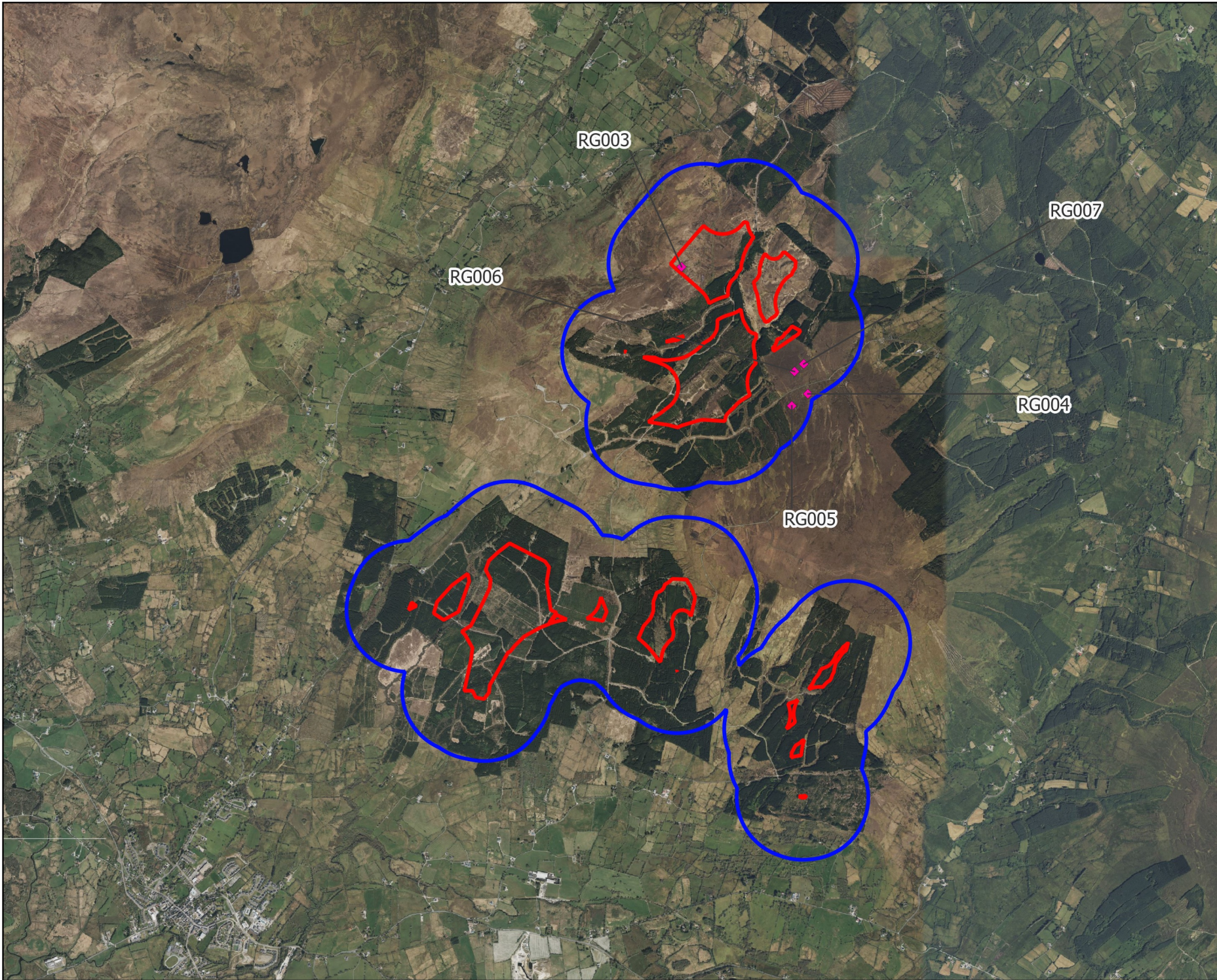
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Map Legend

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- 500m Survey Radius
- ◆ Observation

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Drawing Title

Breeding Walkover Survey
Red Grouse Observations

Project Title

Lissinagroagh Wind Farm

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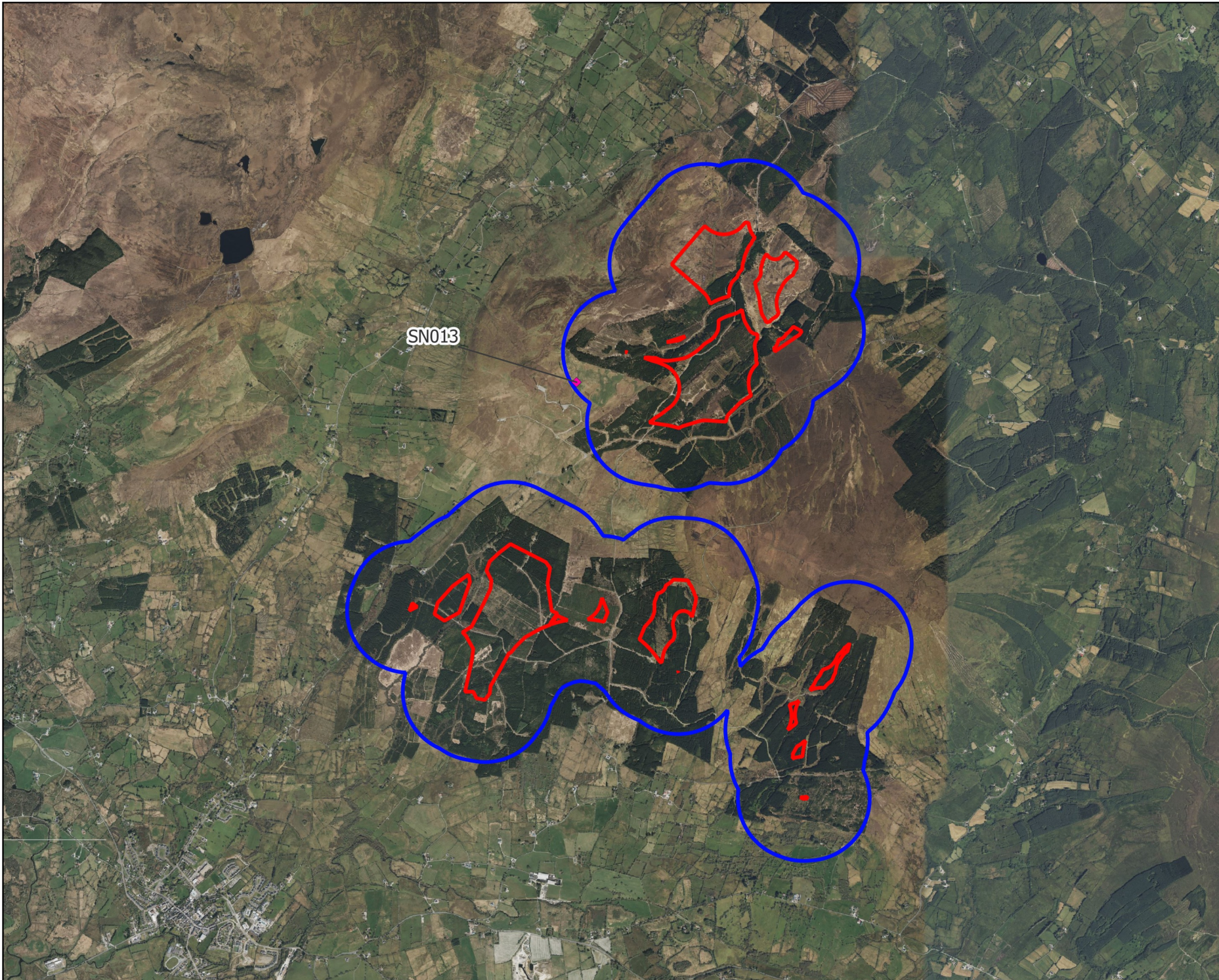
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Map Legend

- Wind Farm Site
- 500m Survey Radius
- ◆ Observation

SN013



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Drawing Title

Breeding Walkover Survey
Snipe Observations

Project Title

Lissinagroagh Wind Farm

Drawn By

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Project No.

200217-a

Drawing No.

Fig 2.4

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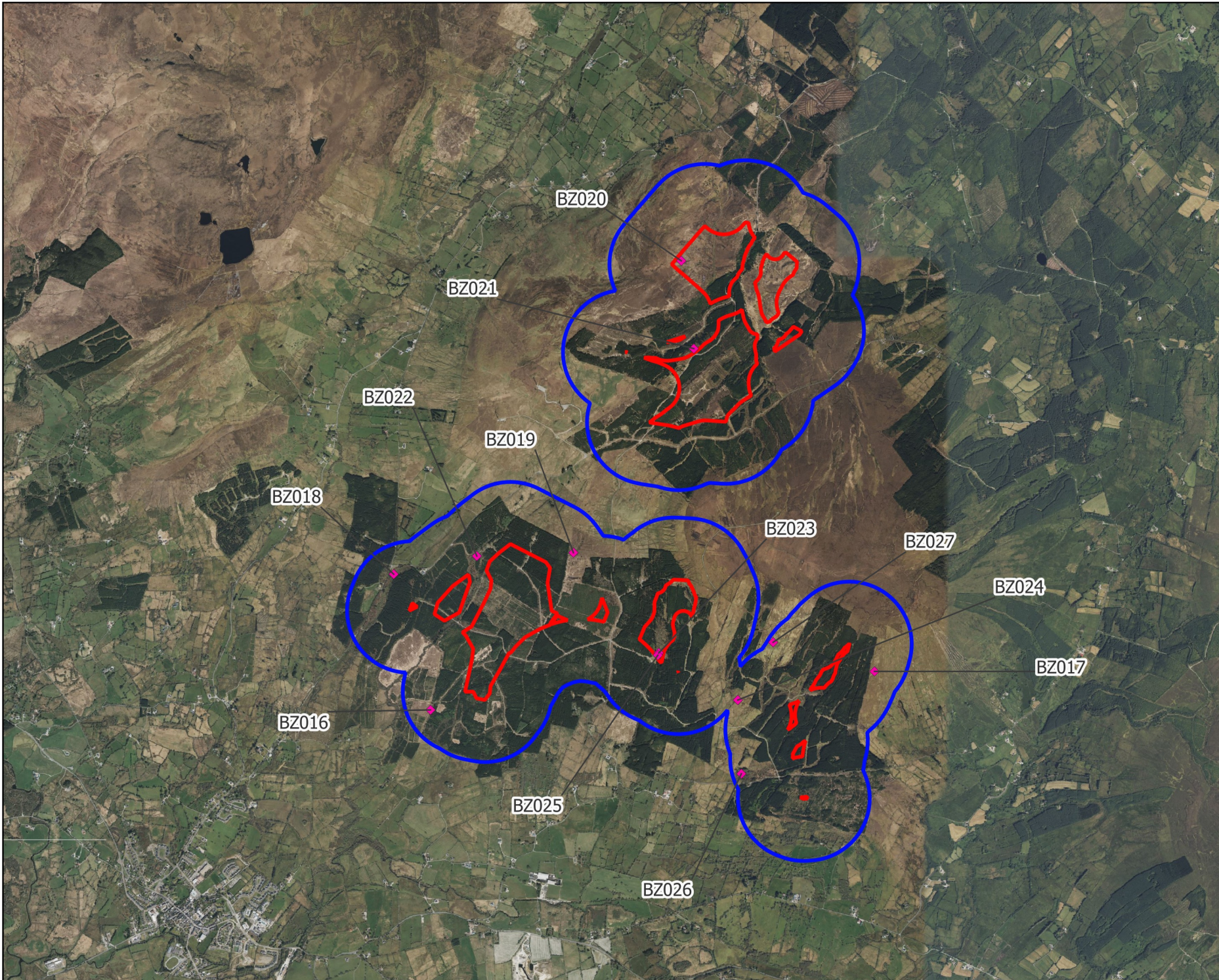
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Map Legend

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- 500m Survey Radius
- ◆ Observation

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Drawing Title

Breeding Walkover Survey
Buzzard Observations

Project Title

Lissinagroagh Wind Farm

Drawn By Checked By

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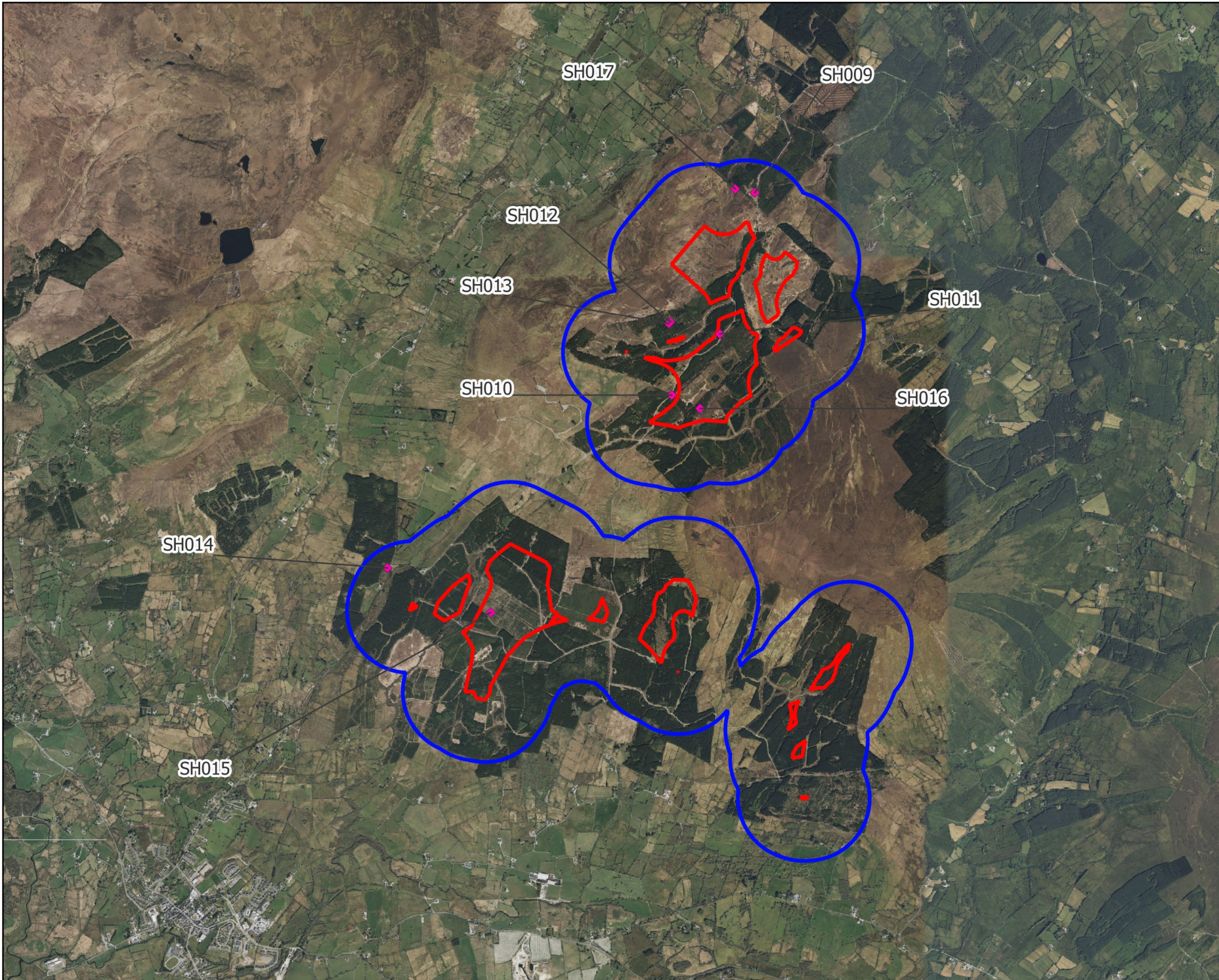
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Map Legend

- Wind Farm Site
- 500m Survey Radius
- ◆ Observation

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Drawing Title

Breeding Walkover Survey
Sparrowhawk Observations

Project Title

Lissinagroagh Wind Farm

Drawn By	Checked By
ZOC	AOD

Project No.	Drawing No.
200217-a	Fig 2.6

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Map Legend

- Wind Farm Site
- 500m Survey Radius
- 5km Survey Radius



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Drawing Title

Breeding Raptor Survey Area

Project Title

Lissinagroagh Wind Farm

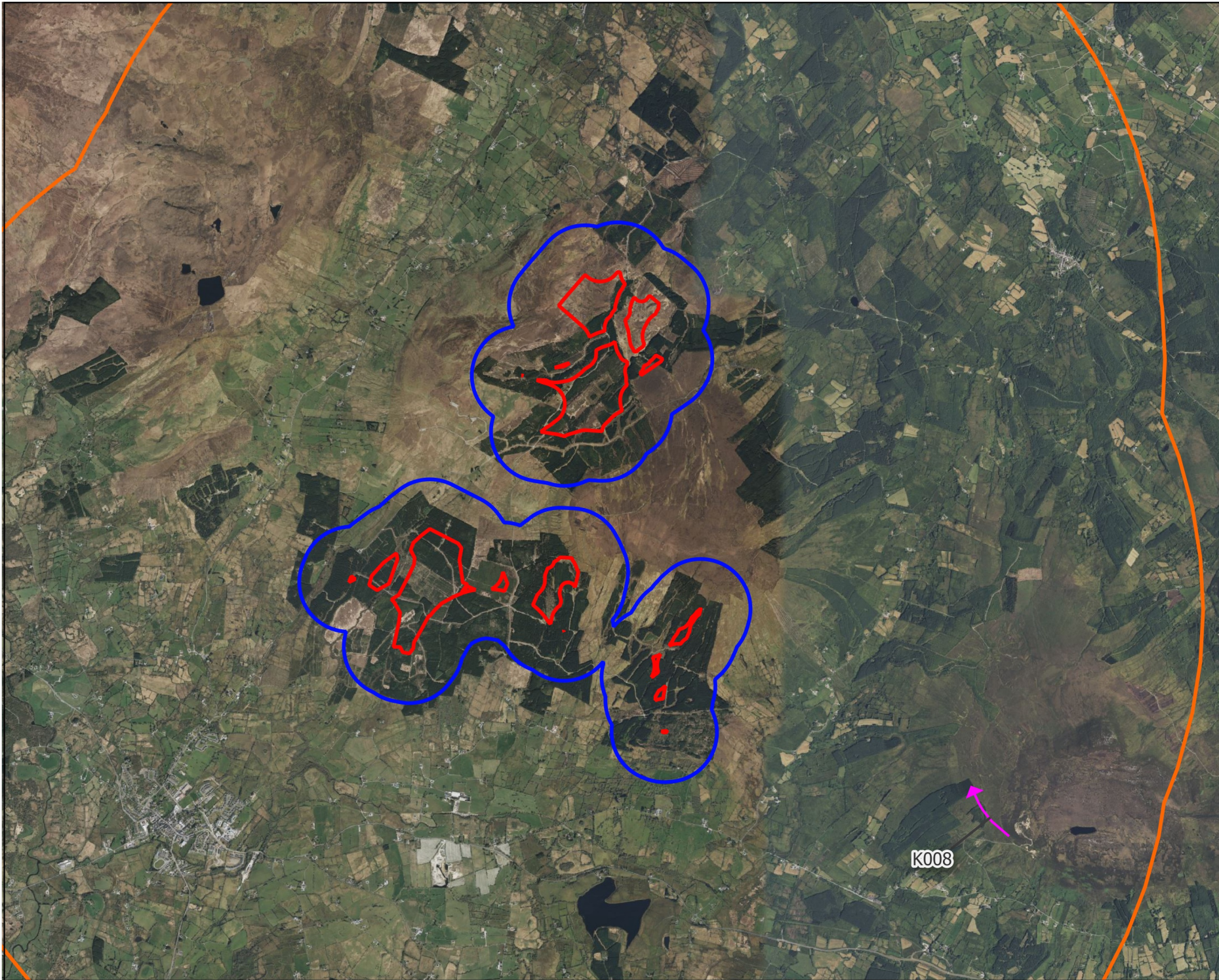
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200217-a	Fig 3





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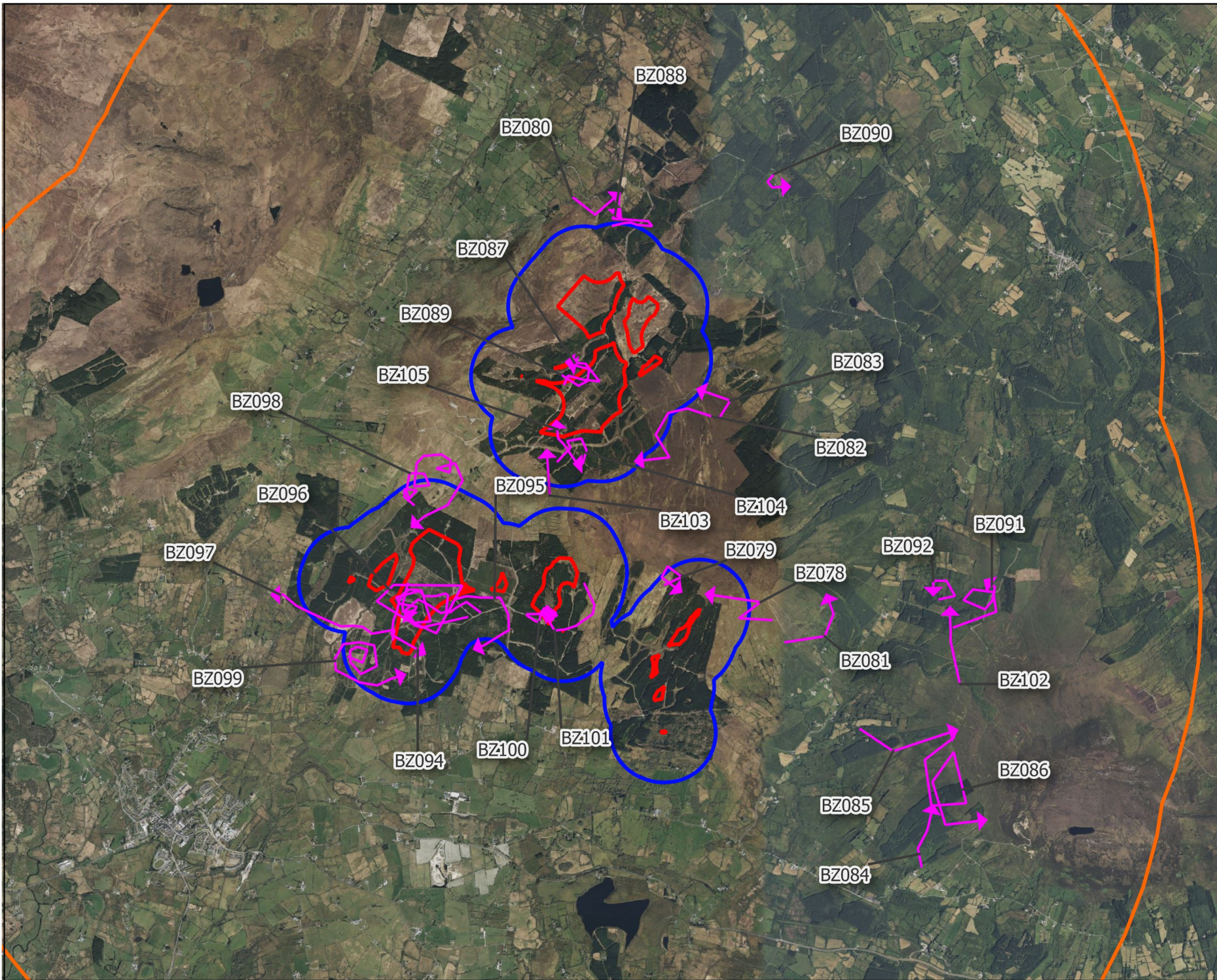
Map Legend

-  Wind Farm Site
-  500m Survey Radius
-  5km Survey Radius
-  Flightline



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<p>Project Title</p> <p>Lissinagroagh Wind Farm</p>	
<p>Drawn By</p> <p>ZOC</p>	<p>Checked By</p> <p>AOD</p>
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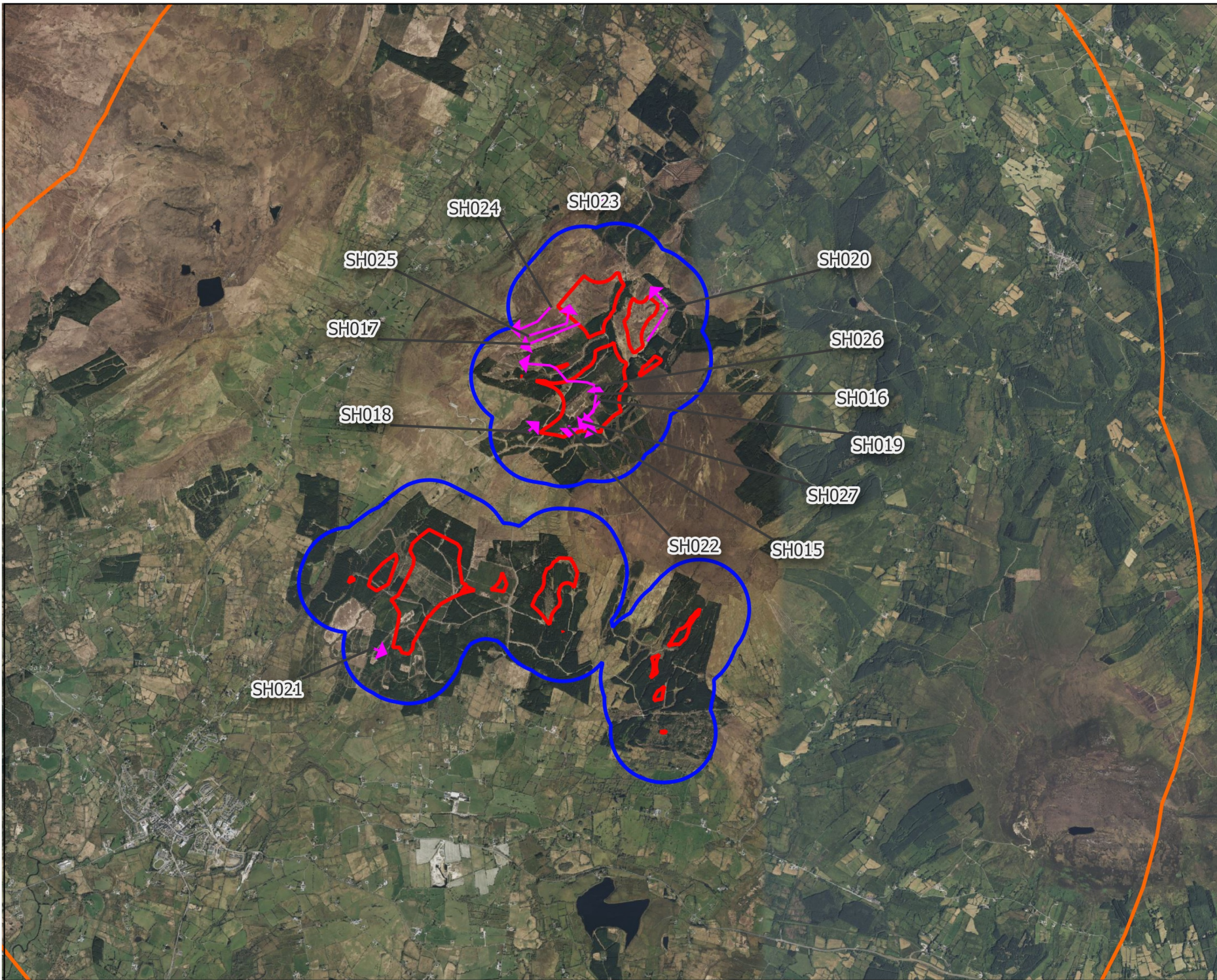
Map Legend

- Wind Farm Site
- 500m Survey Radius
- 5km Survey Radius
- Flightline



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Map Legend

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- 500m Survey Radius
- 5km Survey Radius
- ➔ Flightline

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Drawing Title
Breeding Raptor Survey Sparrowhawk Observations

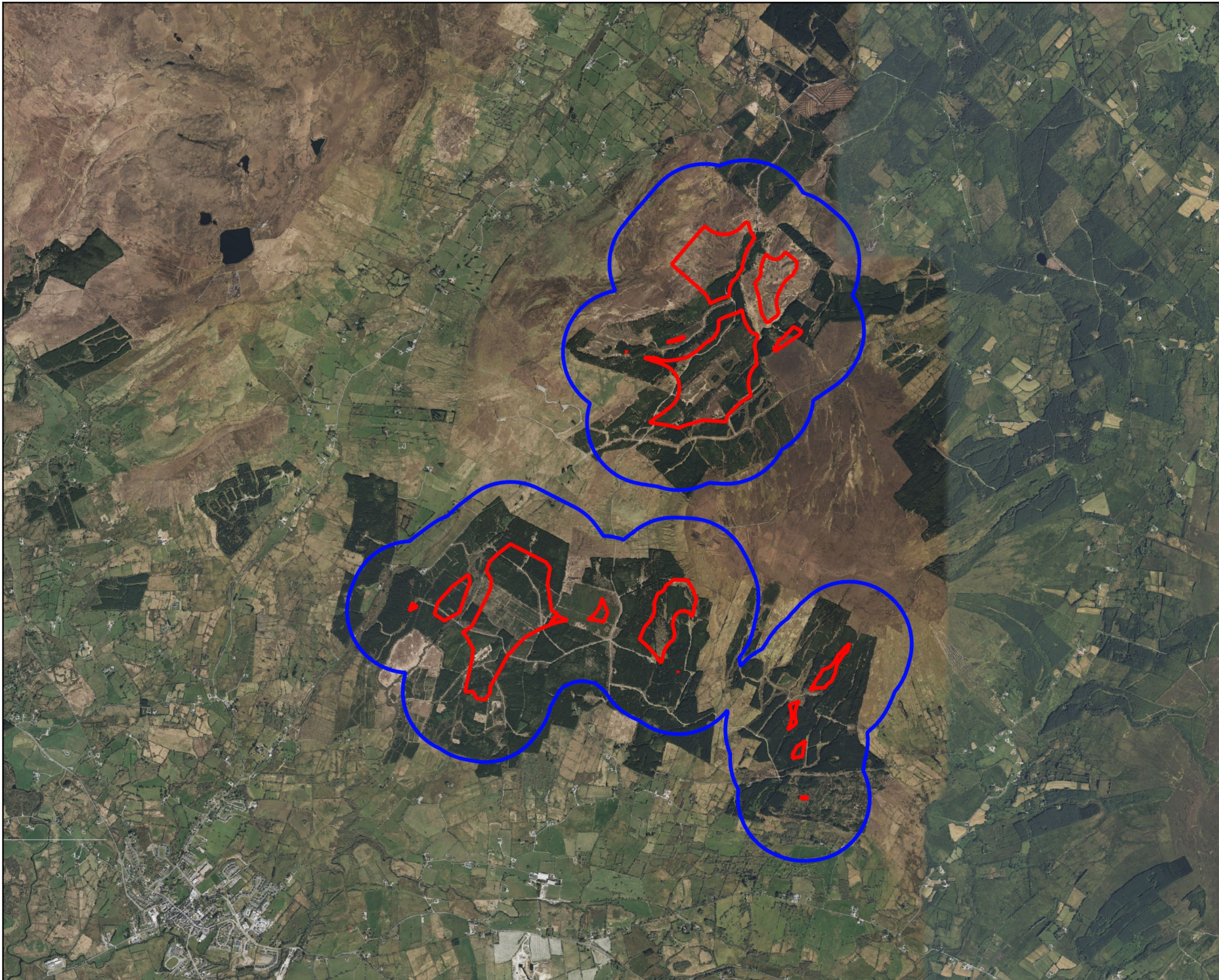
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Project No. 200217-a	Drawing No. Fig 3.4
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Scale 1:50,000	Date 10.09.2024
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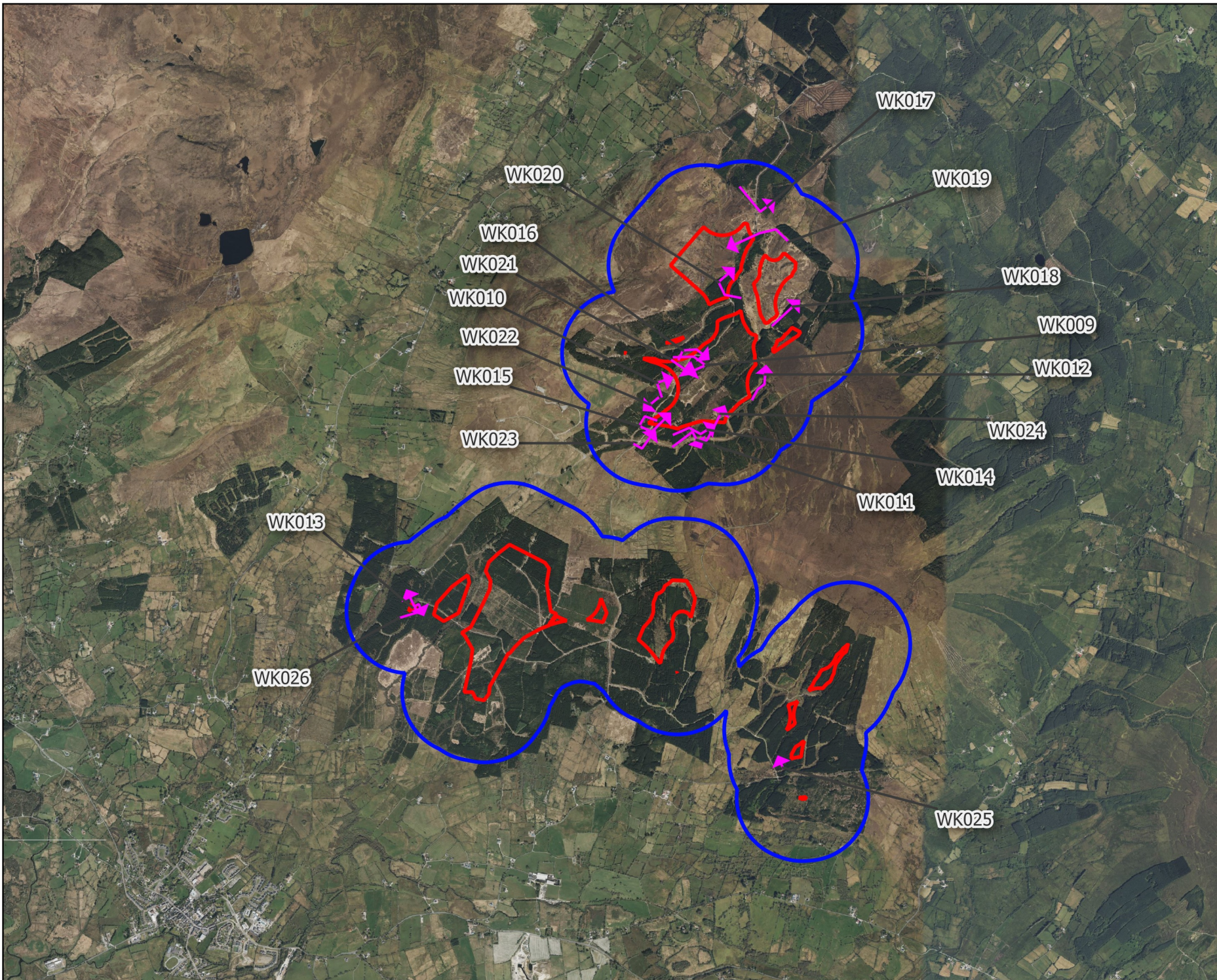
Map Legend

- Wind farm Site
- 500m Survey Radius



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Map Legend

- Wind Farm Site
- 500m Survey Radius
- Flightline

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Drawing Title
Breeding Woodcock Survey Observations

Project Title
Lissinagroagh Wind Farm

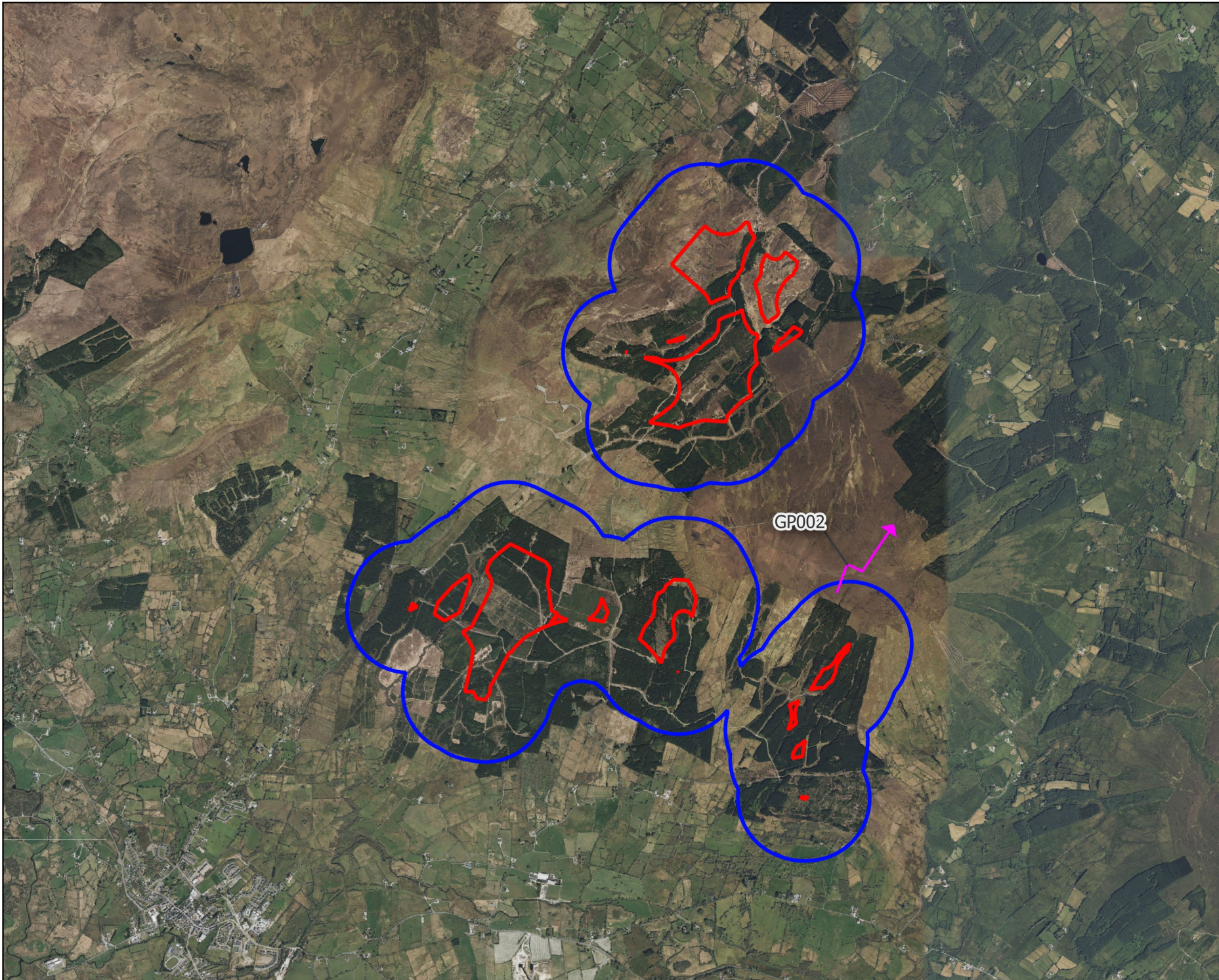
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Map Legend

- Wind Farm Site
- 500m Survey Radius
- ➔ Flightline



Drawing Title

Incidental Golden Plover Observations

Project Title

Lissinagroagh Wind Farm

Drawn By

ZOC

Checked By

AOD

Project No.

200217-a

Drawing No.

Fig 5.1

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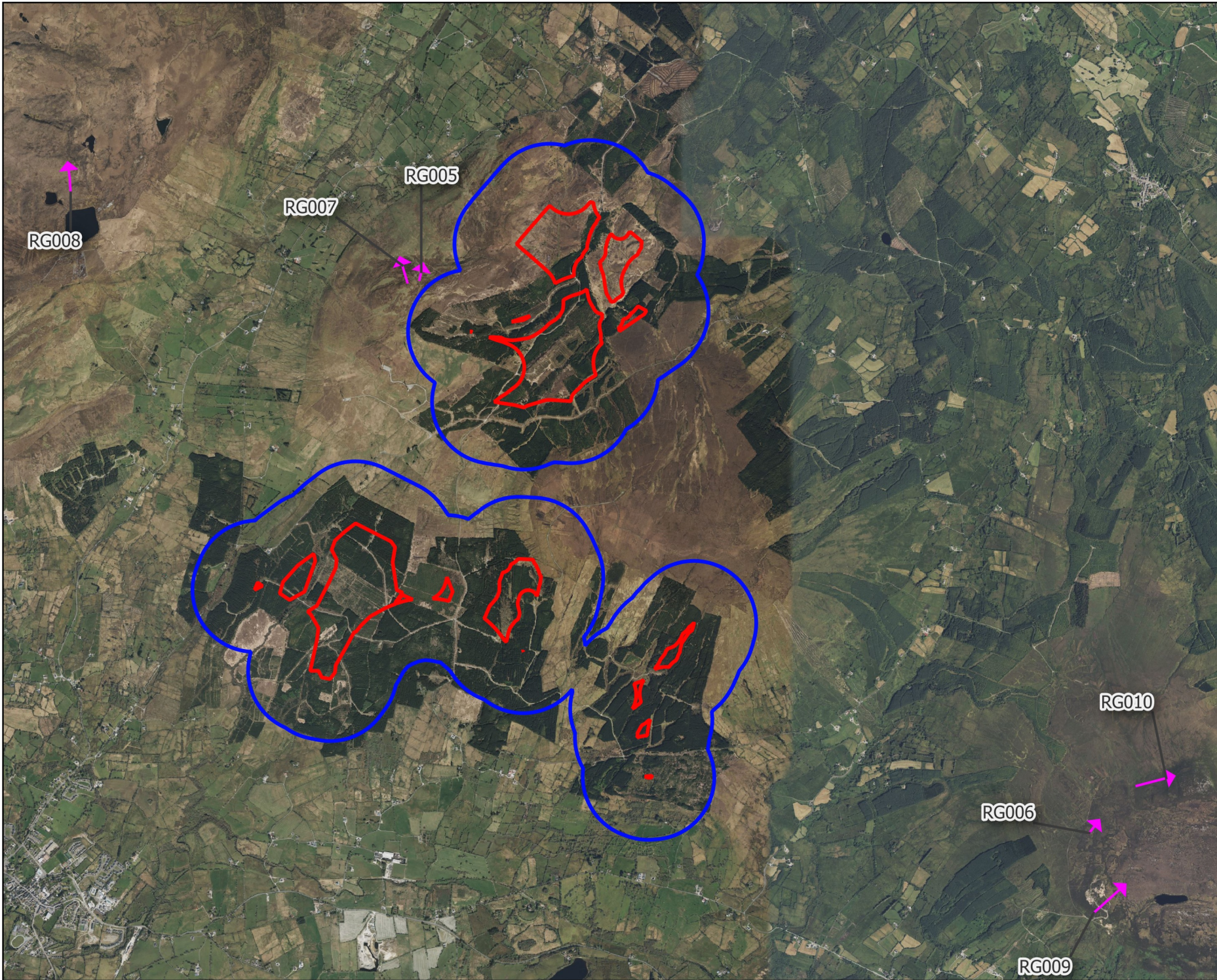
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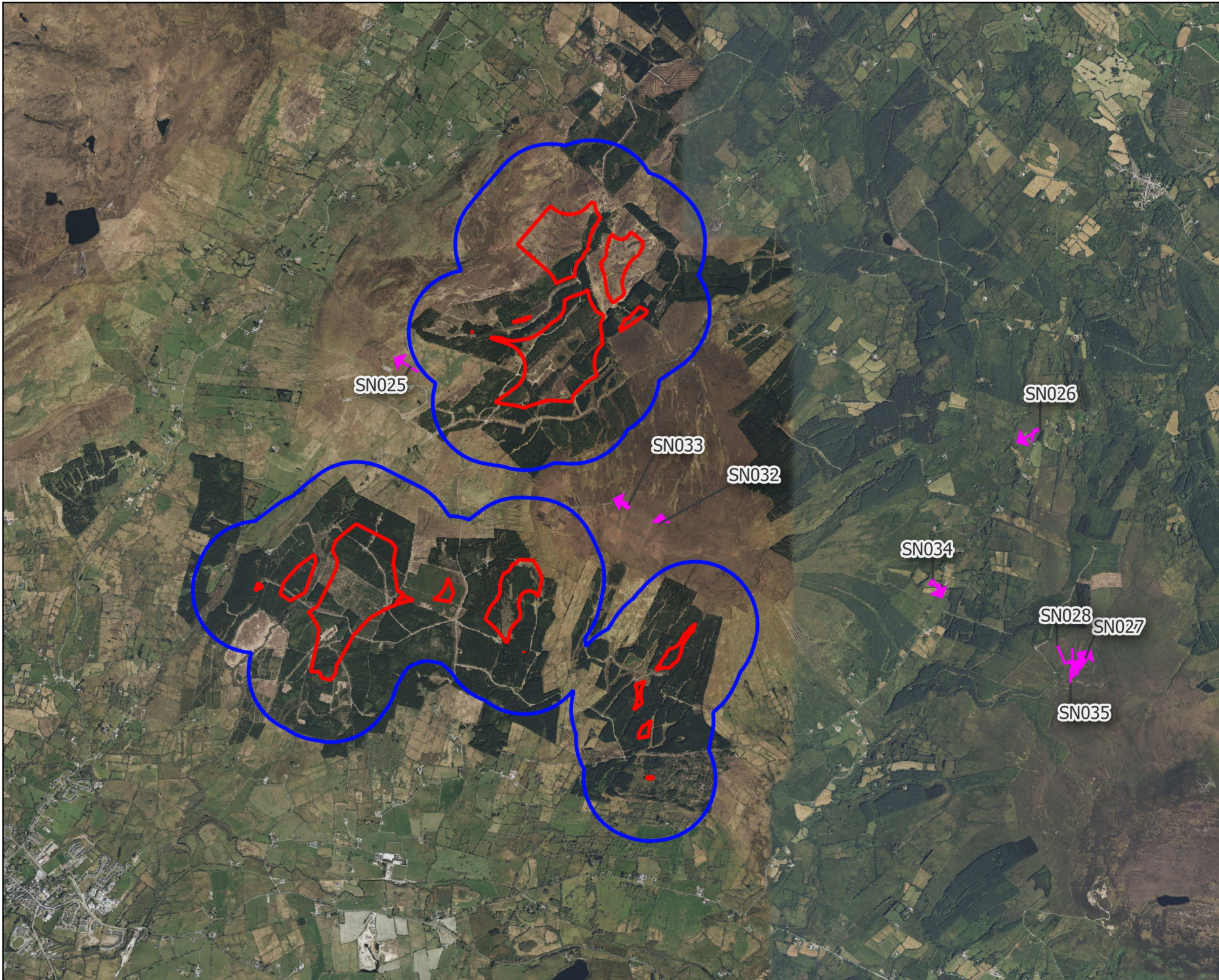
Map Legend

- Wind Farm Site
- 500m Survey Radius
- Flightline




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<p><small>Drawing Title</small></p> <p>Incidental Red Grouse Observations</p>	
<p><small>Project Title</small></p> <p>Lissinagroagh Wind Farm</p>	
<small>Drawn By</small>	<small>Checked By</small>
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200217-a	Fig 5.2
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Map Legend

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-  500m Survey Radius
-  Flightline

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Drawing Title

Incidental Snipe Observations

Project Title

Lissinagroagh Wind Farm

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Scale 1:40,000	Date 10.09.2024



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APPENDIX 2

SURVEY DATA



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Table 1 Vantage Point Survey Effort

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
16/04/2020	Vantage Point Survey	2	1:00 starting at 15:00	Visibility: good; Wind speed and direction: moderate breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
16/04/2020	Vantage Point Survey	2	1:00 starting at 16:00	Visibility: good; Wind speed and direction: moderate breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
16/04/2020	Vantage Point Survey	2	1:00 starting at 17:00	Visibility: good; Wind speed and direction: gentle breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
16/04/2020	Vantage Point Survey	2	1:00 starting at 18:30	Visibility: moderate; Wind speed and direction: moderate breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
16/04/2020	Vantage Point Survey	2	1:00 starting at 19:30	Visibility: moderate; Wind speed and direction: moderate breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
16/04/2020	Vantage Point Survey	2	1:00 starting at 20:30	Visibility: moderate; Wind speed and direction: moderate breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
17/04/2020	Vantage Point Survey	1	1:00 starting at 15:00	Visibility: good; Wind speed and direction: fresh breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
17/04/2020	Vantage Point Survey	1	1:00 starting at 16:00	Visibility: good; Wind speed and direction: fresh breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
17/04/2020	Vantage Point Survey	1	1:00 starting at 17:00	Visibility: good; Wind speed and direction: fresh breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
17/04/2020	Vantage Point Survey	3	1:00 starting at 18:30	Visibility: good; Wind speed and direction: fresh breeze N ; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
17/04/2020	Vantage Point Survey	3	1:00 starting at 19:30	Visibility: good; Wind speed and direction: fresh breeze N; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
17/04/2020	Vantage Point Survey	3	1:00 starting at 20:30	Visibility: good; Wind speed and direction: moderate breeze N; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
20/04/2020	Vantage Point Survey	3	1:00 starting at 15:10	Visibility: good; Wind speed and direction: fresh breeze NW; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD



Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
20/04/2020	Vantage Point Survey	3	1:00 starting at 16:10	Visibility: good; Wind speed and direction: moderate breeze NW; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
20/04/2020	Vantage Point Survey	3	1:00 starting at 17:10	Visibility: good; Wind speed and direction: moderate breeze NW; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
20/04/2020	Vantage Point Survey	1	1:00 starting at 18:40	Visibility: good; Wind speed and direction: fresh breeze N ; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
20/04/2020	Vantage Point Survey	1	1:00 starting at 19:40	Visibility: good; Wind speed and direction: fresh breeze N; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
20/04/2020	Vantage Point Survey	1	1:00 starting at 20:40	Visibility: good; Wind speed and direction: fresh breeze N; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
21/04/2020	Vantage Point Survey	4	1:00 starting at 15:10	Visibility: good; Wind speed and direction: strong breeze E; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
21/04/2020	Vantage Point Survey	4	1:00 starting at 16:10	Visibility: good; Wind speed and direction: strong breeze E; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
21/04/2020	Vantage Point Survey	4	1:00 starting at 17:10	Visibility: good; Wind speed and direction: strong breeze E; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
21/04/2020	Vantage Point Survey	4	1:00 starting at 18:40	Visibility: good; Wind speed and direction: fresh breeze E; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
21/04/2020	Vantage Point Survey	4	1:00 starting at 19:40	Visibility: good; Wind speed and direction: gentle breeze E; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
21/04/2020	Vantage Point Survey	4	1:00 starting at 20:40	Visibility: good; Wind speed and direction: light air E; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
20/05/2020	Vantage Point Survey	1	1:00 starting at 04:30	Visibility: moderate; Wind speed and direction: light breeze S; Cloud cover and height: <150m% <150m; Rain: none; Frost: none; Snow: none		AOD
20/05/2020	Vantage Point Survey	1	1:00 starting at 05:30	Visibility: poor; Wind speed and direction: light breeze S; Cloud cover and height: <150m% <150m; Rain: none; Frost: none; Snow: none		AOD
20/05/2020	Vantage Point Survey	1	1:00 starting at 06:30	Visibility: poor; Wind speed and direction: gentle breeze S; Cloud cover and height: <150m% <150m; Rain: none; Frost: none; Snow: none		AOD
20/05/2020	Vantage Point Survey	1	1:00 starting at 08:00	Visibility: poor; Wind speed and direction: gentle breeze S; Cloud cover and height: <150m% <150m; Rain: none; Frost: none; Snow: none		AOD
20/05/2020	Vantage Point Survey	4	1:00 starting at 09:00	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: <150m% <150m; Rain: none; Frost: none; Snow: none		AOD

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
20/05/2020	Vantage Point Survey	4	1:00 starting at 10:00	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: <150m% <150m; Rain: none; Frost: none; Snow: none		AOD
21/05/2020	Vantage Point Survey	4	1:00 starting at 04:20	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: <150m% <150m; Rain: none; Frost: none; Snow: none		AOD
21/05/2020	Vantage Point Survey	4	1:00 starting at 05:20	Visibility: moderate; Wind speed and direction: light breeze S; Cloud cover and height: <150m% <150m; Rain: none; Frost: none; Snow: none		AOD
21/05/2020	Vantage Point Survey	4	1:00 starting at 06:20	Visibility: good; Wind speed and direction: light breeze S; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
21/05/2020	Vantage Point Survey	4	1:00 starting at 07:50	Visibility: good; Wind speed and direction: light breeze S; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
21/05/2020	Vantage Point Survey	1	1:00 starting at 09:00	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
21/05/2020	Vantage Point Survey	1	1:00 starting at 10:00	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
25/05/2020	Vantage Point Survey	3	1:00 starting at 04:15	Visibility: good; Wind speed and direction: light breeze SW; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
25/05/2020	Vantage Point Survey	3	1:00 starting at 05:15	Visibility: good; Wind speed and direction: moderate breeze SW; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
25/05/2020	Vantage Point Survey	3	1:00 starting at 06:15	Visibility: good; Wind speed and direction: fresh breeze SW; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
25/05/2020	Vantage Point Survey	3	1:00 starting at 07:45	Visibility: good; Wind speed and direction: fresh breeze SW; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
25/05/2020	Vantage Point Survey	3	1:00 starting at 08:45	Visibility: good; Wind speed and direction: fresh breeze SW; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
25/05/2020	Vantage Point Survey	3	1:00 starting at 09:45	Visibility: good; Wind speed and direction: fresh breeze SW; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
26/05/2020	Vantage Point Survey	2	1:00 starting at 04:15	Visibility: limited; Wind speed and direction: light air W; Cloud cover and height: <150m% <150m; Rain: none; Frost: none; Snow: none		AOD
26/05/2020	Vantage Point Survey	2	1:00 starting at 05:15	Visibility: limited; Wind speed and direction: light air W; Cloud cover and height: <150m% <150m; Rain: none; Frost: none; Snow: none		AOD
26/05/2020	Vantage Point Survey	2	1:00 starting at 06:15	Visibility: limited; Wind speed and direction: light breeze W; Cloud cover and height: <150m% <150m; Rain: none; Frost: none; Snow: none		AOD
26/05/2020	Vantage Point Survey	2	1:00 starting at 07:45	Visibility: poor; Wind speed and direction: gentle breeze W; Cloud cover and height: <150m% <150m; Rain: none; Frost: none; Snow: none		AOD



Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
26/05/2020	Vantage Point Survey	2	1:00 starting at 08:45	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
26/05/2020	Vantage Point Survey	2	1:00 starting at 09:45	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
10/06/2020	Vantage Point Survey	4	1:00 starting at 18:10	Visibility: moderate; Wind speed and direction: moderate breeze N ; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
10/06/2020	Vantage Point Survey	4	1:00 starting at 19:10	Visibility: moderate; Wind speed and direction: gentle breeze N; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
10/06/2020	Vantage Point Survey	4	1:00 starting at 20:10	Visibility: good; Wind speed and direction: moderate breeze N; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
11/06/2020	Vantage Point Survey	1	1:00 starting at 18:00	Visibility: good; Wind speed and direction: fresh breeze N; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
11/06/2020	Vantage Point Survey	1	1:00 starting at 19:00	Visibility: good; Wind speed and direction: moderate breeze N; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
11/06/2020	Vantage Point Survey	1	1:00 starting at 20:00	Visibility: good; Wind speed and direction: fresh breeze N; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
15/06/2020	Vantage Point Survey	1	1:00 starting at 10:30	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
15/06/2020	Vantage Point Survey	1	1:00 starting at 11:30	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
15/06/2020	Vantage Point Survey	1	1:00 starting at 12:30	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
15/06/2020	Vantage Point Survey	4	1:00 starting at 14:00	Visibility: good; Wind speed and direction: light air E; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
15/06/2020	Vantage Point Survey	4	1:00 starting at 15:00	Visibility: good; Wind speed and direction: light breeze E; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
15/06/2020	Vantage Point Survey	4	1:00 starting at 16:00	Visibility: good; Wind speed and direction: light air E; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
23/06/2020	Vantage Point Survey	2	1:00 starting at 17:00	Visibility: limited; Wind speed and direction: moderate breeze W; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD



Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
23/06/2020	Vantage Point Survey	2	1:00 starting at 18:00	Visibility: limited; Wind speed and direction: fresh breeze W; Cloud cover and height: 66-100% <150m; Rain: persistent; Frost: none; Snow: none		AOD
23/06/2020	Vantage Point Survey	2	1:00 starting at 19:00	Visibility: limited; Wind speed and direction: fresh breeze W; Cloud cover and height: 66-100% <150m; Rain: persistent; Frost: none; Snow: none		AOD
24/06/2020	Vantage Point Survey	2	1:00 starting at 17:30	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
24/06/2020	Vantage Point Survey	2	1:00 starting at 18:30	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
24/06/2020	Vantage Point Survey	2	1:00 starting at 19:30	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
25/06/2020	Vantage Point Survey	3	1:00 starting at 14:30	Visibility: good; Wind speed and direction: gentle breeze NW; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
25/06/2020	Vantage Point Survey	3	1:00 starting at 15:30	Visibility: good; Wind speed and direction: light breeze NW; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
25/06/2020	Vantage Point Survey	3	1:00 starting at 16:30	Visibility: good; Wind speed and direction: light breeze NW; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
25/06/2020	Vantage Point Survey	3	1:00 starting at 18:00	Visibility: good; Wind speed and direction: light breeze N; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
25/06/2020	Vantage Point Survey	3	1:00 starting at 19:00	Visibility: good; Wind speed and direction: light breeze N; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
25/06/2020	Vantage Point Survey	3	1:00 starting at 20:00	Visibility: good; Wind speed and direction: light air N; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		AOD
07/07/2020	Vantage Point Survey	2	1:00 starting at 11:45	Visibility: poor; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
07/07/2020	Vantage Point Survey	2	1:00 starting at 12:45	Visibility: moderate; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
07/07/2020	Vantage Point Survey	2	1:00 starting at 13:45	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
07/07/2020	Vantage Point Survey	4	1:00 starting at 15:15	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD



Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
07/07/2020	Vantage Point Survey	4	1:00 starting at 16:15	Visibility: moderate; Wind speed and direction: light breeze SE; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
07/07/2020	Vantage Point Survey	4	1:00 starting at 17:15	Visibility: good; Wind speed and direction: light breeze SE; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
08/07/2020	Vantage Point Survey	2	1:00 starting at 12:00	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
08/07/2020	Vantage Point Survey	2	1:00 starting at 13:00	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
08/07/2020	Vantage Point Survey	2	1:00 starting at 14:00	Visibility: poor; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
08/07/2020	Vantage Point Survey	1	1:00 starting at 16:10	Visibility: poor; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
08/07/2020	Vantage Point Survey	1	1:00 starting at 17:10	Visibility: limited; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% <150m; Rain: persistent; Frost: none; Snow: none		AOD
09/07/2020	Vantage Point Survey	4	1:00 starting at 11:00	Visibility: good; Wind speed and direction: light breeze S; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
09/07/2020	Vantage Point Survey	4	1:00 starting at 12:00	Visibility: good; Wind speed and direction: light breeze S; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
09/07/2020	Vantage Point Survey	4	1:00 starting at 13:00	Visibility: good; Wind speed and direction: light breeze S; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
20/07/2020	Vantage Point Survey	1	1:00 starting at 14:30	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
20/07/2020	Vantage Point Survey	1	1:00 starting at 16:00	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
20/07/2020	Vantage Point Survey	1	1:00 starting at 17:00	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
20/07/2020	Vantage Point Survey	1	1:00 starting at 18:00	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
29/07/2020	Vantage Point Survey	3	1:00 starting at 10:45	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD



Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
29/07/2020	Vantage Point Survey	3	1:00 starting at 11:45	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
29/07/2020	Vantage Point Survey	3	1:00 starting at 12:45	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
29/07/2020	Vantage Point Survey	3	1:00 starting at 14:15	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
29/07/2020	Vantage Point Survey	3	1:00 starting at 15:15	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: heavy showers; Frost: none; Snow: none		AOD
29/07/2020	Vantage Point Survey	3	1:00 starting at 16:15	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: heavy showers; Frost: none; Snow: none		AOD
05/08/2020	Vantage Point Survey	2	1:00 starting at 16:00	Visibility: good; Wind speed and direction: fresh breeze SW; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
05/08/2020	Vantage Point Survey	2	1:00 starting at 17:00	Visibility: good; Wind speed and direction: fresh breeze SW; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
05/08/2020	Vantage Point Survey	2	1:00 starting at 18:00	Visibility: good; Wind speed and direction: moderate breeze SW; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
05/08/2020	Vantage Point Survey	2	1:00 starting at 19:30	Visibility: good; Wind speed and direction: moderate breeze SW; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
05/08/2020	Vantage Point Survey	2	1:00 starting at 20:30	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
05/08/2020	Vantage Point Survey	2	1:00 starting at 21:30	Visibility: good; Wind speed and direction: light breeze SW; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
06/08/2020	Vantage Point Survey	4	1:00 starting at 15:50	Visibility: good; Wind speed and direction: fresh breeze SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
06/08/2020	Vantage Point Survey	4	1:00 starting at 16:50	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
06/08/2020	Vantage Point Survey	4	1:00 starting at 17:50	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
06/08/2020	Vantage Point Survey	1	1:00 starting at 19:20	Visibility: good; Wind speed and direction: fresh breeze SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD



Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
06/08/2020	Vantage Point Survey	1	1:00 starting at 20:20	Visibility: good; Wind speed and direction: fresh breeze SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
06/08/2020	Vantage Point Survey	1	1:00 starting at 21:20	Visibility: good; Wind speed and direction: fresh breeze SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
10/08/2020	Vantage Point Survey	1	1:00 starting at 15:45	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
10/08/2020	Vantage Point Survey	1	1:00 starting at 16:45	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
10/08/2020	Vantage Point Survey	1	1:00 starting at 17:45	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
10/08/2020	Vantage Point Survey	4	1:00 starting at 19:15	Visibility: moderate; Wind speed and direction: moderate breeze NW; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
10/08/2020	Vantage Point Survey	4	1:00 starting at 20:15	Visibility: poor; Wind speed and direction: moderate breeze NW; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
10/08/2020	Vantage Point Survey	4	1:00 starting at 21:15	Visibility: moderate; Wind speed and direction: moderate breeze NW; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
11/08/2020	Vantage Point Survey	3	1:00 starting at 15:45	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
11/08/2020	Vantage Point Survey	3	1:00 starting at 16:45	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
11/08/2020	Vantage Point Survey	3	1:00 starting at 17:45	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
11/08/2020	Vantage Point Survey	3	1:00 starting at 19:15	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		AOD
11/08/2020	Vantage Point Survey	3	1:00 starting at 20:15	Visibility: good; Wind speed and direction: light air W; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
11/08/2020	Vantage Point Survey	3	1:00 starting at 21:15	Visibility: good; Wind speed and direction: light air W; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
03/09/2020	Vantage Point Survey	4	1:00 starting at 05:50	Visibility: moderate; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% <150m; Rain: light showers; Frost: none; Snow: none		AOD

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
03/09/2020	Vantage Point Survey	4	1:00 starting at 06:50	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% <150m; Rain: light showers; Frost: none; Snow: none		AOD
03/09/2020	Vantage Point Survey	4	1:00 starting at 07:50	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
03/09/2020	Vantage Point Survey	4	1:00 starting at 09:20	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
03/09/2020	Vantage Point Survey	4	1:00 starting at 10:20	Visibility: good; Wind speed and direction: fresh breeze S; Cloud cover and height: 66-100% >500m; Rain: light showers; Frost: none; Snow: none		AOD
03/09/2020	Vantage Point Survey	4	1:00 starting at 11:20	Visibility: good; Wind speed and direction: fresh breeze S; Cloud cover and height: 66-100% >500m; Rain: heavy showers; Frost: none; Snow: none		AOD
04/09/2020	Vantage Point Survey	2	1:00 starting at 05:50	Visibility: poor; Wind speed and direction: fresh breeze SE; Cloud cover and height: 66-100% <150m; Rain: light showers; Frost: none; Snow: none		AOD
04/09/2020	Vantage Point Survey	2	1:00 starting at 06:50	Visibility: poor; Wind speed and direction: strong breeze SE; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
04/09/2020	Vantage Point Survey	2	1:00 starting at 07:50	Visibility: limited; Wind speed and direction: strong breeze SE; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
13/09/2020	Vantage Point Survey	2	1:00 starting at 11:30	Visibility: good; Wind speed and direction: near gale SE; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
13/09/2020	Vantage Point Survey	2	1:00 starting at 12:30	Visibility: moderate; Wind speed and direction: near gale SE; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
13/09/2020	Vantage Point Survey	2	1:00 starting at 13:30	Visibility: moderate; Wind speed and direction: near gale SE; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
13/09/2020	Vantage Point Survey	1	1:00 starting at 15:00	Visibility: good; Wind speed and direction: near gale S; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD



Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
13/09/2020	Vantage Point Survey	1	1:00 starting at 16:00	Visibility: good; Wind speed and direction: near gale S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
13/09/2020	Vantage Point Survey	1	1:00 starting at 17:00	Visibility: good; Wind speed and direction: strong breeze S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
14/09/2020	Vantage Point Survey	1	1:00 starting at 06:10	Visibility: moderate; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
14/09/2020	Vantage Point Survey	1	1:00 starting at 07:10	Visibility: limited; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
14/09/2020	Vantage Point Survey	3	1:00 starting at 08:15	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
14/09/2020	Vantage Point Survey	3	1:00 starting at 09:45	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
14/09/2020	Vantage Point Survey	3	1:00 starting at 10:45	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
14/09/2020	Vantage Point Survey	3	1:00 starting at 11:45	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
30/09/2020	Vantage Point Survey	3	1:00 starting at 06:35	Visibility: poor; Wind speed and direction: light breeze S; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
30/09/2020	Vantage Point Survey	3	1:00 starting at 07:35	Visibility: poor; Wind speed and direction: light breeze S; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
30/09/2020	Vantage Point Survey	1	1:00 starting at 08:45	Visibility: poor; Wind speed and direction: light breeze S; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD

Table 2 Breeding Walkover Survey Effort

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
06/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 11:40	Visibility: good; Wind speed and direction: fresh breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
06/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 12:40	Visibility: good; Wind speed and direction: fresh breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
06/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 13:40	Visibility: good; Wind speed and direction: fresh breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
06/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 14:40	Visibility: good; Wind speed and direction: fresh breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
06/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 15:40	Visibility: good; Wind speed and direction: moderate breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
06/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 16:40	Visibility: good; Wind speed and direction: gentle breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
07/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 12:30	Visibility: good; Wind speed and direction: fresh breeze NE; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
07/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 13:30	Visibility: good; Wind speed and direction: fresh breeze NE; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
07/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 14:30	Visibility: good; Wind speed and direction: moderate breeze NE; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
07/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 15:30	Visibility: good; Wind speed and direction: gentle breeze NE; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
07/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 16:30	Visibility: good; Wind speed and direction: light breeze NE; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
07/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 17:30	Visibility: good; Wind speed and direction: light breeze NE; Cloud cover and height: 150-500m% 150-500m; Rain: heavy showers; Frost: none; Snow: none		AOD
08/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 12:30	Visibility: good; Wind speed and direction: light breeze N ; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
08/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 13:30	Visibility: good; Wind speed and direction: light air N; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
08/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 14:30	Visibility: good; Wind speed and direction: light air N; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
08/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 15:30	Visibility: good; Wind speed and direction: light air N; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
08/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 16:30	Visibility: good; Wind speed and direction: light air N; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
08/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 17:30	Visibility: good; Wind speed and direction: light air N; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
11/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 12:30	Visibility: good; Wind speed and direction: gentle breeze N; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
11/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 13:30	Visibility: good; Wind speed and direction: moderate breeze N; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
11/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 14:30	Visibility: good; Wind speed and direction: fresh breeze N; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
11/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 15:30	Visibility: good; Wind speed and direction: fresh breeze NW; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
11/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 16:30	Visibility: good; Wind speed and direction: strong breeze NW; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
11/05/2020	Breeding Walkover Survey	500m Buffer	1:00 starting at 17:30	Visibility: good; Wind speed and direction: strong breeze NW; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
16/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 10:20	Visibility: moderate; Wind speed and direction: light air E; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow:		AOD
16/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 11:20	Visibility: moderate; Wind speed and direction: light air E; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
16/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 12:20	Visibility: good; Wind speed and direction: light air E; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
16/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 13:50	Visibility: good; Wind speed and direction: light air E; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
16/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 14:50	Visibility: good; Wind speed and direction: light air E; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
16/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 15:50	Visibility: good; Wind speed and direction: light air E; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
17/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 11:00	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
17/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 12:00	Visibility: good; Wind speed and direction: light breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
17/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 13:00	Visibility: good; Wind speed and direction: light breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
17/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 14:00	Visibility: good; Wind speed and direction: light breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
17/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 15:00	Visibility: good; Wind speed and direction: light breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
17/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 16:00	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
19/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 11:30	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
19/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 12:30	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
19/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 13:30	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
19/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 15:00	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 66-100% 150-500m; Rain: heavy showers; Frost: none; Snow: none		AOD
19/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 16:00	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 66-100% 150-500m; Rain: heavy showers; Frost: none; Snow: none		AOD
19/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 17:00	Visibility: poor; Wind speed and direction: light breeze W; Cloud cover and height: 66-100% 150-500m; Rain: persistent; Frost: none; Snow: none		AOD

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
22/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 12:00	Visibility: good; Wind speed and direction: fresh breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
22/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 13:00	Visibility: good; Wind speed and direction: fresh breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
22/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 14:00	Visibility: good; Wind speed and direction: fresh breeze SE; Cloud cover and height: 66-100% <150m; Rain: light showers; Frost: none; Snow: none		AOD
22/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 15:30	Visibility: good; Wind speed and direction: fresh breeze SE; Cloud cover and height: 66-100% <150m; Rain: light showers; Frost: none; Snow: none		AOD
22/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 16:30	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
22/06/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 17:30	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
13/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 12:00	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
13/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 13:00	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
13/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 14:00	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
13/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 15:30	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
13/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 16:30	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
13/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 17:30	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
14/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 07:45	Visibility: poor; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% <150m; Rain: light showers; Frost: none; Snow: none		AOD

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
14/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 08:45	Visibility: poor; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
14/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 09:45	Visibility: poor; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% <150m; Rain: persistent; Frost: none; Snow: none		AOD
14/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 10:45	Visibility: poor; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% <150m; Rain: persistent; Frost: none; Snow: none		AOD
14/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 11:45	Visibility: limited; Wind speed and direction: moderate breeze SW; Cloud cover and height: 66-100% <150m; Rain: persistent; Frost: none; Snow: none		AOD
14/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 12:45	Visibility: limited; Wind speed and direction: moderate breeze SW; Cloud cover and height: 66-100% <150m; Rain: persistent; Frost: none; Snow: none		AOD
15/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 11:45	Visibility: limited; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
15/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 12:45	Visibility: limited; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
15/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 13:45	Visibility: poor; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
15/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 14:45	Visibility: poor; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
15/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 15:45	Visibility: poor; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
15/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 16:45	Visibility: poor; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
16/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 11:00	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
16/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 12:00	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
16/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 13:00	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD



Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
16/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 14:00	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
16/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 15:00	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
16/07/2020	Breeding Walkover Survey	500m buffer	1:00 starting at 16:00	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD

Table 3 Breeding Raptor Survey Effort

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
22/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 12:00	Visibility: good; Wind speed and direction: moderate breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
22/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 13:00	Visibility: good; Wind speed and direction: gentle breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
22/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 14:00	Visibility: good; Wind speed and direction: gentle breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
22/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 15:30	Visibility: good; Wind speed and direction: gentle breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
22/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 16:30	Visibility: good; Wind speed and direction: light breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
22/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 17:30	Visibility: good; Wind speed and direction: gentle breeze NE; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
23/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 12:20	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
23/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 13:20	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
23/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 14:20	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
23/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 15:50	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
23/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 16:50	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
23/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 17:50	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
24/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 12:00	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
24/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 13:00	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
24/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 14:00	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
24/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 15:00	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
24/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 16:30	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
24/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 17:30	Visibility: good; Wind speed and direction: light air W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
27/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 12:00	Visibility: good; Wind speed and direction: light breeze S; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
27/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 13:00	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 150-500m% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
27/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 14:00	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 150-500m% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
27/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 15:00	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 150-500m% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
27/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 16:00	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 150-500m% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
27/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 17:00	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 150-500m% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
28/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 11:20	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
28/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 12:20	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: >500m% >500m; Rain: light showers; Frost: none; Snow: none		AOD
28/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 13:20	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
28/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 14:20	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
28/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 15:20	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
28/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 16:20	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
29/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 11:30	Visibility: poor; Wind speed and direction: light breeze W; Cloud cover and height: <150m% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
29/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 12:30	Visibility: poor; Wind speed and direction: gentle breeze W; Cloud cover and height: <150m% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
29/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 13:30	Visibility: poor; Wind speed and direction: light breeze W; Cloud cover and height: <150m% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
29/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 15:00	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: 150-500m% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
29/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 16:00	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
29/04/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 17:00	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
12/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 11:30	Visibility: good; Wind speed and direction: strong breeze SW; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
12/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 12:30	Visibility: good; Wind speed and direction: fresh breeze SW; Cloud cover and height: 150-500m% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
12/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 13:30	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 150-500m% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
12/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 15:00	Visibility: good; Wind speed and direction: gentle breeze SW; Cloud cover and height: 150-500m% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
12/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 16:00	Visibility: good; Wind speed and direction: light breeze SW; Cloud cover and height: 150-500m% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
12/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 17:00	Visibility: good; Wind speed and direction: light breeze SW; Cloud cover and height: 150-500m% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
13/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 12:00	Visibility: good; Wind speed and direction: gentle breeze NW; Cloud cover and height: 150-500m% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
13/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 13:00	Visibility: good; Wind speed and direction: gentle breeze NW; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
13/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 14:00	Visibility: good; Wind speed and direction: gentle breeze NW; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
13/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 15:00	Visibility: good; Wind speed and direction: gentle breeze NW; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
13/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 16:00	Visibility: good; Wind speed and direction: gentle breeze NW; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
13/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 17:00	Visibility: good; Wind speed and direction: moderate breeze NW; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
14/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 12:00	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
14/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 13:00	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
14/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 14:00	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
14/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 15:00	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
14/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 16:00	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
14/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 17:00	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
15/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 11:00	Visibility: good; Wind speed and direction: moderate breeze S ; Cloud cover and height: >500m% >500m; Rain: drizzle; Frost: none; Snow: none		AOD
15/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 12:00	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
15/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 13:00	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
15/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 14:00	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
15/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 15:00	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
15/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 16:00	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
18/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 12:00	Visibility: moderate; Wind speed and direction: light breeze W; Cloud cover and height: <150m% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
18/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 13:00	Visibility: moderate; Wind speed and direction: gentle breeze W; Cloud cover and height: <150m% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
18/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 14:00	Visibility: moderate; Wind speed and direction: moderate breeze W; Cloud cover and height: <150m% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
18/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 15:00	Visibility: moderate; Wind speed and direction: moderate breeze S; Cloud cover and height: <150m% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
18/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 16:00	Visibility: moderate; Wind speed and direction: moderate breeze S; Cloud cover and height: <150m% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
18/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 17:00	Visibility: moderate; Wind speed and direction: moderate breeze S; Cloud cover and height: <150m% <150m; Rain: heavy showers; Frost: none; Snow: none		AOD
19/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 11:00	Visibility: poor; Wind speed and direction: gentle breeze SW; Cloud cover and height: <150m% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
19/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 12:00	Visibility: poor; Wind speed and direction: moderate breeze SW; Cloud cover and height: <150m% <150m; Rain: drizzle; Frost: none; Snow: none		AOD

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
19/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 13:00	Visibility: poor; Wind speed and direction: gentle breeze SW; Cloud cover and height: <150m% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
19/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 14:00	Visibility: moderate; Wind speed and direction: light breeze SW; Cloud cover and height: 150-500m% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
19/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 15:30	Visibility: moderate; Wind speed and direction: light breeze SW; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
19/05/2020	Breeding Raptor Survey	500m Buffer	1:00 starting at 16:30	Visibility: good; Wind speed and direction: light breeze SW; Cloud cover and height: 150-500m% 150-500m; Rain: none; Frost: none; Snow: none		AOD
02/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 12:30	Visibility: good; Wind speed and direction: light breeze E; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
02/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 13:30	Visibility: good; Wind speed and direction: gentle breeze E; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
02/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 14:30	Visibility: good; Wind speed and direction: gentle breeze E; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
02/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 15:30	Visibility: good; Wind speed and direction: gentle breeze E; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
02/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 16:30	Visibility: good; Wind speed and direction: gentle breeze E; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
02/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 17:30	Visibility: moderate; Wind speed and direction: moderate breeze E; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
03/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 12:30	Visibility: good; Wind speed and direction: strong breeze NW; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
03/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 13:30	Visibility: good; Wind speed and direction: fresh breeze NW; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
03/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 14:30	Visibility: good; Wind speed and direction: fresh breeze NW; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
03/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 16:00	Visibility: good; Wind speed and direction: fresh breeze NW; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		AOD

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
03/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 17:00	Visibility: good; Wind speed and direction: fresh breeze NW; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		AOD
03/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 18:00	Visibility: good; Wind speed and direction: fresh breeze NW; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		AOD
04/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 13:00	Visibility: good; Wind speed and direction: moderate breeze W; Cloud cover and height: 66-100% <150m; Rain: drizzle; Frost: none; Snow: none		AOD
04/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 14:00	Visibility: good; Wind speed and direction: fresh breeze W; Cloud cover and height: 66-100% <150m; Rain: none; Frost: none; Snow: none		AOD
04/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 15:00	Visibility: good; Wind speed and direction: fresh breeze W; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
04/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 16:00	Visibility: good; Wind speed and direction: fresh breeze W; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
04/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 17:00	Visibility: good; Wind speed and direction: strong breeze W; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
04/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 18:00	Visibility: good; Wind speed and direction: strong breeze W; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
08/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 12:30	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
08/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 13:30	Visibility: good; Wind speed and direction: light breeze S; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
08/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 14:30	Visibility: good; Wind speed and direction: light breeze S; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
08/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 16:00	Visibility: good; Wind speed and direction: light breeze S; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
08/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 17:00	Visibility: good; Wind speed and direction: light breeze S; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
08/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 18:00	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
09/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 11:30	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
09/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 12:30	Visibility: good; Wind speed and direction: fresh breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
09/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 13:30	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
09/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 15:00	Visibility: good; Wind speed and direction: gentle breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
09/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 16:00	Visibility: good; Wind speed and direction: light breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
09/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 17:00	Visibility: good; Wind speed and direction: light breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		AOD
12/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 12:45	Visibility: moderate; Wind speed and direction: strong breeze NE; Cloud cover and height: 66-100% 150-500m; Rain: light showers; Frost: none; Snow: none		AOD
12/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 13:45	Visibility: good; Wind speed and direction: strong breeze NE; Cloud cover and height: 66-100% <150m; Rain: light showers; Frost: none; Snow: none		AOD
12/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 14:45	Visibility: good; Wind speed and direction: strong breeze NE; Cloud cover and height: 66-100% <150m; Rain: light showers; Frost: none; Snow: none		AOD
12/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 16:15	Visibility: good; Wind speed and direction: strong breeze NE; Cloud cover and height: 66-100% <150m; Rain: light showers; Frost: none; Snow: none		AOD
12/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 17:15	Visibility: good; Wind speed and direction: strong breeze NE; Cloud cover and height: 66-100% <150m; Rain: light showers; Frost: none; Snow: none		AOD
12/06/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 18:15	Visibility: good; Wind speed and direction: strong breeze NE; Cloud cover and height: 66-100% <150m; Rain: light showers; Frost: none; Snow: none		AOD
02/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 11:15	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
02/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 12:15	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
02/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 13:15	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
02/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 14:45	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
02/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 15:45	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
02/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 16:45	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
06/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 12:30	Visibility: good; Wind speed and direction: gentle breeze S; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
06/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 13:30	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
06/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 14:30	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
06/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 15:30	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
06/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 16:30	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
06/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 17:30	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 66-100% >500m; Rain: none; Frost: none; Snow: none		AOD
09/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 14:15	Visibility: good; Wind speed and direction: fresh breeze SW; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
09/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 15:15	Visibility: good; Wind speed and direction: fresh breeze SW; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
09/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 16:15	Visibility: good; Wind speed and direction: fresh breeze SW; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
10/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 10:30	Visibility: good; Wind speed and direction: fresh breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
10/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 11:30	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
10/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 12:30	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
10/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 13:30	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
10/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 14:30	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD
10/07/2020	Breeding Raptor Survey	5km buffer	1:00 starting at 15:30	Visibility: good; Wind speed and direction: moderate breeze SE; Cloud cover and height: 66-100% 150-500m; Rain: none; Frost: none; Snow: none		AOD

Table 4 Breeding Woodcock Survey Effort

Date	Survey	Location	Duration (h)	Weather Conditions	Comments	Surveyor
28/05/2020	Breeding Woodcock Survey	500m Buffer	1:00 starting at 21:10	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
28/05/2020	Breeding Woodcock Survey	500m Buffer	1:00 starting at 22:10	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
29/05/2020	Breeding Woodcock Survey	500m Buffer	1:00 starting at 21:15	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
29/05/2020	Breeding Woodcock Survey	500m Buffer	1:00 starting at 22:15	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: >500m% >500m; Rain: none; Frost: none; Snow: none		AOD
10/06/2020	Breeding Woodcock Survey	500m buffer	1:00 starting at 21:20	Visibility: good; Wind speed and direction: gentle breeze N; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		AOD
10/06/2020	Breeding Woodcock Survey	500m buffer	1:00 starting at 22:20	Visibility: moderate; Wind speed and direction: light breeze N; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		AOD
11/06/2020	Breeding Woodcock Survey	500m buffer	1:00 starting at 21:15	Visibility: good; Wind speed and direction: strong breeze NW; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		AOD
11/06/2020	Breeding Woodcock Survey	500m buffer	1:00 starting at 22:15	Visibility: good; Wind speed and direction: strong breeze NW; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		AOD
24/06/2020	Breeding Woodcock Survey	500m buffer	1:00 starting at 21:20	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
24/06/2020	Breeding Woodcock Survey	500m buffer	1:00 starting at 22:20	Visibility: good; Wind speed and direction: light air S; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none		AOD
25/06/2020	Breeding Woodcock Survey	500m buffer	1:00 starting at 21:20	Visibility: good; Wind speed and direction: light air N; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		AOD
25/06/2020	Breeding Woodcock Survey	500m buffer	1:00 starting at 22:20	Visibility: good; Wind speed and direction: light air N; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		AOD

Table 5 Vantage Point Survey Data

Ref.	VP	Date	Time	Species	Number	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Habitat and activity	Surveyor
SH011	2	16/04/2020	19:08	Sparrowhawk	1	5	5	0	0	0	montane heath and wet grassland; female flying low. foraging	AOD
LB006	2	16/04/2020	19:56	Lesser Black-backed Gull	1	12	0	0	12	0	conifer plantation and montane heath; adult travelling	AOD
LB007	2	16/04/2020	19:59	Lesser Black-backed Gull	1	50	0	0	40	0	conifer plantation; adult travelling	AOD
GP012	2	16/04/2020	20:43	Golden Plover	17	20	0	0	20	0	montane heath; flock over hilltop	AOD
GP013	2	16/04/2020	21:24	Golden Plover	6	4	4	0	0	0	montane heath; flock	AOD
SN008	2	16/04/2020	21:30	Snipe	1	5	0	5	0	0	montane heath; chipping	AOD
BZ091	3	17/04/2020	13:20	Buzzard	1	20	20	0	0	0	improved agricultural grassland; flew low	AOD
BZ092	3	17/04/2020	15:42	Buzzard	1	10	10	0	0	0	improved agricultural grassland; adult	AOD
H002	3	17/04/2020	16:37	Grey Heron	1	45	0	0	45	0	improved agricultural grassland and mixed broadleaved/conifer woodland; travelling	AOD
WS003	3	17/04/2020	16:46	Whooper Swan	28	50	0	0	50	0	improved agricultural grassland, conifer plantation and mixed broadleaved/conifer woodland; flock travelling ne	AOD
BZ093	1	17/04/2020	16:13	Buzzard	1	200	100	100	0	0	conifer plantation and improved agricultural grassland; soaring low	AOD
SN009	3	17/04/2020	21:25	Snipe	1	10	10	0	0	0	montane heath; flying, chipping	AOD
SH012	3	20/04/2020	16:29	Sparrowhawk	1	500	0	200	300	0	conifer plantation; adult female soaring high over site	AOD
LB008	3	20/04/2020	16:30	Lesser Black-backed Gull	10	360	0	60	300	0	conifer plantation; loose flock moving south juvenile and adults	AOD
MA001	3	20/04/2020	17:57	Mallard	1	20	10	10	0	0	conifer plantation and montane heath; adult female calling flew from heather. possible nesting near VP	AOD
RG038	3	20/04/2020	18:04	Red Grouse	1	0	0	0	0	0	montane heath; calling unseen	AOD
BZ094	1	20/04/2020	20:00	Buzzard	1	3	3	0	0	0	conifer plantation; flew low into wd4	AOD
BZ095	4	21/04/2020	15:21	Buzzard	1	60	0	0	60	0	conifer plantation; soaring.	AOD
BZ096	4	21/04/2020	16:00	Buzzard	1	180	0	60	120	0	conifer plantation and montane heath; soaring	AOD
SH013	4	21/04/2020	16:47	Sparrowhawk	1	7	2	5	0	0	conifer plantation; adult male flew out of wd4	AOD

Ref.	VP	Date	Time	Species	Number	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Habitat and activity	Surveyor
SH014	4	21/04/2020	16:45	Sparrowhawk	1	90	0	0	90	0	montane heath; male soaring	AOD
LB009	4	21/04/2020	17:19	Lesser Black-backed Gull	2	70	0	10	60	0	conifer plantation; adult pair flew east	AOD
LB010	4	21/04/2020	17:29	Lesser Black-backed Gull	1	60	0	0	60	0	conifer plantation; juv. travelling	AOD
PE003	4	20/05/2020	09:15	Peregrine Falcon	1	80	0	0	80	0	conifer plantation and montane heath; adult flying over slowly	AOD
LB011	4	20/05/2020	10:43	Lesser Black-backed Gull	3	240	0		240	0	conifer plantation and improved agricultural grassland; adults flying over	AOD
RG039	1	20/05/2020	05:09	Red Grouse	1	-	-	-	-	-	montane heath; call	AOD
RG040	1	20/05/2020	05:12	Red Grouse	1	-	-	-	-	-	montane heath; call	AOD
WK003	4	21/05/2020	04:36	Woodcock	1	15	0	15	0	0	mixed broadleaved/conifer woodland and conifer plantation; roding	AOD
MA002	4	21/05/2020	08:24	Mallard	1	20	0	20	0	0	montane heath; adult male flew se	AOD
BZ097	1	21/05/2020	09:22	Buzzard	1	10	10	0	0	0	conifer plantation; low uphill. flying over.	AOD
SN010	4	21/05/2020	04:35	Snipe	2	-	-	-	-	-	conifer plantation and montane heath; drumming	AOD
WK004	3	25/05/2020	04:25	Woodcock	1	10	0	10	0	0	conifer plantation; roding	AOD
WK005	3	25/05/2020	04:29	Woodcock	2	7	0	7	0	0	conifer plantation and montane heath; 2 roding birds flying close together	AOD
SN011	3	25/05/2020	06:10	Snipe	1	20	0	20	0	0	montane heath; drumming	AOD
LB012	3	25/05/2020	07:25	Lesser Black-backed Gull	1	50	0	30	20	0	conifer plantation; adult flying over	AOD
LB013	3	25/05/2020	09:02	Lesser Black-backed Gull	1	60	0	60	0	0	conifer plantation; juvenile flying over	AOD
RG041	3	25/05/2020	04:19	Red Grouse	2	-	-	-	-	-	montane heath; calling	AOD
RG042	3	25/05/2020	04:25	Red Grouse	1	-	-	-	-	-	montane heath; call	AOD
RG043	3	25/05/2020	04:31	Red Grouse	1	-	-	-	-	-	montane heath; call	AOD
RG044	3	25/05/2020	04:54	Red Grouse	2	-	-	-	-	-	montane heath; call	AOD
SN012	3	25/05/2020	06:23	Snipe	1	-	-	-	-	-	montane heath; chipping	AOD
SN013	3	25/05/2020	08:28	Snipe	1	-	-	-	-	-	montane heath; chipping	AOD
SH015	2	26/05/2020	05:22	Sparrowhawk	1	4	4	0	0	0	montane heath; female hunting	AOD

Ref.	VP	Date	Time	Species	Number	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Habitat and activity	Surveyor
LB014	2	26/05/2020	06:38	Lesser Black-backed Gull	1	30	10	20	0	0	wet grassland; juvenile into field	AOD
LB015	2	26/05/2020	09:24	Lesser Black-backed Gull	1	40	0	20	20	0	conifer plantation; adult flying over	AOD
RG045	2	26/05/2020	04:44	Red Grouse	1	-	-	-	-	-	montane heath; call	AOD
BZ098	1	11/06/2020	16:26	Buzzard	1	180	0	120	60	0	conifer plantation; soaring over wd4	AOD
SH016	1	15/06/2020	10:47	Sparrowhawk	1	100	0	0	100	0	conifer plantation; soaring bird.no age/sex	AOD
BZ099	4	15/06/2020	15:27	Buzzard	1	160	0	0	160	0	conifer plantation, montane heath and wet grassland; soaring from site off towards west	AOD
BZ100	4	15/06/2020	15:29	Buzzard	1	50	0	0	50	0	conifer plantation; different bird flew to same area off site. possible nest area.	AOD
BZ101	4	15/06/2020	16:55	Buzzard	2	40	0	20	20	0	conifer plantation and mixed broadleaved/conifer woodland; same pair flew back together lost in valley.	AOD
BZ102	1	15/06/2020	11:10	Buzzard	1	-	-	-	-	-	conifer plantation; calling	AOD
BZ103	3	25/06/2020	14:55	Buzzard	1	120	0	0	120	0	conifer plantation; soaring	AOD
SN014	3	25/06/2020	19:13	Snipe	1	600	200	300	100	0	montane heath; drumming	AOD
LB016	2	07/07/2020	13:30	Lesser Black-backed Gull	1	40	0	0	40	0	conifer plantation; adult flying over	AOD
LB017	4	07/07/2020	17:43	Lesser Black-backed Gull	1	30	0	0	30	0	conifer plantation; adult flying over	AOD
SN015	3	29/07/2020	11:54	Snipe	1	4	4	0	0	0	montane heath; flushed by sheep short flight	AOD
K041	2	05/08/2020	16:23	Kestrel	1	70	10	60	0	0	montane heath;	AOD
K042	2	05/08/2020	16:33	Kestrel	1	20	0	20	0	0	montane heath;	AOD
K043	2	05/08/2020	16:38	Kestrel	1	50	0	20	30	0	conifer plantation; juvenile same bird again	AOD
K044	2	05/08/2020	16:45	Kestrel	1	30	0	20	10	0	montane heath;	AOD
BZ104	2	05/08/2020	16:56	Buzzard	1	40	0	40	0	0	conifer plantation; mobbing k.	AOD
K045	2	05/08/2020	17:00	Kestrel	2	180	100	80	0	0	conifer plantation; 2 juv. soaring over trees	AOD
K046	2	05/08/2020	17:14	Kestrel	2	600	200	340	60	0	conifer plantation; pair of juvenile foraging	AOD
BZ105	2	05/08/2020	17:01	Buzzard	1	-	-	-	-	-	conifer plantation; juvenile begging call	AOD
BZ106	4	06/08/2020	17:05	Buzzard	1	30	0	0	30	0	conifer plantation; travelling	AOD

Ref.	VP	Date	Time	Species	Number	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Habitat and activity	Surveyor
BZ107	4	06/08/2020	17:07	Buzzard	1	35	0	35	0	0	present	AOD
K047	1	06/08/2020	19:31	Kestrel	1	15	0	0	15	0	conifer plantation; juvenile mobbing raven	AOD
BZ108	1	06/08/2020	19:36	Buzzard	2	50	0	20	30	0	conifer plantation; juvenile begging from adult both then mobbed by raven	AOD
SH017	1	06/08/2020	19:40	Sparrowhawk	1	195	0	195	0	0	conifer plantation and montane heath; male soaring then mobbed by raven	AOD
K048	1	06/08/2020	19:43	Kestrel	1	120	0	90	30	0	conifer plantation; juvenile foraging	AOD
K049	1	06/08/2020	19:44	Kestrel	1	18	0	0	18	0	conifer plantation and montane heath; foraging no age/sex	AOD
BZ109	1	06/08/2020	19:58	Buzzard	1	10	10	0	0	0	wet grassland and conifer plantation; low over fields	AOD
BZ110	1	06/08/2020	20:02	Buzzard	1	20	0	0	20	0	conifer plantation; soaring	AOD
SH018	4	06/08/2020	18:45	Sparrowhawk	1	-	-	-	-	-	conifer plantation; begging call juvenile	AOD
BZ111	4	06/08/2020	20:02	Buzzard	1	-	-	-	-	-	conifer plantation; begging call	AOD
LB018	1	10/08/2020	16:22	Lesser Black-backed Gull	11	70	0	0	0	70	conifer plantation; mixed age flock flying over	AOD
BZ112	3	11/08/2020	17:00	Buzzard	1	30	30	0	0	0	montane heath; mobbed by hooded crow	AOD
SH019	3	11/08/2020	18:44	Sparrowhawk	1	180	0	0	180	0	conifer plantation; soaring	AOD
PE004	3	11/08/2020	19:30	Peregrine Falcon	1	80	0	0	80	0	conifer plantation and montane heath; travelling high no age/sex	AOD
RG046	3	11/08/2020	21:44	Red Grouse	1	-	-	-	-	-	montane heath; call	AOD
BZ113	4	03/09/2020	06:39	Buzzard	1	12	0	12	0	0	conifer plantation; near nest	AOD
SH020	4	03/09/2020	10:16	Sparrowhawk	3	80	20	20	40	0	conifer plantation; 3 juvenile birds flying. likely fledged in area. would be 3rd sparrowhawk nest	AOD
BZ114	2	04/09/2020	06:45	Buzzard	2	15	0	15	0	0	conifer plantation; two flying in fog	AOD
BZ115	2	04/09/2020	06:00	Buzzard	1	-	-	-	-	-	conifer plantation; call, unseen	AOD
PE005	2	13/09/2020	12:48	Peregrine Falcon	1	60	0	0	40	20	conifer plantation; travelling east.no age/sex	AOD
K050	2	13/09/2020	13:04	Kestrel	1	190	0	160	30	0	conifer plantation; juvenile hovering foraging	AOD
BZ116	2	13/09/2020	13:36	Buzzard	1	300	0	100	200	0	conifer plantation; hanging on wind foraging	AOD
SH021	1	13/09/2020	15:09	Sparrowhawk	1	28	28	0	0	0	montane heath; male low downhill hunting	AOD

Ref.	VP	Date	Time	Species	Number	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Habitat and activity	Surveyor
K051	1	13/09/2020	16:16	Kestrel	1	170	0	60	110	0	conifer plantation; juvenile hovering foraging	AOD
H.001	3	14/09/2020	08:46	Grey Heron	1	70	0	70	0	0	conifer plantation; travelling	AOD
GP014	3	14/09/2020	12:22	Golden Plover	6	20	0	0	20	0	montane heath; flock on hill. non breeders back for winter.	AOD
SH022	3	14/09/2020	12:24	Sparrowhawk	1	50	0	25	25	0	conifer plantation; soaring no age/sex	AOD
SH023	3	14/09/2020	12:35	Sparrowhawk	1	40	0	30	10	0	conifer plantation; chasing swallow. gave up and soared. no age/sex	AOD
SN016	3	30/09/2020	06:49	Snipe	1	30	10	20	0	0	montane heath; calling in flight	AOD
RG047	3	30/09/2020	06:42	Red Grouse	1	-	-	-	-	-	montane heath; call, unseen	AOD
RG048	3	30/09/2020	06:46	Red Grouse	1	-	-	-	-	-	montane heath; call, unseen.2nd red grouse from distant from 1st.	AOD
RG049	3	30/09/2020	06:59	Red Grouse	2	-	-	-	-	-	montane heath; call, max 2 calling all morning	AOD

Table 6 Breeding Walkover Survey Data

Ref.	Date	Time	Transect	Species	Number	Habitat and activity	Surveyor
MP003	06/05/2020	13:01		Meadow Pipit	2	wet grassland;	AOD
MP004	06/05/2020	13:03		Meadow Pipit	1	wet grassland;	AOD
MP005	06/05/2020	14:36		Meadow Pipit	2	conifer plantation;	AOD
LB001	06/05/2020	15:41		Lesser Black-backed Gull	1	conifer plantation; flying, adult flying over	AOD
MP006	07/05/2020	13:45		Meadow Pipit	4	montane heath;	AOD
MP007	07/05/2020	13:45		Meadow Pipit	3	montane heath;	AOD
MP008	07/05/2020	13:45		Meadow Pipit	2	montane heath;	AOD
MP009	07/05/2020	13:49		Meadow Pipit	4	montane heath;	AOD
MP010	07/05/2020	13:49		Meadow Pipit	2	montane heath;	AOD
MP011	07/05/2020	13:57		Meadow Pipit	1	montane heath;	AOD
MP012	07/05/2020	14:23		Meadow Pipit	2	montane heath;	AOD
MP013	07/05/2020	14:23		Meadow Pipit	2	montane heath;	AOD
RG003	07/05/2020	14:24		Red Grouse	1	montane heath; call, unseen quick call	AOD
SH009	07/05/2020	15:05		Sparrowhawk	1	conifer plantation; foraging, female	AOD
MP014	07/05/2020	15:18		Meadow Pipit	1	montane heath;	AOD
MP015	07/05/2020	15:54		Meadow Pipit	4	montane heath;	AOD
MP016	07/05/2020	15:54		Meadow Pipit	8	montane heath;	AOD
MP017	07/05/2020	15:54		Meadow Pipit	1	montane heath;	AOD
MP018	07/05/2020	16:21		Meadow Pipit	4	montane heath;	AOD
MP019	07/05/2020	16:45		Meadow Pipit	3	montane heath;	AOD
MP020	07/05/2020	16:45		Meadow Pipit	1	montane heath;	AOD
RG004	07/05/2020	16:45		Red Grouse	1	montane heath; flushed, male	AOD
MP021	07/05/2020	16:46		Meadow Pipit	3	montane heath;	AOD
MP022	07/05/2020	16:46		Meadow Pipit	1	montane heath;	AOD
RG005	07/05/2020	17:02		Red Grouse	1	montane heath; call, unseen calling	AOD
MP023	07/05/2020	17:03		Meadow Pipit	2	montane heath;	AOD
MP024	07/05/2020	17:03		Meadow Pipit	1	montane heath;	AOD
MP025	07/05/2020	17:03		Meadow Pipit	1	montane heath;	AOD

Ref.	Date	Time	Transect	Species	Number	Habitat and activity	Surveyor
LB002	08/05/2020	14:46		Lesser Black-backed Gull	2	conifer plantation; adults flying over	AOD
MP026	08/05/2020	15:24		Meadow Pipit	3	montane heath;	AOD
BZ016	08/05/2020	15:24		Buzzard	2	conifer plantation and montane heath; soaring, pair soaring PCH 4mins.	AOD
MP027	08/05/2020	16:52		Meadow Pipit	3	montane heath;	AOD
MP028	08/05/2020	16:52		Meadow Pipit	4	montane heath;	AOD
MP029	08/05/2020	16:52		Meadow Pipit	1	montane heath;	AOD
MP030	08/05/2020	17:01		Meadow Pipit	1	montane heath;	AOD
MP031	08/05/2020	17:04		Meadow Pipit	4	montane heath; flying, mobbing ck	AOD
LB003	08/05/2020	17:33		Lesser Black-backed Gull	2	montane heath and conifer plantation; flying over, adults PCH. flew south	AOD
MP032	08/05/2020	17:34		Meadow Pipit	4	montane heath;	AOD
MP033	08/05/2020	17:34		Meadow Pipit	2	montane heath;	AOD
MP034	11/05/2020	14:08		Meadow Pipit	2	wet grassland;	AOD
MP035	11/05/2020	14:08		Meadow Pipit	1	wet grassland;	AOD
MP036	11/05/2020	15:16		Meadow Pipit	4	wet grassland;	AOD
MP037	11/05/2020	15:16		Meadow Pipit	2	wet grassland;	AOD
MP038	11/05/2020	15:17		Meadow Pipit	1	wet grassland;	AOD
GL001	11/05/2020	15:31		Grey Wagtail	2	wet grassland; flying, pair calling	AOD
GL002	11/05/2020	15:31		Grey Wagtail	1	conifer plantation; alarm	AOD
BZ017	11/05/2020	15:38		Buzzard	2	conifer plantation and wet grassland; flying, pair soaring	AOD
MP039	11/05/2020	16:40		Meadow Pipit	2	conifer plantation;	AOD
MP040	11/05/2020	17:43		Meadow Pipit	3	montane heath;	AOD
MP041	11/05/2020	17:43		Meadow Pipit	3	montane heath;	AOD
MP042	11/05/2020	17:44		Meadow Pipit	2	montane heath;	AOD
BZ018	16/06/2020	10:41		Buzzard	1	conifer plantation and wet grassland; hunting, caught squirrel? flew with prey ne into wd4	AOD
BZ019	16/06/2020	10:20		Buzzard	1	mixed broadleaved/conifer woodland; soaring, soaring/calling over woods	AOD
MP043	16/06/2020	11:28		Meadow Pipit	3	wet grassland;	AOD
MP044	16/06/2020	11:29		Meadow Pipit	6	wet grassland;	AOD
MP045	16/06/2020	11:29		Meadow Pipit	2	wet grassland;	AOD

Ref.	Date	Time	Transect	Species	Number	Habitat and activity	Surveyor
SH010	16/06/2020	11:43		Sparrowhawk	1	conifer plantation; foraging, male low near probable nest area	AOD
MP046	16/06/2020	16:02		Meadow Pipit	2	montane heath;	AOD
MP047	16/06/2020	16:03		Meadow Pipit	1	montane heath; displaying	AOD
MP048	16/06/2020	16:03		Meadow Pipit	6	montane heath;	AOD
MP049	16/06/2020	16:03		Meadow Pipit	2	montane heath;	AOD
MP050	16/06/2020	16:03		Meadow Pipit	1	montane heath;	AOD
MP051	16/06/2020	15:24		Meadow Pipit	2	conifer plantation;	AOD
MP052	16/06/2020	16:32		Meadow Pipit	5	montane heath;	AOD
MP053	16/06/2020	16:32		Meadow Pipit	1	montane heath; displaying	AOD
GL003	16/06/2020	16:33		Grey Wagtail	1	montane heath;	AOD
SH011	16/06/2020	16:46		Sparrowhawk	1	conifer plantation; hunting, female flushed off ground track.	AOD
BZ020	17/06/2020	11:42		Buzzard	1	montane heath; flying, adult with prey flying west	AOD
MP054	17/06/2020	11:43		Meadow Pipit	2	montane heath;	AOD
MP055	17/06/2020	11:43		Meadow Pipit	1	montane heath;	AOD
MP056	17/06/2020	11:52		Meadow Pipit	1	montane heath;	AOD
MP057	17/06/2020	11:53		Meadow Pipit	2	montane heath;	AOD
MP058	17/06/2020	13:45		Meadow Pipit	3	montane heath;	AOD
MP059	17/06/2020	13:45		Meadow Pipit	2	montane heath;	AOD
SH012	17/06/2020	13:46		Sparrowhawk	2	conifer plantation; begging juvenile, found nest and plucking perch	AOD
SH013	17/06/2020	13:47		Sparrowhawk	1	conifer plantation; alarming, adult alarm call flew near nest	AOD
MP060	17/06/2020	13:00		Meadow Pipit	2	montane heath;	AOD
BZ021	17/06/2020	14:03		Buzzard	1	conifer plantation; flying, flew into forestry	AOD
MP061	17/06/2020	15:21		Meadow Pipit	2	montane heath;	AOD
MP062	17/06/2020	15:22		Meadow Pipit	10	montane heath;	AOD
MP063	17/06/2020	15:22		Meadow Pipit	4	montane heath;	AOD
MP064	17/06/2020	15:22		Meadow Pipit	3	montane heath;	AOD
MP065	17/06/2020	15:22		Meadow Pipit	4	montane heath;	AOD
RG006	17/06/2020	15:31		Red Grouse	1	montane heath; flew 5s low east	AOD
MP066	19/06/2020	13:03		Meadow Pipit	2	montane heath;	AOD

Ref.	Date	Time	Transect	Species	Number	Habitat and activity	Surveyor
LB004	19/06/2020	12:46		Lesser Black-backed Gull	2	conifer plantation; flying, 1 adult 1 juvenile over site	AOD
BZ022	19/06/2020	16:04		Buzzard	1	conifer plantation; flying, adult flew from tree.	AOD
GL004	19/06/2020	16:05		Grey Wagtail	2	conifer plantation; alarming, 2 adults alarming	AOD
GL005	19/06/2020	16:33		Grey Wagtail	1	wet grassland;	AOD
MP067	19/06/2020	16:33		Meadow Pipit	6	wet grassland;	AOD
MP068	19/06/2020	17:00		Meadow Pipit	3	wet grassland;	AOD
MP069	22/06/2020	12:29		Meadow Pipit	4	wet grassland;	AOD
SH014	22/06/2020	13:01		Sparrowhawk	1	mixed broadleaved/conifer woodland; foraging, female hunting low between trees	AOD
MP070	22/06/2020	13:02		Meadow Pipit	6	wet grassland;	AOD
MP071	22/06/2020	13:02		Meadow Pipit	1	wet grassland;	AOD
MP072	22/06/2020	13:46		Meadow Pipit	3	montane heath and wet grassland;	AOD
MP073	22/06/2020	13:46		Meadow Pipit	2	montane heath;	AOD
MP074	22/06/2020	13:46		Meadow Pipit	2	wet grassland;	AOD
LB005	22/06/2020	14:28		Lesser Black-backed Gull	1	conifer plantation; flying, adult flying over. flew east	AOD
SM002	22/06/2020	14:34		Sand Martin	12	wet grassland; flying nesting, colony	AOD
BZ023	22/06/2020	15:19		Buzzard	2	conifer plantation; alarming at nest, nest found. adults diving at surveyor	AOD
MP075	22/06/2020	16:15		Meadow Pipit	5	wet grassland;	AOD
MP076	22/06/2020	16:16		Meadow Pipit	2	wet grassland;	AOD
MP077	22/06/2020	17:28		Meadow Pipit	2	wet grassland;	AOD
BZ024	22/06/2020	17:29		Buzzard	1	conifer plantation; flying, soaring	AOD
GL006	22/06/2020	17:45		Grey Wagtail	2	wet grassland;	AOD
MP078	22/06/2020	18:41		Meadow Pipit	3	wet grassland;	AOD
LB006	13/07/2020	12:31		Lesser Black-backed Gull	1	conifer plantation; flying, adult flying over PCH	AOD
SH015	13/07/2020	13:35		Sparrowhawk	1	conifer plantation; flying, male flying over PCH	AOD
LB007	13/07/2020	17:41		Lesser Black-backed Gull	1	conifer plantation; flying, immature flying over	AOD
BZ025	13/07/2020	18:12		Buzzard	1	present	AOD
MP079	14/07/2020	07:55		Meadow Pipit	3	wet grassland;	AOD
LB008	14/07/2020	07:56		Lesser Black-backed Gull	1	conifer plantation; flying, immature flying over	AOD
LB009	14/07/2020	07:58		Lesser Black-backed Gull	1	wet grassland and conifer plantation; flying, adult flying over	AOD

Ref.	Date	Time	Transect	Species	Number	Habitat and activity	Surveyor
GL007	14/07/2020	08:20		Grey Wagtail	3	wet grassland; flying, juvenile and adult	AOD
MP080	14/07/2020	08:20		Meadow Pipit	1	wet grassland;	AOD
MP081	14/07/2020	08:32		Meadow Pipit	2	wet grassland;	AOD
MP082	14/07/2020	08:34		Meadow Pipit	1	wet grassland;	AOD
MP083	14/07/2020	08:34		Meadow Pipit	2	wet grassland;	AOD
MP084	14/07/2020	08:52		Meadow Pipit	2	wet grassland;	AOD
BZ026	13/07/2020	17:35		Buzzard	2	conifer plantation; alarming flying, pair at nest attacking surveyor	AOD
MP085	14/07/2020	11:58		Meadow Pipit	2	wet grassland;	AOD
GL008	14/07/2020	11:58		Grey Wagtail	1	wet grassland;	AOD
MP086	14/07/2020	11:59		Meadow Pipit	2	wet grassland;	AOD
BZ027	14/07/2020	12:15		Buzzard	1	wet grassland; perched, perched long term in heavy rain	AOD
MP087	14/07/2020	12:16		Meadow Pipit	1	wet grassland;	AOD
MP088	14/07/2020	12:16		Meadow Pipit	5	wet grassland;	AOD
K009	14/07/2020	12:49		Kestrel	1	conifer plantation; perched, recently fledged kestrel. First k observed for season. Perched in heavy rain flushed uphill	AOD
MP089	14/07/2020	12:58		Meadow Pipit	1	wet grassland;	AOD
MP090	14/07/2020	12:58		Meadow Pipit	8	wet grassland;	AOD
MP091	14/07/2020	13:00		Meadow Pipit	4	wet grassland;	AOD
MP092	14/07/2020	13:02		Meadow Pipit	3	wet grassland and upland blanket bog;	AOD
MP093	14/07/2020	13:18		Meadow Pipit	3	wet grassland and upland blanket bog;	AOD
MP094	14/07/2020	13:23		Meadow Pipit	2	montane heath;	AOD
MP095	14/07/2020	13:23		Meadow Pipit	1	montane heath;	AOD
MP096	14/07/2020	13:24		Meadow Pipit	6	montane heath;	AOD
MP097	14/07/2020	13:24		Meadow Pipit	1	montane heath;	AOD
MP098	14/07/2020	13:25		Meadow Pipit	1	montane heath;	AOD
MP099	15/07/2020	12:15		Meadow Pipit	3	wet grassland;	AOD
MP100	15/07/2020	12:15		Meadow Pipit	4	wet grassland and montane heath;	AOD
SN013	15/07/2020	12:28		Snipe	1	wet grassland and montane heath; flying, flushed	AOD
SH016	15/07/2020	14:14		Sparrowhawk	1	conifer plantation; begging call, call from nest area. unseen. plucking perch still in use.	AOD

Ref.	Date	Time	Transect	Species	Number	Habitat and activity	Surveyor
MP101	15/07/2020	14:15		Meadow Pipit	2	conifer plantation;	AOD
MP102	15/07/2020	14:16		Meadow Pipit	1	montane heath;	AOD
MP103	15/07/2020	15:31		Meadow Pipit	3	wet grassland;	AOD
MP104	15/07/2020	15:31		Meadow Pipit	1	montane heath;	AOD
SH017	15/07/2020	15:35		Sparrowhawk	1	mixed broadleaved/conifer woodland and conifer plantation; flying, flying over no age/sex	AOD
MP105	15/07/2020	15:49		Meadow Pipit	4	cutover bog;	AOD
MP106	15/07/2020	15:49		Meadow Pipit	2	upland blanket bog;	AOD
MP107	16/07/2020	12:19		Meadow Pipit	4	wet grassland;	AOD
MP108	16/07/2020	12:19		Meadow Pipit	1	wet grassland and montane heath;	AOD
MP109	16/07/2020	12:23		Meadow Pipit	1	montane heath;	AOD
MP110	16/07/2020	12:23		Meadow Pipit	3	montane heath;	AOD
MP111	16/07/2020	14:53		Meadow Pipit	6	montane heath;	AOD
MP112	16/07/2020	14:53		Meadow Pipit	1	montane heath;	AOD
MP113	16/07/2020	15:36		Meadow Pipit	2	montane heath;	AOD
MP114	15/07/2020	15:37		Meadow Pipit	4	montane heath;	AOD
MP115	15/07/2020	15:37		Meadow Pipit	2	montane heath;	AOD
MP116	15/07/2020	15:37		Meadow Pipit	3	montane heath;	AOD
MP117	16/07/2020	16:02		Meadow Pipit	1	montane heath;	AOD
MP118	16/07/2020	16:02		Meadow Pipit	4	montane heath;	AOD
MP119	16/07/2020	17:12		Meadow Pipit	3	montane heath;	AOD
MP120	16/07/2020	17:13		Meadow Pipit	7	montane heath;	AOD
MP121	16/07/2020	17:13		Meadow Pipit	4	montane heath;	AOD
MP122	16/07/2020	17:13		Meadow Pipit	2	montane heath;	AOD
RG007	16/07/2020	17:14		Red Grouse	1	montane heath; call, short call	AOD

Table 7 Breeding Raptor Survey Data

Ref.	BR	Date	Time	Species	Number	Habitat and activity	Breeding status	Surveyor
SH015		22/04/2020	13:12	Sparrowhawk	1	conifer plantation, alarm calling, alarming from suitable nest habitat wd4		AOD
SH016		22/04/2020	13:16	Sparrowhawk	1	conifer plantation, flying, flew from alarm call area. possible nest site		AOD
SH017		22/04/2020	13:27	Sparrowhawk	1	conifer plantation and montane heath, flying, carrying prey.		AOD
SH018		22/04/2020	14:30	Sparrowhawk	1	conifer plantation, flying, female flying low		AOD
SH019		22/04/2020	15:24	Sparrowhawk	1	conifer plantation, carrying prey/flying, carrying prey in nest area.no sex		AOD
SH020		22/04/2020	17:41	Sparrowhawk	1	conifer plantation, soaring, female moving north.pch 40s.		AOD
SH021		23/04/2020	16:34	Sparrowhawk	1	conifer plantation, foraging, female hunting in treetops 4s band 1/2.		AOD
BZ078		24/04/2020	13:29	Buzzard	2	conifer plantation and montane heath, flying/courtship, flying close together calling along hillside.		AOD
BZ079		24/04/2020	14:20	Buzzard	1	conifer plantation, flying, soaring band 2 over wd4		AOD
BZ080		12/05/2020	14:53	Buzzard	1	conifer plantation, flying, flying over		AOD
BZ081		13/05/2020	13:04	Buzzard	2	conifer plantation, flying, pair over hillside.		AOD
BZ082		15/05/2020	12:52	Buzzard	1	montane heath, flying/foraging, foraging along hillside.360s band 1/2.		AOD
BZ083		15/05/2020	12:54	Buzzard	1	montane heath, flying, foraging hovering into wind along hillside. different buzzard to 1st obs.		AOD
SH022		15/05/2020	16:30	Sparrowhawk	1	conifer plantation, alarm call, alarm call from suspected nest area		AOD
BZ084		18/05/2020	13:32	Buzzard	1	conifer plantation, flying, flying over mobbed by hooded crow		AOD
BZ085		19/05/2020	15:09	Buzzard	1	conifer plantation, flying, flew up hill calling		AOD
BZ086		19/05/2020	15:20	Buzzard	3	conifer plantation, flying/displaying, 3 birds calling one bird display flying		AOD
BZ087		03/06/2020	18:45	Buzzard	1	conifer plantation, foraging, near hen harrier nest2		AOD
SH023		04/06/2020	13:28	Sparrowhawk	1	conifer plantation, flying, low hunting male		AOD
BZ088		04/06/2020	15:16	Buzzard	1	conifer plantation, flying, over treetops		AOD
SH024		04/06/2020	15:30	Sparrowhawk	1	montane heath, carrying prey, carrying prey item along hillside		AOD

Ref.	BR	Date	Time	Species	Number	Habitat and activity	Breeding status	Surveyor
SH025		04/06/2020	18:36	Sparrowhawk	1	montane heath, flying, male flying back direction of earlier flight. provisioning flight		AOD
BZ089		08/06/2020	14:01	Buzzard	1	conifer plantation, soaring, over hen harrier nest ² possibly predated		AOD
SH026		08/06/2020	14:26	Sparrowhawk	1	conifer plantation, carrying prey, female into mature wd4 with prey.		AOD
BZ090		08/06/2020	18:18	Buzzard	1	conifer plantation, flying, flew from wd4		AOD
BZ091		12/06/2020	14:04	Buzzard	1	conifer plantation, flying, soaring over wd4		AOD
BZ092		12/06/2020	16:45	Buzzard	1	conifer plantation, flying, over wd4		AOD
BZ093		12/06/2020	14:34	Buzzard	1	conifer plantation, flying, over wd4		AOD
BZ094		02/07/2020	12:30	Buzzard	1	conifer plantation, foraging, flying over same spot dropping occasionally unusual behaviour. possible hen harrier fledgling unseen?		AOD
BZ095		02/07/2020	15:11	Buzzard	1	conifer plantation, flying, mobbed by hen harrier male		AOD
BZ096		02/07/2020	16:45	Buzzard	2	conifer plantation, mobbing, pair calling/flying/perching in hen harrier nest area. agitated behaviour. no hen harrier seen however		AOD
BZ097		06/07/2020	18:24	Buzzard	1	conifer plantation, flying, mobbed by hen harrier pair, female hen harrier drove it west.		AOD
BZ098		10/07/2020	10:35	Buzzard	2	conifer plantation and wet grassland, flying, pair soaring/calling		AOD
BZ099		10/07/2020	14:00	Buzzard	1	conifer plantation and montane heath, foraging over hillside		AOD
BZ100		27/07/2020	11:30	Buzzard	2	conifer plantation, alarming at nest		AOD
SH027		27/07/2020	13:00	Sparrowhawk	1	conifer plantation, call, begging juvenile call		AOD
BZ101		27/07/2020	15:46	Buzzard	1	conifer plantation, flying, flying		AOD
K008		28/07/2020	12:46	Kestrel	1	montane heath and conifer plantation, flying, k juvenile flying over mobbed by meadow pipit		AOD
BZ102		28/07/2020	14:55	Buzzard	1	montane heath, flying, foraging downhill		AOD
BZ103		28/07/2020	16:10	Buzzard	1	conifer plantation, flying, flying and alarm calling low		AOD
BZ104		31/07/2020	11:30	Buzzard	1	conifer plantation, f/p, juvenile perched on stump flew off into wd4 alarming. breeding success confirmed.		AOD



Ref.	BR	Date	Time	Species	Number	Habitat and activity	Breeding status	Surveyor
BZ105		31/07/2020	13:43	Buzzard	3	conifer plantation, calling/flying, 2 juvenile begging in wd4 and adult calling across the road to them. likely chicks from known nest.		AOD

Table 8 Breeding Woodcock Survey Data

Ref.	Transect	Date	Time	Species	Number	Habitat and activity	Surveyor
WK009		28/05/2020	22:27	Woodcock	1	conifer plantation, roding	AOD
WK010		28/05/2020	22:33	Woodcock	1	conifer plantation, roding	AOD
WK011		28/05/2020	22:36	Woodcock	1	conifer plantation, roding	AOD
WK012		28/05/2020	22:59	Woodcock	1	conifer plantation, roding	AOD
WK013		29/05/2020	22:43	Woodcock	1	conifer plantation, roding	AOD
WK014		10/06/2020	22:15	Woodcock	1	conifer plantation, roding	AOD
WK015		10/06/2020	22:25	Woodcock	1	conifer plantation, roding	AOD
WK016		10/06/2020	22:33	Woodcock	1	conifer plantation, roding	AOD
WK017		10/06/2020	22:56	Woodcock	1	conifer plantation, roding	AOD
WK018		10/06/2020	23:10	Woodcock	1	conifer plantation, roding	AOD
WK019		24/06/2020	22:25	Woodcock	1	conifer plantation and mixed broadleaved/conifer woodland, roding	AOD
WK020		24/06/2020	22:29	Woodcock	1	conifer plantation, roding	AOD
WK021		24/06/2020	22:45	Woodcock	1	conifer plantation, roding	AOD
WK022		24/06/2020	22:51	Woodcock	1	conifer plantation, roding	AOD
WK023		24/06/2020	22:59	Woodcock	1	conifer plantation, roding	AOD
WK024		24/06/2020	23:09	Woodcock	1	conifer plantation, roding	AOD
WK025		25/06/2020	22:22	Woodcock	1	conifer plantation, roding	AOD
WK026		25/06/2020	22:57	Woodcock	1	conifer plantation, roding	AOD

Table 9 Incidental Survey Data

Ref.	Location	Date	Species	Number	Habitat and activity	Survey or
SN024	Vantage Point Survey; VP4	21/04/2020	Snipe	3	present	AOD
RG005	Breeding Raptor Survey;	23/04/2020	Red Grouse	1	montane heath; call, unseen calling bird	AOD
LB016	Breeding Raptor Survey;	23/04/2020	Lesser Black-backed Gull	1	improved agricultural grassland and montane heath; travelling, adult	AOD
LB017	Breeding Raptor Survey;	23/04/2020	Lesser Black-backed Gull	1	conifer plantation; flying, adult flying over	AOD
SN025	Breeding Raptor Survey;	24/04/2020	Snipe	1	wet grassland; flying, flushed on hill	AOD
GP002	Breeding Raptor Survey;	24/04/2020	Golden Plover	86	montane heath; flying, flock flushed on hilltop settled north side dough. some in breeding plumage.80s band1/2	AOD
LB018	Breeding Raptor Survey;	28/04/2020	Lesser Black-backed Gull	2	conifer plantation; flying, adults flying over.pch.	AOD
LB019	Breeding Raptor Survey;	29/04/2020	Lesser Black-backed Gull	2	conifer plantation; flying, adults flying over	AOD
CM001	Breeding Raptor Survey;	12/05/2020	Common Gull	3	conifer plantation and improved agricultural grassland; flying, flying over	AOD
SN026	Breeding Raptor Survey;	13/05/2020	Snipe	1	conifer plantation and wet grassland; drumming, drumming bird then perched chipping on post.	AOD
RG006	Breeding Raptor Survey;	18/05/2020	Red Grouse	1	montane heath; call, unseen	AOD
SN027	Breeding Raptor Survey;	18/05/2020	Snipe	2	upland blanket bog and montane heath; chipping, 2 birds chipping flying over bog.	AOD
SN028	Breeding Raptor Survey;	19/05/2020	Snipe	2	montane heath; chipping, 2 birds chipping	AOD
LB020	Breeding Raptor Survey;	19/05/2020	Lesser Black-backed Gull	6	improved agricultural grassland; flying/feeding, 6 adults feeding flushed from field.	AOD
SN029	Vantage Point Survey; VP1	20/05/2020	Snipe	1	present	AOD
SN030	Vantage Point Survey; VP4	21/05/2020	Snipe	2	present	AOD
SN031	Vantage Point Survey; VP3	25/05/2020	Snipe	2	present	AOD
LB021	Breeding Raptor Survey;	02/06/2020	Lesser Black-backed Gull	1	conifer plantation; flying, travelling over	AOD

Ref.	Location	Date	Species	Number	Habitat and activity	Survey or
H.003	Breeding Raptor Survey;	03/06/2020	Grey Heron	1	conifer plantation; flying, travelling low	AOD
RG007	Breeding Raptor Survey;	04/06/2020	Red Grouse	1	montane heath; flying, flushed	AOD
LB022	Breeding Raptor Survey;	04/06/2020	Lesser Black-backed Gull	1	montane heath and improved agricultural grassland; flying, flying calling in flight	AOD
LB023	Breeding Raptor Survey;	08/06/2020	Lesser Black-backed Gull	6	improved agricultural grassland; flying, flying	AOD
LB024	Breeding Raptor Survey;	08/06/2020	Lesser Black-backed Gull	3	improved agricultural grassland; flying, flying over	AOD
SN032	Breeding Raptor Survey;	09/06/2020	Snipe	1	montane heath; call, call	AOD
SN033	Breeding Raptor Survey;	09/06/2020	Snipe	1	montane heath; drumming, drumming	AOD
SN034	Breeding Raptor Survey;	09/06/2020	Snipe	1	wet grassland; drumming, drumming then perched chipping on post	AOD
SN035	Breeding Raptor Survey;	12/06/2020	Snipe	1	montane heath; calling, chipping in flight	AOD
LB025	Breeding Raptor Survey;	12/06/2020	Lesser Black-backed Gull	2	montane heath and conifer plantation; flying, flying over low	AOD
SN036	Breeding Raptor Survey;	09/07/2020	Snipe	1	montane heath; flying, flushed	AOD
RG008	Breeding Raptor Survey;	09/07/2020	Red Grouse	1	montane heath; flying, flushed	AOD
LB026	Breeding Raptor Survey;	09/07/2020	Lesser Black-backed Gull	4	improved agricultural grassland; feeding, adults feeding in silage	AOD
LB027	Breeding Raptor Survey;	10/07/2020	Lesser Black-backed Gull	2	improved agricultural grassland; flying, adults flying over	AOD
LB028	Breeding Raptor Survey;	27/07/2020	Lesser Black-backed Gull	2	conifer plantation; flying, flying over adults	AOD
RG009	Breeding Raptor Survey;	28/07/2020	Red Grouse	1	montane heath; flying, flew uphill	AOD
RG010	Breeding Raptor Survey;	28/07/2020	Red Grouse	1	montane heath; flying, flushed	AOD

Table 10 Non-target Species

Date	Survey	Species	Notes	Surveyor
16/04/2020	Vantage Point Survey, 2	Meadow Pipit		AOD
16/04/2020	Vantage Point Survey, 2	House Martin		AOD
16/04/2020	Vantage Point Survey, 2	Raven		AOD
16/04/2020	Vantage Point Survey, 2	Sand Martin		AOD
16/04/2020	Vantage Point Survey, 2	Barn Swallow		AOD
16/04/2020	Vantage Point Survey, 2	Chaffinch		AOD
16/04/2020	Vantage Point Survey, 2	Hooded Crow		AOD
16/04/2020	Vantage Point Survey, 2	Woodpigeon		AOD
16/04/2020	Vantage Point Survey, 2	Skylark		AOD
17/04/2020	Vantage Point Survey, 1	Hooded Crow		AOD
17/04/2020	Vantage Point Survey, 1	Raven		AOD
17/04/2020	Vantage Point Survey, 1	Meadow Pipit		AOD
17/04/2020	Vantage Point Survey, 1	Woodpigeon		AOD
17/04/2020	Vantage Point Survey, 1	Starling		AOD
17/04/2020	Vantage Point Survey, 1	Chaffinch		AOD
17/04/2020	Vantage Point Survey, 1	Willow Warbler		AOD
17/04/2020	Vantage Point Survey, 3	Meadow Pipit		AOD
17/04/2020	Vantage Point Survey, 3	Raven		AOD
17/04/2020	Vantage Point Survey, 3	Hooded Crow		AOD
17/04/2020	Vantage Point Survey, 3	Blackbird		AOD
17/04/2020	Vantage Point Survey, 3	Song Thrush		AOD
17/04/2020	Vantage Point Survey, 3	Starling		AOD
17/04/2020	Vantage Point Survey, 3	Cuckoo		AOD
20/04/2020	Vantage Point Survey, 3	Sand Martin		AOD
20/04/2020	Vantage Point Survey, 3	Meadow Pipit		AOD
20/04/2020	Vantage Point Survey, 3	Song Thrush		AOD
20/04/2020	Vantage Point Survey, 3	Mistle Thrush		AOD
20/04/2020	Vantage Point Survey, 3	Starling		AOD
20/04/2020	Vantage Point Survey, 3	Robin		AOD
20/04/2020	Vantage Point Survey, 3	Wren		AOD
20/04/2020	Vantage Point Survey, 1	Raven		AOD

Date	Survey	Species	Notes	Surveyor
20/04/2020	Vantage Point Survey, 1	Meadow Pipit		AOD
20/04/2020	Vantage Point Survey, 1	Skylark		AOD
20/04/2020	Vantage Point Survey, 1	Hooded Crow		AOD
20/04/2020	Vantage Point Survey, 1	Barn Swallow		AOD
20/04/2020	Vantage Point Survey, 1	Sand Martin		AOD
20/04/2020	Vantage Point Survey, 1	Robin		AOD
20/05/2020	Vantage Point Survey, 1	Raven		AOD
20/05/2020	Vantage Point Survey, 1	Meadow Pipit		AOD
20/05/2020	Vantage Point Survey, 1	Skylark		AOD
20/05/2020	Vantage Point Survey, 1	Wren		AOD
20/05/2020	Vantage Point Survey, 1	Blackbird		AOD
20/05/2020	Vantage Point Survey, 1	Pheasant		AOD
20/05/2020	Vantage Point Survey, 1	Song Thrush		AOD
20/05/2020	Vantage Point Survey, 1	Grey Wagtail		AOD
20/05/2020	Vantage Point Survey, 4	Woodpigeon		AOD
20/05/2020	Vantage Point Survey, 4	Hooded Crow		AOD
20/05/2020	Vantage Point Survey, 4	Meadow Pipit		AOD
20/05/2020	Vantage Point Survey, 4	Willow Warbler		AOD
20/05/2020	Vantage Point Survey, 4	Chiffchaff		AOD
20/05/2020	Vantage Point Survey, 4	Cuckoo		AOD
20/05/2020	Vantage Point Survey, 4	Barn Swallow		AOD
20/05/2020	Vantage Point Survey, 4	Wren		AOD
20/05/2020	Vantage Point Survey, 4	Sedge Warbler		AOD
20/05/2020	Vantage Point Survey, 4	Grasshopper Warbler		AOD
20/05/2020	Vantage Point Survey, 4	Raven		AOD
20/05/2020	Vantage Point Survey, 4	Whitethroat		AOD
21/05/2020	Vantage Point Survey, 4	Woodpigeon		AOD
21/05/2020	Vantage Point Survey, 4	Blackbird		AOD
21/05/2020	Vantage Point Survey, 4	Whitethroat		AOD
21/05/2020	Vantage Point Survey, 4	Robin		AOD
21/05/2020	Vantage Point Survey, 4	Grasshopper Warbler		AOD

Date	Survey	Species	Notes	Surveyor
21/05/2020	Vantage Point Survey, 4	Meadow Pipit		AOD
21/05/2020	Vantage Point Survey, 4	Hooded Crow		AOD
21/05/2020	Vantage Point Survey, 4	Willow Warbler		AOD
21/05/2020	Vantage Point Survey, 4	Chiffchaff		AOD
21/05/2020	Vantage Point Survey, 4	Song Thrush		AOD
21/05/2020	Vantage Point Survey, 4	Wren		AOD
21/05/2020	Vantage Point Survey, 4	Chaffinch		AOD
21/05/2020	Vantage Point Survey, 4	Barn Swallow		AOD
21/05/2020	Vantage Point Survey, 4	Jay		AOD
21/05/2020	Vantage Point Survey, 1	Sand Martin		AOD
21/05/2020	Vantage Point Survey, 1	Barn Swallow		AOD
21/05/2020	Vantage Point Survey, 1	Meadow Pipit		AOD
21/05/2020	Vantage Point Survey, 1	Skylark		AOD
21/05/2020	Vantage Point Survey, 1	Woodpigeon		AOD
25/05/2020	Vantage Point Survey, 3	Cuckoo		AOD
25/05/2020	Vantage Point Survey, 3	Raven		AOD
25/05/2020	Vantage Point Survey, 3	Meadow Pipit		AOD
25/05/2020	Vantage Point Survey, 3	Skylark		AOD
25/05/2020	Vantage Point Survey, 3	Lesser Redpoll		AOD
25/05/2020	Vantage Point Survey, 3	Siskin		AOD
25/05/2020	Vantage Point Survey, 3	Barn Swallow		AOD
25/05/2020	Vantage Point Survey, 3	Sand Martin		AOD
26/05/2020	Vantage Point Survey, 2	Cuckoo		AOD
26/05/2020	Vantage Point Survey, 2	Meadow Pipit		AOD
26/05/2020	Vantage Point Survey, 2	Blackbird		AOD
26/05/2020	Vantage Point Survey, 2	Robin		AOD
10/06/2020	Vantage Point Survey, 4	Song Thrush		AOD
10/06/2020	Vantage Point Survey, 4	Blackbird		AOD
10/06/2020	Vantage Point Survey, 4	Willow Warbler		AOD
10/06/2020	Vantage Point Survey, 4	Chiffchaff		AOD
10/06/2020	Vantage Point Survey, 4	Robin		AOD

Date	Survey	Species	Notes	Surveyor
10/06/2020	Vantage Point Survey, 4	Blackcap		AOD
10/06/2020	Vantage Point Survey, 4	Woodpigeon		AOD
11/06/2020	Vantage Point Survey, 1	Meadow Pipit		AOD
11/06/2020	Vantage Point Survey, 1	Skylark		AOD
11/06/2020	Vantage Point Survey, 1	Barn Swallow		AOD
11/06/2020	Vantage Point Survey, 1	Sand Martin		AOD
11/06/2020	Vantage Point Survey, 1	Lesser Redpoll		AOD
15/06/2020	Vantage Point Survey, 1	Meadow Pipit		AOD
15/06/2020	Vantage Point Survey, 1	Willow Warbler		AOD
15/06/2020	Vantage Point Survey, 1	Chaffinch		AOD
15/06/2020	Vantage Point Survey, 1	Sedge Warbler		AOD
15/06/2020	Vantage Point Survey, 1	Barn Swallow		AOD
15/06/2020	Vantage Point Survey, 1	Sand Martin		AOD
15/06/2020	Vantage Point Survey, 1	Lesser Redpoll		AOD
15/06/2020	Vantage Point Survey, 1	Raven		AOD
15/06/2020	Vantage Point Survey, 1	Skylark		AOD
15/06/2020	Vantage Point Survey, 4	Chiffchaff		AOD
15/06/2020	Vantage Point Survey, 4	Willow Warbler		AOD
15/06/2020	Vantage Point Survey, 4	Wren		AOD
15/06/2020	Vantage Point Survey, 4	Skylark		AOD
15/06/2020	Vantage Point Survey, 4	Woodpigeon		AOD
15/06/2020	Vantage Point Survey, 4	Raven		AOD
15/06/2020	Vantage Point Survey, 4	Hooded Crow		AOD
15/06/2020	Vantage Point Survey, 4	Chaffinch		AOD
15/06/2020	Vantage Point Survey, 4	Robin		AOD
23/06/2020	Vantage Point Survey, 2	Meadow Pipit		AOD
23/06/2020	Vantage Point Survey, 2	Raven		AOD
23/06/2020	Vantage Point Survey, 2	Skylark		AOD
23/06/2020	Vantage Point Survey, 2	Barn Swallow		AOD
23/06/2020	Vantage Point Survey, 2	Sand Martin		AOD
23/06/2020	Vantage Point Survey, 2	Mistle Thrush		AOD



Date	Survey	Species	Notes	Surveyor
23/06/2020	Vantage Point Survey, 2	Song Thrush		AOD
23/06/2020	Vantage Point Survey, 2	Starling		AOD
24/06/2020	Vantage Point Survey, 2	Sand Martin		AOD
24/06/2020	Vantage Point Survey, 2	Barn Swallow		AOD
24/06/2020	Vantage Point Survey, 2	Sedge Warbler		AOD
24/06/2020	Vantage Point Survey, 2	Meadow Pipit		AOD
24/06/2020	Vantage Point Survey, 2	Lesser Redpoll		AOD
24/06/2020	Vantage Point Survey, 2	Skylark		AOD
24/06/2020	Vantage Point Survey, 2	Starling		AOD
24/06/2020	Vantage Point Survey, 2	Blackbird		AOD
25/06/2020	Vantage Point Survey, 3	Meadow Pipit		AOD
25/06/2020	Vantage Point Survey, 3	Barn Swallow		AOD
25/06/2020	Vantage Point Survey, 3	Sedge Warbler		AOD
25/06/2020	Vantage Point Survey, 3	Chaffinch		AOD
25/06/2020	Vantage Point Survey, 3	Wren		AOD
25/06/2020	Vantage Point Survey, 3	Blackbird		AOD
25/06/2020	Vantage Point Survey, 3	Whitethroat		AOD
07/07/2020	Vantage Point Survey, 2	Meadow Pipit		AOD
07/07/2020	Vantage Point Survey, 2	Skylark		AOD
07/07/2020	Vantage Point Survey, 2	Blackbird		AOD
07/07/2020	Vantage Point Survey, 2	Wren		AOD
07/07/2020	Vantage Point Survey, 2	Mistle Thrush		AOD
07/07/2020	Vantage Point Survey, 2	Barn Swallow		AOD
07/07/2020	Vantage Point Survey, 4	Meadow Pipit		AOD
07/07/2020	Vantage Point Survey, 4	Blackbird		AOD
07/07/2020	Vantage Point Survey, 4	Wren		AOD
07/07/2020	Vantage Point Survey, 4	Mistle Thrush		AOD
07/07/2020	Vantage Point Survey, 4	Robin		AOD
07/07/2020	Vantage Point Survey, 4	Willow Warbler		AOD
07/07/2020	Vantage Point Survey, 4	Barn Swallow		AOD
07/07/2020	Vantage Point Survey, 4	Woodpigeon		AOD



Date	Survey	Species	Notes	Surveyor
08/07/2020	Vantage Point Survey, 2	Raven		AOD
08/07/2020	Vantage Point Survey, 2	Hooded Crow		AOD
08/07/2020	Vantage Point Survey, 2	Barn Swallow		AOD
08/07/2020	Vantage Point Survey, 2	Meadow Pipit		AOD
08/07/2020	Vantage Point Survey, 2	Skylark		AOD
08/07/2020	Vantage Point Survey, 2	Pied Wagtail		AOD
08/07/2020	Vantage Point Survey, 1	Meadow Pipit		AOD
08/07/2020	Vantage Point Survey, 1	Mistle Thrush		AOD
08/07/2020	Vantage Point Survey, 1	Sand Martin		AOD
08/07/2020	Vantage Point Survey, 1	Song Thrush		AOD
08/07/2020	Vantage Point Survey, 1	Wren		AOD
09/07/2020	Vantage Point Survey, 4	Woodpigeon		AOD
09/07/2020	Vantage Point Survey, 4	Hooded Crow		AOD
09/07/2020	Vantage Point Survey, 4	Barn Swallow		AOD
09/07/2020	Vantage Point Survey, 4	Whitethroat		AOD
09/07/2020	Vantage Point Survey, 4	Sand Martin		AOD
09/07/2020	Vantage Point Survey, 4	Song Thrush		AOD
09/07/2020	Vantage Point Survey, 4	Blackbird		AOD
09/07/2020	Vantage Point Survey, 4	Robin		AOD
09/07/2020	Vantage Point Survey, 4	Magpie		AOD
09/07/2020	Vantage Point Survey, 4	Starling		AOD
20/07/2020	Vantage Point Survey, 1	Sand Martin		AOD
20/07/2020	Vantage Point Survey, 1	Barn Swallow		AOD
20/07/2020	Vantage Point Survey, 1	Meadow Pipit		AOD
20/07/2020	Vantage Point Survey, 1	Pied Wagtail		AOD
20/07/2020	Vantage Point Survey, 1	Woodpigeon		AOD
20/07/2020	Vantage Point Survey, 1	Hooded Crow		AOD
29/07/2020	Vantage Point Survey, 3	Meadow Pipit		AOD
29/07/2020	Vantage Point Survey, 3	Skylark		AOD
29/07/2020	Vantage Point Survey, 3	Raven		AOD
29/07/2020	Vantage Point Survey, 3	Lesser Redpoll		AOD



Date	Survey	Species	Notes	Surveyor
29/07/2020	Vantage Point Survey, 3	Woodpigeon		AOD
29/07/2020	Vantage Point Survey, 3	Jay		AOD
05/08/2020	Vantage Point Survey, 2	Meadow Pipit		AOD
05/08/2020	Vantage Point Survey, 2	Barn Swallow		AOD
05/08/2020	Vantage Point Survey, 2	Raven		AOD
05/08/2020	Vantage Point Survey, 2	Skylark		AOD
05/08/2020	Vantage Point Survey, 2	Swift		AOD
05/08/2020	Vantage Point Survey, 2	Hooded Crow		AOD
05/08/2020	Vantage Point Survey, 2	Lesser Redpoll		AOD
05/08/2020	Vantage Point Survey, 2	Blackbird		AOD
05/08/2020	Vantage Point Survey, 2	Starling		AOD
06/08/2020	Vantage Point Survey, 4	Barn Swallow		AOD
06/08/2020	Vantage Point Survey, 4	Blackbird		AOD
06/08/2020	Vantage Point Survey, 1	Barn Swallow		AOD
06/08/2020	Vantage Point Survey, 1	Swift		AOD
06/08/2020	Vantage Point Survey, 1	Meadow Pipit		AOD
06/08/2020	Vantage Point Survey, 1	House Martin		AOD
06/08/2020	Vantage Point Survey, 1	Raven		AOD
10/08/2020	Vantage Point Survey, 1	Woodpigeon		AOD
10/08/2020	Vantage Point Survey, 1	Raven		AOD
10/08/2020	Vantage Point Survey, 1	Hooded Crow		AOD
10/08/2020	Vantage Point Survey, 1	Meadow Pipit		AOD
10/08/2020	Vantage Point Survey, 4	Raven		AOD
10/08/2020	Vantage Point Survey, 4	Barn Swallow		AOD
10/08/2020	Vantage Point Survey, 4	Blackbird		AOD
11/08/2020	Vantage Point Survey, 3	Barn Swallow		AOD
11/08/2020	Vantage Point Survey, 3	Mistle Thrush		AOD
11/08/2020	Vantage Point Survey, 3	Lesser Redpoll		AOD
11/08/2020	Vantage Point Survey, 3	Stonechat		AOD
11/08/2020	Vantage Point Survey, 3	Woodpigeon		AOD
11/08/2020	Vantage Point Survey, 3	Meadow Pipit		AOD



Date	Survey	Species	Notes	Surveyor
11/08/2020	Vantage Point Survey, 3	Wren		AOD
03/09/2020	Vantage Point Survey, 4	Raven		AOD
03/09/2020	Vantage Point Survey, 4	Jay		AOD
03/09/2020	Vantage Point Survey, 4	Barn Swallow		AOD
03/09/2020	Vantage Point Survey, 4	Blackbird		AOD
03/09/2020	Vantage Point Survey, 4	Robin		AOD
03/09/2020	Vantage Point Survey, 4	Hooded Crow		AOD
03/09/2020	Vantage Point Survey, 4	Starling		AOD
03/09/2020	Vantage Point Survey, 4	Magpie		AOD
03/09/2020	Vantage Point Survey, 4	Wren		AOD
04/09/2020	Vantage Point Survey, 2	Raven		AOD
04/09/2020	Vantage Point Survey, 2	Barn Swallow		AOD
04/09/2020	Vantage Point Survey, 2	Meadow Pipit		AOD
13/09/2020	Vantage Point Survey, 2	Raven		AOD
13/09/2020	Vantage Point Survey, 2	Barn Swallow		AOD
13/09/2020	Vantage Point Survey, 2	Meadow Pipit		AOD
13/09/2020	Vantage Point Survey, 1	Raven		AOD
13/09/2020	Vantage Point Survey, 1	Barn Swallow		AOD
13/09/2020	Vantage Point Survey, 1	Meadow Pipit		AOD
13/09/2020	Vantage Point Survey, 1	Wren		AOD
14/09/2020	Vantage Point Survey, 1	Blackbird		AOD
14/09/2020	Vantage Point Survey, 1	Raven		AOD
14/09/2020	Vantage Point Survey, 1	Meadow Pipit		AOD
14/09/2020	Vantage Point Survey, 3	Pied Wagtail		AOD
14/09/2020	Vantage Point Survey, 3	Meadow Pipit		AOD
14/09/2020	Vantage Point Survey, 3	Lesser Redpoll		AOD
14/09/2020	Vantage Point Survey, 3	Mistle Thrush		AOD
14/09/2020	Vantage Point Survey, 3	Blackbird		AOD
14/09/2020	Vantage Point Survey, 3	Woodpigeon		AOD
30/09/2020	Vantage Point Survey, 3	Magpie		AOD
30/09/2020	Vantage Point Survey, 3	Hooded Crow		AOD



Date	Survey	Species	Notes	Surveyor
30/09/2020	Vantage Point Survey, 3	Raven		AOD
30/09/2020	Vantage Point Survey, 3	Barn Swallow		AOD
30/09/2020	Vantage Point Survey, 3	Robin		AOD
30/09/2020	Vantage Point Survey, 3	Lesser Redpoll		AOD
30/09/2020	Vantage Point Survey, 3	Meadow Pipit		AOD
30/09/2020	Vantage Point Survey, 3	Jay		AOD
30/09/2020	Vantage Point Survey, 1	Raven		AOD
30/09/2020	Vantage Point Survey, 1	Meadow Pipit		AOD
30/09/2020	Vantage Point Survey, 1	Starling		AOD
30/09/2020	Vantage Point Survey, 1	Grey Wagtail		AOD
30/09/2020	Vantage Point Survey, 1	Robin		AOD
30/09/2020	Vantage Point Survey, 1	Blackbird		AOD



APPENDIX 3

CONFIDENTIAL SURVEY DATA