

APPENDIX 6.1 – ORNITHOLOGY REPORT

1.	INTRODUCTION	1
2.	METHODOLOGY	3
3.	RESULTS	9
ANNEX A – VANTAGE POINT SURVEY TIMINGS AND FLIGHTLINE INFORMATION		16

Annexes

Annex A: Vantage Point Survey Timings and Flightline Information

Figures

Please see Figures 6.1 to 6.5 of the associated EA

1. INTRODUCTION

1.1 Overview

- 1.1.1 Scottish and Southern Electricity Networks Transmission (SSEN Transmission), operating under licence held by Scottish Hydro Electric Transmission plc, owns, operates and develops the high voltage electricity transmission system in the north of Scotland and remote islands. SSEN Transmission is developing proposals for a new 132 kV single circuit Overhead Line (OHL) between the consented Achany Wind Farm Extension on-site substation and the operational Shin substation (the Proposed Development).
- 1.1.2 From the Achany Wind Farm Extension on-site substation at approximately 280 m above ordnance datum (AOD) the Proposed Development would comprise a section of 1.2 km of new 132 kV UGC, travelling south-west to the proposed cable sealing end (CSE) structure. From the CSE structure, the Proposed Development would continue as an OHL, travelling in a south-easterly direction, passing through Glen Rossal and to the south of Achany and Rosehall operational Wind Farms. The OHL would then continue in a south-easterly direction, and after it crosses the A839, pass to the south of Braemore wood and then continue south-east through Shin forest to connect into Shin substation at approximately 10 m AOD from the north-west.
- 1.1.3 This report which also acts as an Appendix to the Achany Wind Farm Extension Grid Connection Environmental Appraisal (EA) presents the results of ornithology surveys undertaken for the Proposed Development and should be read with reference to **Chapter 6: Ornithology** of the EA Report.

1.2 Study Area and Survey Areas

- 1.2.1 A high-level habitat walkover was undertaken in August 2022 for the route appraisal, see **Chapter 2: Routing Process and Alternatives** for further information of selection of the preferred route and alignment of the Proposed Development. Information gathered during this walkover was used to inform surveys for the final alignment of the Proposed Development.
- 1.2.2 The Study Area covers 10 km from the Proposed Development for internationally designated sites (i.e. SPAs) and 5 km for nationally designated sites (i.e. SSSIs), as displayed on **Figure 6.1: Sites of Nature Conservation**.
- 1.2.3 Vantage Point (VP) locations are shown on **Figure 6.2: Vantage Point Survey Locations**, with viewsheds extending 2 km from VP locations.
- 1.2.4 The spatial extent of each Survey Area varies depending on territorial ranges of species and the disturbance zones for each species. Surveys undertaken to inform the baseline ornithological conditions were completed across the following Survey Areas:
- 750 m Survey Area – encompassing a 750 m buffer from the Proposed Development within which the moorland breeding bird survey was undertaken;
 - 1.5 km Survey Area – encompassing a 1.5 km buffer from the Proposed Development within which the breeding raptor and owl surveys, black grouse lek surveys and winter walkover surveys were undertaken; and
 - Breeding Diver Survey Area – encompassing all suitable lochs and waterbodies within 3.5 km of the Proposed Development.

- 1.2.5 Survey areas, including the location of VPs and the extent of the moorland breeding bird survey area, were agreed in advance between NatureScot and SSEN Transmission in October 2022¹.
- 1.2.6 The entire length of the Proposed Development is not covered by VP viewsheds; instead targeted VP surveys were undertaken to cover areas that provide suitable habitat for target species (SPA qualifying species, Schedule 1 species², Annex I species³, Red List species⁴, black grouse, wildfowl and waders) and lie within connectivity distance for those species.

¹ In October 2022, NatureScot was contacted via e-mail with an ornithology scope document. This was a document outlining the intended bird survey methodology for the project including proposed methodology for Vantage Point Surveys and other bird surveys including breeding raptor surveys, breeding diver surveys and other upland breeding bird surveys. Following further correspondence with NatureScot, and clarification on some matters, NatureScot confirmed they were content with the proposed scope of the ornithology surveys for the project.

² Species included on Schedule 1 of The Wildlife and Countryside Act 1981 (as amended)

³ Species included on Annex I of European Council Directive (2009/147/EC) on the conservation of wild birds ('The Birds Directive')

⁴ Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021) The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. Available online at: <https://britishbirds.co.uk/content/status-our-bird-populations>

2. METHODOLOGY

2.1 Desk Study

2.1.1 Baseline data on the nature conservation interest of the Study Area and Survey Areas, including information on sites designated for nature conservation and protected species records, were sought from the following sources:

- Joint Nature Conservation Committee (JNCC) website⁵;
- NatureScot Site Link website⁶;
- The National Biodiversity Network (NBN) Atlas Scotland (NBN, 2023) website⁷;
- Scottish Biodiversity List (SBL)⁸;
- Highland Nature Biodiversity Action Plan 2021 – 2026⁹;
- Highland Raptor Study Group (HRGS) data request;
- The EIA and associated documents for Achany Wind Farm Extension (SSE, 2023), Glencassley Wind Farm EIA (SSE, 2012), Achany Wind Farm (SSE, 2005) and Rosehall Wind Farm (E.ON, 2005); and
- Relevant scientific literature on protected species distribution and conservation status etc.

2.2 Field Surveys

2.2.1 The following field surveys were undertaken between August 2022 and August 2023 to further establish the baseline ornithological conditions at the Proposed Development (plus appropriate buffers where relevant) to inform the appraisal, and were undertaken in line with standard methodologies and best practice guidance:

- Vantage Point Surveys – undertaken monthly for a full year between August 2022 and July 2023. A total of seventy-two hours were collected from each VP during the year long period, with six hours of survey completed at each VP per month. VP locations can be found in **Figure 6.2**. Originally, a total of seven VPs were used to cover the Proposed Development, however, in June 2023, one VP was discontinued as the route options stage evolved so its vantage point area was no longer required (VP5). Three further VPs were also added at this point to provide further flight characterisation from osprey nests identified within proximity to the Proposed Development, see **Confidential Appendix 6.2** for further detail;
- Moorland Breeding Bird Surveys – undertaken across the open moorland habitats within the 750 m Survey Area. Four visits were undertaken between April and July 2023. The moorland breeding bird survey area, as shown in **Figure 6.3**, was initially designed to be a 750 m buffer from the alignment variants that were being considered at the time of survey. Since the conclusion of surveys, the alignment of the Proposed Development has been further refined based on the outcome of further surveys such as peat depth probing. This has resulted in the 750 m Survey Area widening to approximately 1.1 km in places (e.g. as the alignment passes north of Linsidmore). There is a short section where the alignment has moved closer to one side of the 750 m Survey Area as it passes through Shin Forest on the north side of the A837 public road. Here the 750 m Survey Area only extends to 690 m from the Proposed Development;
- Black Grouse Lek Surveys – undertaken in April and May 2023 within the 1.5 km Survey Area, as shown on **Figure 6.3: Ornithological Survey Areas**. As discussed above for the Moorland Breeding Bird Surveys, there are sections where the 1.5 km Survey Area extends out to 1.8 km and a short

⁵ <https://jncc.gov.uk> Accessed January 2025.

⁶ <https://sitelink.nature.scot/home> Accessed January 2025.

⁷ <https://nbn.org.uk> Accessed January 2025.

⁸ <https://www.nature.scot/scotlands-biodiversity/scottish-biodiversity-strategy-and-cop-15/scottish-biodiversity-list> Accessed January 2025.

⁹ <https://www.hIGHLANDENVIRONMENTALFORUM.INFO/biodiversity/action-plan/> Accessed January 2025.

section through Shin Forest where the 1.5 km Survey Area only extends to 1.4 km from the Proposed Development;

- Breeding Diver Surveys – desk-based mapping analysis identified six lochs or waterbodies within the vicinity of the Proposed Development with potential to support breeding divers (and other waterbirds) during the Route Options appraisal stage. Distances of these waterbodies to the Proposed Development ranges from between 250 m to 3.5 km, their locations included in **Figure 6.3**. These lochs were searched between June and August 2023 for any divers using the waterbody;
- Breeding Raptor Surveys – suitable habitat was searched for nesting raptors within the 1.5 km Survey Area, as shown in **Figure 6.3**; and
- Winter walkover surveys – monthly winter walkover surveys were undertaken between September 2022 and February 2023 primarily to undertake searches for roosting hen harrier within the 1.5 km Survey Area, as shown on **Figure 6.3**. In conjunction with the hen harrier roost survey, any notable aggregations of wintering wildfowl were also recorded.

2.2.2 Field surveys were carried out by Helen Chance (MCIEEM), Adam Fraser (MCIEEM) and Gareth Marshall of Blairbeg Consulting Ltd and Orrin Ecology. Surveyors had extensive ornithological field experience of Scottish uplands and experience carrying out the bird survey methods used.

2.2.3 Field surveys were undertaken between August 2022 and August 2023, as summarised in **Table 6.1.1: Bird Survey Timings** below, in accordance with the methodologies described in Sections 2.3 – 2.8.

Table 6.1.1: Bird Survey Timings

Survey	2022					2023							
	A	S	O	N	D	J	F	M	A	M	J	J	A
VP 1													
VP 2													
VP 3													
VP 4													
VP 5													
VP 6													
VP 7													
VP 8													
VP 9													
VP 10													
Winter walkover													
Breeding Raptor													
Black Grouse Lek													
Moorland Breeding Birds													

2.3 Flight Activity (Vantage Point) Surveys

2.3.1 Vantage Point (VP) watches were undertaken monthly for a full year between August 2022 and July 2023 to collect data on flight activity for selected target species. The surveys followed standard guidance for onshore

wind farms¹⁰. The method focuses on identifying flightpaths and flight heights of target species, such as wildfowl and raptors, and allows any regular flightpaths to be identified, allowing the OHL to be designed to minimise collision risk to birds.

2.3.2 Following consultation and desk study, the following target species were identified:

- all wild goose, swan and duck species, with the exception of Canada goose and mallard;
- all raptors and owls listed on Annex I of the Birds Directive¹¹ or Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)¹²;
- all wader species (with the exception of snipe);
- all skua species; and
- all diver species.

2.3.3 The VPs were selected through GIS analysis and field trials, maximising ground visibility within the flight activity Study Area. The pole heights for the Proposed Development vary between 10.1 and 15.2 m. The height bands used to record flight activity were: Band 1 = 0 – 10 m; Band 2 = 10 – 20 m; and Band 3 = >20 m.

2.3.4 Initially, seven VP locations were established to monitor the Proposed Development however in June 2023, VP 5 was discontinued as the route options and alignment stage evolved, its vantage point area was no longer required. The entire length of the Proposed Development is not covered by VP viewsheds, instead targeted VP surveys were undertaken to cover areas that provide suitable habitat for the qualifying interest species of the nearby SPAs and lie within connectivity distance for those species. Current guidance on assessment of impacts from power lines suggests a survey corridor width of 500 m either side of a proposed route is appropriate for moorland sites or in areas with suitable habitat for qualifying species of protected sites¹³.

2.3.5 Each VP locations was surveyed twice each month with each survey lasting three hours, with the exception of VP 5 where surveys were discontinued from June 2023. In line with NatureScot guidance, 36 hours of flight data was collected for the breeding season, and 36 hours for the migratory and wintering periods from each survey location.

2.3.6 VP locations are shown in **Figure 6.2**. The Ordinance Survey (OSGB) coordinates of each VP are listed below:

- VP 1: NH 53795 97078;
- VP 2: NC 55361 00115;
- VP 3: NC 45444 09009;
- VP 4: NC 48801 05557;
- VP 5: NC 52141 04166;
- VP 6: NC 47098 06995; and
- VP 7: NC 48801 05557.

2.3.7 Following the results of surveys undertaken in May 2023, an additional three VP location were added to monitor the use of the Study Area by nesting osprey for the remainder of the 2023 breeding season. The location of these additional three VPs are included in **Confidential Appendix 6.2**. Six hours of watches were completed in June, July and August 2023 at these three additional locations (VPs 8, 9 and 10).

¹⁰ Scottish Natural Heritage (2017) Recommended bird survey methods to inform impact assessment onshore wind farms (Version 2). SNH Guidance. SNH, Battleby

¹¹ Bird species listed on Annex I of the EC Directive of the Conservation of Wild Birds (Birds Directive) –

http://ec.europa.eu/environment/nature/conservation/wildbirds/threatened/index_en.htm

¹² Bird species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) - <https://www.legislation.gov.uk/ukpga/1981/69/schedule/1>

¹³ SNH (2016) Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds. (Version 1). SNH

- 2.3.8 Flights activity of secondary species was also summarised during each VP survey. In addition, all incidental records of target species (i.e. birds that were not in flight, birds that were heard but not seen, birds that were observed well beyond the viewshed and records outside of the formal VP survey hours) were recorded.
- 2.3.9 In line with guidance, viewsheds extended to 2 km from each VP location in a 180 degree arc and covered as much of the area within the Study Area as possible, allowing for topographical constraints. Timings of surveys and are provided in **Annex A**. Flightlines were then digitised from field maps using ArcGIS software.

2.4 Moorland Breeding Bird Surveys

- 2.4.1 Four visits were undertaken between April and July 2023 within the moorland breeding bird survey area, as shown in **Figure 6.3**. This survey area was initially designed to be a 750 m buffer from the alignment variants that were being considered at the time of survey. Since the conclusion of surveys, the alignment of the Proposed Development has been further refined based on the outcome of further surveys such as peat depth probing, resulting in a small area where the Proposed Development is within 690 m of the survey boundary (e.g. as the alignment passes through Shin Forest on the north side of the A837 public road).
- 2.4.2 The modified Brown and Shepherd Moorland Breeding Bird survey is the standard survey technique for moorland / upland breeding birds (Gilbert *et al.* 1998)¹⁴, and is described in the SNH (now NatureScot) online guidance (SNH 2014, revised 2017)¹⁵. The Brown and Shepherd methodology is based on a constant search method involving spending 25 minutes in each 500 m x 500 m quadrant within the survey area. Each quadrant was walked to ensure that all parts were approached within 100 m.
- 2.4.3 The survey involved a single surveyor walking the areas of open ground, recording the location and behaviour of all birds seen and heard. At regular intervals, the surveyor paused, scanned the area for species and listened out for calls and songs. All registrations were marked on a 1:10,000 scale map using British Trust for Ornithology (BTO) symbols with a note of the species activity. These surveys were undertaken on the following dates between April and July 2023:
- 10 – 14 April;
 - 15 – 19 May;
 - 19 – 23 June; and
 - 10 – 14 July.
- 2.4.4 All surveys were carried out between the hours of 08:00 and 17:00 British Summer Time (BST). Surveys were conducted by experienced ornithologists in suitable weather conditions
- 2.4.5 Population estimates of birds in the breeding bird survey area were derived by comparing the summary maps for each of the main seasonal survey periods. When compiling figures of breeding birds, the approximate central location of all registrations recorded from different visits is used to identify a notional territory centre. Birds displaying breeding behaviour within a territory during more than one visit were assessed as breeding.

2.5 Black Grouse Lek Surveys

- 2.5.1 Undertaken in April and May 2023 within 1.5 km of the Proposed Development, as shown on **Figure 6.3**. The standard survey methodology for black grouse as outlined in Gilbert *et al.*, (1998)⁹ was followed. Areas of potentially suitable habitat within 1.5 km of the Proposed Development (open moorland, woodland edges, open glades within woodland) were checked by surveyors for black grouse leks. Surveys were conducted within two hours of dawn on clear and calm days to maximise lek detectability. Surveyors visited areas of suitable habitat twice, once in April and once in May between one hour before dawn and two hours after dawn to identify

¹⁴ Gilbert, G., Gibbons, D. and Evans, L. (1998) Bird Monitoring Methods. RSPB, Sandy

¹⁵ Scottish Natural Heritage (2017) Recommended Bird Survey methods to Inform Assessment of Onshore Wind Farms. Version 2. SNH, Battleby.

locations of displaying males (leks). The second visit aimed to count the maximum number of displaying males present at an identified lek location.

2.5.2 Black grouse surveys were undertaken on 17 – 19 April and 22 – 24 May 2023.

2.6 Breeding Raptor Surveys

2.6.1 Breeding raptor and owl surveys were carried out between March and July 2023 within the breeding raptor and owl survey area, as shown in **Figure 6.3**. Where suitable habitat for target raptor and owl species was present within 1.5 km of the Proposed Development, specific surveys for these target species were carried out using a combination of walkover surveys combined with miniature VPs in accordance with methods described in Hardey *et al.*, 2013¹⁶. Fixed point watches were carried out with the aim of identifying courtship displays and territorial behaviour of target raptor and owl species. In addition, any raptor flight data from the flight activity (VP) surveys that was indicative of breeding was used to help target the walkover surveys. Surveys were undertaken twice a month between March and July 2023 on the following dates:

- 15 – 16 & 29 – 30 March;
- 06 – 07 & 18 – 19 April;
- 12 – 13 & 29 – 30 May;
- 14 – 15 & 26 – 27 June;
- 08 – 09 & 20 – 21 July.

2.6.2 Surveys were carried out by suitably experienced surveyors under a Schedule 1 Licence in suitable weather conditions. Details of all target species flights (including height, duration and number of birds) were recorded, with flightlines recorded on 1:10,000 scale field maps.

2.7 Breeding Diver Surveys

2.7.1 Breeding diver surveys were undertaken for black and red-throated divers using the species-specific methodology described in Gilbert *et al.*, (1998)¹⁷. Desk-based mapping analysis identified six lochs or waterbodies within the vicinity of the Proposed Development with potential to support breeding divers (and other waterbirds) during the Route Options appraisal stage. Distances of these waterbodies to the Proposed Development range from between 250 m to 3.5 km; their locations are included in **Figure 6.3**. The following waterbodies were included in the surveys:

1. Loch Sgeireach, NC 467 111
2. Loch Sheila, NC 454 072
3. Loch an Ràsail, NC 475 086
4. Loch na Fuaralaich, NC 487 065
5. Loch Doire a' Chatha, NC 492 039
6. Loch a' Choire, NH 537 958

2.7.2 Potentially suitable waterbodies were surveyed twice during the breeding season (as per guidance). These lochs were searched between June and late July/early August 2023 for any divers using the waterbody. If there was evidence of breeding, surveyors would collect targeted nesting diver flightlines during the breeding season.

2.7.3 Diver surveys were carried out at suitable lochs and lochans on 11 – 13 June and 16 – 18 July 2023.

¹⁶ Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. & Thompson, D. (2013) *Raptors: a field guide to survey and monitoring* (3rd Edition). The Stationery Office, Edinburgh.

¹⁷ Gilbert, G., Gibbons, D.W. and Evans, J. (1998). *Bird Monitoring Methods*. RSPB, Sandy

2.8 Winter walkover Surveys

- 2.8.1 Monthly winter walkover surveys were undertaken monthly between September 2022 and February 2023 primarily to undertake searches for roosting hen harrier within 1.5 km of the Proposed Development, as shown on **Figure 6.3**. In conjunction with the hen harrier roost survey, any notable aggregations of wintering wildfowl were also recorded. Surveys were undertaken on 18 September 2022; 13 October 2022; 20 November 2022; 14 December 2022; 22 January 2023 and 10 February 2023.

2.9 Survey Limitations

- 2.9.1 Bird surveys are based on sampling techniques and results give an indication of numbers and activities of birds at the particular times that surveys were carried out. The surveys for the Proposed Development were distributed by time of day and by date throughout the year to give a representation of the range of activity, but were limited occasionally by inclement weather, though this did not compromise overall survey effort.
- 2.9.2 The location of access tracks, both permanent and temporary, were defined following completion of detailed field surveys resulting in one section of temporary access track from proposed pole 30 (see **Figure 3.1: Indicative Pole Schedule**) to the consented Achany Wind Farm Extension access track falling partially out with the moorland breeding bird survey area. The remaining sections of access track (both temporary and permanent), are covered by the ornithology survey areas but are not buffered to the full distances, as shown on **Figure 6.3**. Whilst it is possible that additional species may have been identified if the access tracks were buffered to the full 750 m / 1.5 km survey distance, pre-construction breeding bird surveys and ongoing watching briefs throughout construction, as described in paragraph 6.7.3 of **Chapter 6**, will be undertaken within the full buffer distance, avoiding any risk of disturbance to breeding birds.

3. RESULTS

3.1 Designated Sites

- 3.1.1 Three Special Protection Area (SPA) sites were identified within 10 km of the Proposed Development and are considered to be within connectivity distance¹⁸. Summaries of their citations are provided in **Table 6.1.2: Summary of Internationally Designated Sites** and their locations shown on **Figure 6.1**.

Table 6.1.2: Summary of Internationally Designated Sites

Site Name	Distance to Proposed Development	Description
Caithness and Sutherland Peatlands SAC (Site code: 8242), SPA (Site code 8476), Ramsar site (Site code 8412)	160m	Designated for one of the best examples of blanket bog in the world, supporting many rare mosses and vascular plants. Qualifying SPA interests: Black-throated diver (<i>Gavia arctica</i>); Wigeon (<i>Anas penelope</i>); Common scoter (<i>Melanitta nigra</i>); Red-throated diver (<i>Gavia stellata</i>); Hen harrier (<i>Circus cyaneus</i>); Golden eagle (<i>Aquila chrysaetos</i>); Golden plover (<i>Pluvialis apricaria</i>); Dunlin (<i>Calidris alpina</i>); Greenshank (<i>Tringa nebularia</i>); Wood sandpiper (<i>Tringa glareola</i>); Short-eared owl (<i>Asio flammeus</i>) and Merlin (<i>Falco columbarius</i>). The site also supports a range of important habitats, discussed in more detail in Chapter 5: Ecology .
Strath Carnaig and Strath Fleet Moors SPA (Site code 9190)	5.9 km	A two-part site, 7.2 km north-east and 5.9 km east of the Proposed Development. The site comprises two large upland areas between Dornoch and Lairg, designated for its important population of breeding hen harrier. The SPA supports a diverse mosaic of habitats suitable for nesting and foraging hen harriers including heather moorland, blanket bog, acid grassland, native woodland and plantation forestry with open areas.
Lairg and Strath Brora Lochs SPA (Site code 8522)	9.9 km	This SPA comprises a group of eight small oligotrophic lochs which support an internationally important population of black-throated divers. The large population size and high productivity rate of the birds using the lochs means the site makes a significant contribution to the production of fledged chicks in Scotland as a whole. The closest loch is located 9.9 km northeast of the Proposed Development.

Nationally Designated Sites

- 3.1.2 One Site of Special Scientific Interest (SSSI) designated for ornithological interests was identified within 5 km of the Proposed Development. Summaries of its citations are provided in **Table 6.1.3: Summary of Nationally Designated Sites** and its location shown on **Figure 6.1**.

¹⁸ NatureScot (formerly Scottish Natural Heritage (SNH)) (2016) Assessing Connectivity with Special Protection Areas (SPAs). Available online: <https://www.nature.scot/sites/default/files/2022-12/Assessing%20connectivity%20with%20protection%20areas.pdf>

Table 6.1.3: Summary of Nationally Designated Sites

Site Name	Distance to Proposed Development	Description
Grudie Peatlands SSSI (Site code 750)	160m	Forming part of the Caithness and Sutherland Peatlands SAC, SPA and Ramsar site, Grudie Peatlands is designated for its important breeding populations of dunlin, golden plover and greenshank. The site also supports a broad range of important habitats, discussed in more detail in Chapter 5: Ecology .

Local Sites of Nature Conservation Interest

3.1.3 There are no Local Nature Reserves, wildlife sites or other local designated sites within 5 km of the Proposed Development.

3.1.4 Whilst not designated for nature conservation, three wind farm habitat management areas are located within proximity to the Proposed Development and are (or will be subject to finalisation) actively managed to promote biodiversity. The Achany Wind Farm Habitat Management Plan (HMP)¹⁹ area is located north of the Proposed Development and has target species of both black grouse (*Tetrao tetrix*) and water vole (*Arvicola amphibius*). The Survey Area overlaps slightly with the Rosehall Wind Farm Conservation Management Plan (CMP) area. Black grouse (*Tetrao tetrix*) and greenshank conservation and habitat improvement are target aims for the Rosehall CMP²⁰. The outline HMP area for the consented Achany Wind Farm Extension²¹ is located to the northwest of the Survey Area and is still to be agreed with the local planning authority prior to development commencing.

3.2 Species Accounts

3.2.1 The sections below summarise the findings of desk surveys, flight activity recorded from VP surveys and the results of moorland breeding bird surveys, black grouse lek surveys, breeding diver surveys and winter walkover surveys for individual species. The species accounts below focus on qualifying species of the nearby SPAs and Ramsar sites and also include additional species that may be sensitive to disturbance / collision (e.g. black grouse). Where information is available from data requests made to HRSG for the Proposed Development or from nearby wind farm EIAs, this is included below in individual species accounts.

3.2.2 Characterisation of flight activity recorded from VPs summarises the number of flights at Potential Collision Height (PCH) – defined as between 10 and 20 m above ground level; and the number of flights within the Potential Collision Zone (PCZ) – defined as the Limits of Deviation (LoD) i.e. 50 m either side of the proposed OHL alignment, as displayed on **Figure 6.4: Target Species Flightlines**. Where information is considered sensitive, i.e. the location of a Schedule 1 bird nest, this information has been removed from this Chapter and is included in **Confidential Appendix 6.2**. A summary of flight activity is provided in **Table 6.1.4: Summary of Flight Activity**.

3.2.3 Target species flightlines are displayed on **Figure 6.4** for breeding and non-breeding seasons. **Figure 6.5: Moorland Breeding Bird Survey Records**, displays the location of breeding bird territories. For locations of breeding raptors and owls, black grouse leks and Schedule 1 waders, refer to **Confidential Appendix 6.2**.

¹⁹ Applied Ecology (2020) Achany Wind farm Habitat Management Plan. Year 10 Review.

²⁰ Natural Power (2010) Rosehall Wind Farm Conservation Management Plan 123_R_NPC_EON_1_d04

²¹ SSE (2021) Achany Wind Farm Extension Environmental Statement

Table 6.1.4: Summary of Flight Activity

Species	Total number of flights	Number of individuals per flight	Number of flights recorded within PCZ at PCH	Number of individual birds recorded within PCZ at PCH
Barn owl	3	1	0	0
Dunlin	2	1	0	0
Greenshank	6	1	0	0
Golden eagle	8	1	0	0
Golden plover	16	1 – 5	2	2
Greylag goose	11	2 – 39	0	0
Hen harrier	14	1	6	6
Merlin	4	1	0	0
Osprey	27	1	0	0
Pink-footed goose	9	17 - 58	0	0
Red-throated diver	3	1	0	0
Red kite	7	1	0	0
Short-eared owl	2	1	0	0
White-tailed eagle	11	1	0	0

Barn owl

- 3.2.4 A Schedule 1 species but not a qualifying feature of any nearby SPAs or SSSIs. The data request to HRSRG for the Proposed Development returned three records within 6 km, one of which was within 2 km of the Proposed Development. Three flights of individual birds were observed during VP surveys, none within the PCZ at PCH. A single breeding location was identified within the breeding raptor survey area, 810 m from the nearest proposed pole location.

Black-throated diver

- 3.2.5 A Schedule 1, Annex I and Amber List species and qualifying feature of the Caithness and Sutherland Peatlands SPA and Lairg and Strath Brora Lochs SPA. The RSPB data request for the Achany Wind Farm Extension returned one record within the past five years of a pair recorded on Loch Shin, 6 km north-east of the wind farm. No breeding territories were identified during the surveys undertaken for Achany Wind Farm Extension in 2019 or 2020 within 1 km of the site. No flights were observed during VP surveys and there were no observations of this species during breeding bird surveys or winter walkovers.

Black grouse

- 3.2.6 A Red List species but not a qualifying feature of nearby SPAs or SSSIs. Surveys undertaken for the Achany Wind Farm Extension during 2019 and 2020 recorded leks within Glen Cassley. Black grouse lek surveys identified three leks within proximity to the Proposed Development. All three leks were typically small, with less than 5 males recorded at each lek. See **Confidential Appendix 6.2** for further details.

Common scoter

- 3.2.7 A Schedule 1 and Red List species and a qualifying feature of the Caithness and Sutherland Peatlands SPA and Lairg and Strath Brora Lochs SPA. No flights were observed during VP surveys and there were no observations of this species during breeding bird surveys or winter walkovers.

Curlew

- 3.2.8 A Red List species and notified feature of the Caithness and Sutherland Peatlands Ramsar site. Twelve flights of individual birds were observed during VP surveys, none within the PCZ at PCH. In addition, two territories were identified within the moorland breeding bird survey area – one west of Rosehall Wind Farm, 220 m from the nearest pole location and another south of the A839, 410 m from the nearest pole location, see **Figure 6.5**.

Dunlin

- 3.2.9 A Red List species and qualifying feature of the Caithness and Sutherland Peatlands SPA and Grudie Peatlands SSSI. Surveys undertaken for the Achany Wind Farm Extension identified the presence of dunlin within breeding within 500 m of the wind farm site. Two flights of individual birds were observed during VP surveys, none within the PCZ at PCH. No territories were recorded within the moorland breeding bird survey area, but a pair of birds were observed during raptor surveys in June 2023 and diver surveys in July 2023, 160 m from the edge of the moorland breeding bird survey area, within proximity of Loch an Ràsail, see **Figure 6.5**.

Greenshank

- 3.2.10 A Schedule 1 and Amber List species and qualifying feature of the Caithness and Sutherland Peatlands SPA and Grudie Peatlands SSSI. Surveys undertaken in 2019 and 2020 for the Achany Wind Farm Extension identified several territories within 500 m of the wind farm site, with two of these records being within 750 m of the Proposed Development. Six flights of individual birds were observed VP surveys, none within the PCZ at PCH. In addition, one territory was identified within the moorland breeding bird survey area, see **Confidential Appendix 6.2** for further details.

Golden eagle

- 3.2.11 A Schedule 1 (1A and A1) species and qualifying feature of the Caithness and Sutherland Peatlands SPA. The RSPB and HRSG data request for Achany Wind Farm Extension returned no nesting records within 6 km of the wind farm site, with the closest occupied territory being over 15 km from the wind farm site. Eight flights of individual birds were observed during VP surveys, none within the PCZ at PCH. No territories were identified within the breeding raptor survey area.

Golden plover

- 3.2.12 A qualifying feature of the Caithness and Sutherland Peatlands SPA and Grudie Peatlands SSSI. Surveys undertaken in 2019 and 2020 for the Achany Extension Wind Farm identified several territories within 500 m of the wind farm site. Sixteen flights were observed during VP surveys, two within the PCZ at PCH. The majority of flights were of single birds during the breeding season, including the two flights recorded within the PCZ at PCH. One flight was recorded in the non-breeding season of a flock of 11 birds. One territory was recorded within the moorland breeding bird survey area, 730 m north-west of the proposed cable sealing end (CSE) structure, **Figure 6.5**. An additional territory was identified south-west of Loch na Fuaralaich, 90 m outside of the moorland breeding bird survey area.

Greylag goose

- 3.2.13 Surveys undertaken for the Achany Wind Farm Extension did not record any breeding within 1 km of the wind farm and limited flights were recorded over the wind farm area. Eleven flights were observed during VP surveys, none within the PCZ at PCH. Six flights were recorded during the non-breeding season, with flock size ranging from between 14 and 39, with all flights recorded well above PCH. Five flights were recorded during the breeding season, with all five flights being of a pair of birds. Two breeding territories were recorded within the moorland breeding bird survey area, one east of Durla 560 m from the nearest pole location and another close to Loch Doire a' Chatha, 200 m from the nearest pole location, **Figure 6.5**. Winter walkovers recorded a single aggregation of 49 greylag geese in a grassland field at Inveran, 550 m west of the Shin substation, in December 2022. No roosts were identified within the 1.5 km Survey Area during the winter walkover surveys.

Hen harrier

- 3.2.14 A Schedule 1 (1A) and qualifying feature of the Caithness and Sutherland Peatlands SPA and Strath Carnaig and Strath Fleet Moors SPA. Surveys for the Achany Wind Farm Extension did not identify any nests within 2 km of the site. The data request to RSPB for the wind farm returned eight records of hen harrier from 2016 within 6 km of the wind farm site. The HRSG data request for the Proposed Development returned no hen harrier records within 6 km. A total of fourteen flights were observed during VP surveys, with six recorded at PCH within the PCZ. All flights were of individual male or female birds. One territory was recorded within the breeding raptor survey area, see **Confidential Appendix 6.2** for further details. No roosts were identified within the 1.5 km Survey Area during the winter walkover surveys.

Lapwing

- 3.2.15 A UKBAP and SBL priority species but not a qualifying feature of nearby SPAs or SSSI. No flights were recorded from VPs. Two territories were recorded within the moorland breeding bird survey area, one south of Shin substation, 690 m from the nearest proposed pole location and another 460 m from the nearest infrastructure (temporary access track), located south of the point where the alignment crosses the A839 public road, see **Figure 6.5**.

Merlin

- 3.2.16 A Schedule 1 species and qualifying feature of the Caithness and Sutherland Peatlands SPA. Surveys undertaken in 2019 and 2020 for the Achany Wind Farm Extension identified two nesting attempts within 2 km, these were located further than 1.5 km from the Proposed Development. The data request from the HRSG for the Proposed Development confirmed there were no further nests recorded within 6 km of the Proposed Development. Four flights were observed during VP surveys, one during the non-breeding season and three

within the breeding season. All flights were of single birds, none within the PCZ at PCH. No territories were recorded within the breeding raptor survey area.

Osprey

- 3.2.17 A Schedule 1 species but not a qualifying feature of nearby SPAs or SSSI. Surveys undertaken in 2020 for the Achany Wind Farm Extension identified one nest, located further than 3 km from the Proposed Development. The HRSG data request for the Proposed Development returned 8 records within 6 km, three of which are within 2 km of the Proposed Development. A total of 27 flights were observed during VP surveys, none within the PCZ at PCH. All flights were of individual birds. Three breeding pairs were identified within the breeding raptor survey area, see **Confidential Appendix 6.2** for further details.

Pink-footed goose

- 3.2.18 Waterfowl species that can aggregate in large numbers during wintering months but not a qualifying feature of nearby SPAs or SSSI. Surveys undertaken for the Achany Wind Farm Extension recorded infrequent flight activity. Nine flights were observed during VP surveys, with skeins ranging between 17 and 58 birds, none within the PCZ at PCH. Winter walkovers recorded a single aggregation of 16 pink-footed geese in a grassland field 830 m south of Shin substation, in December 2022 and recorded an additional 35 in the same field in February 2023. No roosts were identified within the 1.5 km Survey Area during the winter walkover surveys.

Red-throated diver

- 3.2.19 A Schedule 1 species and qualifying feature of the Caithness and Sutherland Peatlands SPA. The RSPB data request for the Achany Wind Farm Extension returned no records within 6 km and no breeding attempts were made during 2019 or 2020 within 1 km of the wind farm. Three flights were observed of individual birds during VP surveys, all within the breeding season and none within the PCZ at PCH. A pair were observed during surveys undertaken for breeding pairs on suitable diver lochs, see **Confidential Appendix 6.2** for further details.

Red kite

- 3.2.20 A Schedule 1 (1A) species but not a qualifying feature of nearby SPAs or SSSI. Surveys undertaken for the Achany Wind Farm Extension identified no nests within 2 km of the wind farm in 2019 or 2020. The HRSG data request for the Proposed Development did not return any nesting records within 6 km. Seven flights were observed during VP surveys, two during the non-breeding season and five during the breeding season, with none within the PCZ at PCH. No territories were identified within the breeding raptor study area.

Short-eared owl

- 3.2.21 A qualifying feature of the Caithness and Sutherland Peatlands SPA. Surveys undertaken for the Achany Wind Farm Extension identified no nests within 2 km of the wind farm in 2019 or 2020. The HRSG data request for the Proposed Development did not return any nesting records within 6 km. Two flights were observed during VP surveys, both were of single birds during the breeding season, neither flight was within the PCZ at PCH. No territories were recorded within the breeding raptor survey area.

White-tailed eagle

- 3.2.22 A Schedule 1A species and qualifying feature of the Caithness and Sutherland Peatlands SPA. See **Confidential Appendix 6.2** for further details on desk study results. Eleven flights were observed during VP surveys, none within the PCZ at PCH. All flights were of individual birds, with three flights recorded during the non-breeding season and eight during the breeding seasons. No territories were recorded within the breeding raptor survey area.

Wigeon

- 3.2.23 A notified feature of the Caithness and Sutherland Peatlands Ramsar site. Survey work undertaken during 2019 and 2020 for the Achany Wind Farm Extension recorded no breeding attempts within 2 km of the wind farm and no flights. No territories were recorded within the moorland breeding bird survey area and no flights were observed during VP surveys for the Proposed Development.

Wood sandpiper

- 3.2.24 A Schedule 1 species and qualifying feature of the Caithness and Sutherland Peatlands SPA. Surveys undertaken for the Achany Wind Farm Extension in 2019 and 2020 did not record any wood sandpiper. No flights were observed during VP surveys and no observations were made during the moorland breeding bird surveys. In late May 2023, a bird was heard calling from VP 4, presumed to be around Loch Doire a' Chatha or along the woodland edge south of the turbines at Rosehall. This bird was heard only and not observed during the VP survey. No further calls were heard and no birds were subsequently identified within the moorland breeding bird survey area.

ANNEX A – VANTAGE POINT SURVEY TIMINGS AND FLIGHTLINE INFORMATION

Timings of Vantage Point surveys are provided in **Table 6.1.5**, with flightline information included in **Table 6.1.6**.

Table 6.1.5: Vantage Point Survey Timings

VP	Date	Start time	End time	Duration
1	23/08/22	10:00	13:00	3.00
1	23/08/22	13:30	16:30	3.00
1	20/09/22	06:15	09:15	3.00
1	20/09/22	09:45	12:45	3.00
1	15/10/22	10:15	13:15	3.00
1	15/10/22	13:45	16:45	3.00
1	19/11/22	07:15	10:15	3.00
1	19/11/22	10:45	13:45	3.00
1	08/12/22	09:10	13:10	3.00
1	08/12/22	13:40	16:10	3.00
1	26/01/23	08:30	11:30	3.00
1	26/01/23	12:00	15:00	3.00
1	21/02/23	11:20	14:20	3.00
1	21/02/23	14:50	17:50	3.00
1	16/03/23	07:05	10:05	3.00
1	16/03/23	10:35	13:35	3.00
1	09/04/23	14:40	17:40	3.00
1	09/04/23	18:10	21:10	3.00
1	18/05/23	05:15	08:15	3.00
1	18/05/23	08:45	11:45	3.00
1	25/06/23	15:15	18:15	3.00
1	25/06/23	18:45	21:45	3.00
1	23/07/23	06:30	09:30	3.00
1	23/07/23	10:00	13:00	3.00
2	26/08/22	11:15	14:15	3.00
2	26/08/22	14:45	17:45	3.00
2	24/09/22	06:50	09:50	3.00
2	24/09/22	10:20	13:20	3.00
2	11/10/22	07:30	10:30	3.00
2	11/10/22	11:00	14:00	3.00
2	14/11/22	09:10	12:10	3.00
2	14/11/22	12:40	15:40	3.00
2	10/12/22	09:20	12:20	3.00
2	10/12/22	12:50	15:50	3.00
2	27/01/23	08:15	11:15	3.00
2	27/01/23	11:45	14:45	3.00
2	25/02/23	11:20	14:20	3.00
2	25/02/23	14:50	17:50	3.00
2	14/03/23	06:55	09:55	3.00
2	14/03/23	10:25	13:15	3.00
2	10/04/23	09:10	12:10	3.00

VP	Date	Start time	End time	Duration
2	10/04/23	12:40	15:40	3.00
2	16/05/23	15:15	18:15	3.00
2	16/05/23	18:45	21:45	3.00
2	19/06/23	05:10	08:10	3.00
2	19/06/23	08:40	11:40	3.00
2	18/07/23	13:45	16:45	3.00
2	18/07/23	17:15	20:15	3.00
3	25/08/22	11:25	14:25	3.00
3	25/08/22	14:55	17:55	3.00
3	19/09/22	06:50	09:50	3.00
3	19/09/22	10:20	13:20	3.00
3	12/10/22	07:50	10:50	3.00
3	12/10/22	11:20	14:20	3.00
3	14/11/22	09:45	12:45	3.00
3	14/11/22	13:15	16:15	3.00
3	07/12/22	08:20	11:20	3.00
3	07/12/22	11:50	14:50	3.00
3	28/01/23	09:35	12:35	3.00
3	28/01/23	13:05	16:05	3.00
3	20/02/23	06:55	09:55	3.00
3	20/02/23	10:25	13:25	3.00
3	15/03/23	12:20	15:20	3.00
3	15/03/23	15:50	18:50	3.00
3	08/04/23	15:45	17:45	3.00
3	08/04/23	18:15	21:15	3.00
3	23/05/23	05:30	08:30	3.00
3	23/05/23	09:00	12:00	3.00
3	24/06/23	11:40	14:40	3.00
3	24/06/23	15:10	18:10	3.00
3	18/07/23	08:00	11:00	3.00
3	18/07/23	11:30	14:30	3.00
4	26/08/22	10:50	13:50	3.00
4	26/08/22	14:20	17:20	3.00
4	24/09/22	12:30	15:30	3.00
4	24/09/22	16:00	19:00	3.00
4	10/10/22	07:40	10:40	3.00
4	10/10/22	11:10	14:10	3.00
4	20/11/22	08:05	11:05	3.00
4	20/11/22	11:35	14:35	3.00
4	09/12/22	09:15	12:15	3.00
4	09/12/22	12:45	15:45	3.00
4	30/01/23	08:45	11:45	3.00
4	30/01/23	12:15	15:15	3.00
4	22/02/23	07:50	10:50	3.00
4	22/02/23	11:20	14:20	3.00
4	13/03/23	09:20	12:20	3.00
4	13/03/23	12:50	15:50	3.00

VP	Date	Start time	End time	Duration
4	04/04/23	06:30	09:30	3.00
4	04/04/23	10:00	13:00	3.00
4	24/05/23	15:40	17:40	3.00
4	24/05/23	18:10	21:10	3.00
4	19/06/23	05:45	08:45	3.00
4	19/06/23	09:15	12:15	3.00
4	22/07/23	11:30	14:30	3.00
4	22/07/23	15:00	18:00	3.00
5	27/08/22	11:00	14:00	3.00
5	27/08/22	14:30	17:30	3.00
5	19/09/22	06:30	09:30	3.00
5	19/09/22	10:00	13:00	3.00
5	16/10/22	10:15	13:15	3.00
5	16/10/22	13:45	16:45	3.00
5	16/11/22	08:05	11:05	3.00
5	16/11/22	11:35	14:35	3.00
5	08/12/22	08:45	11:45	3.00
5	08/11/22	12:15	15:15	3.00
5	31/01/23	09:45	12:45	3.00
5	31/01/23	13:15	16:15	3.00
5	20/02/23	07:20	10:20	3.00
5	20/02/23	10:50	13:50	3.00
5	17/03/23	12:15	15:15	3.00
5	17/03/23	15:45	18:45	3.00
5	03/04/23	06:25	09:25	3.00
5	03/04/23	10:00	13:00	3.00
5	23/05/23	05:30	08:30	3.00
5	23/05/23	09:00	12:00	3.00
6	24/08/22	11:15	14:15	3.00
6	24/08/22	14:45	17:45	3.00
6	21/09/22	07:10	10:10	3.00
6	21/09/22	10:40	13:40	3.00
6	11/10/22	10:35	13:35	3.00
6	11/10/22	14:05	17:05	3.00
6	16/11/22	09:30	12:30	3.00
6	16/11/22	13:00	16:00	3.00
6	05/12/22	08:50	11:50	3.00
6	05/12/22	12:20	15:20	3.00
6	29/01/23	09:15	12:15	3.00
6	29/01/23	12:45	15:45	3.00
6	21/02/23	07:40	10:40	3.00
6	21/02/23	11:10	14:10	3.00
6	14/03/23	12:35	15:35	3.00
6	14/03/23	16:05	19:05	3.00
6	07/04/23	08:45	11:45	3.00
6	07/04/23	12:15	15:15	3.00
6	18/05/23	05:15	08:15	3.00

VP	Date	Start time	End time	Duration
6	18/05/23	08:45	11:45	3.00
6	23/06/23	14:40	17:40	3.00
6	23/06/23	18:10	21:10	3.00
6	19/07/23	07:30	10:30	3.00
6	19/07/23	11:00	14:00	3.00
7	23/08/22	10:40	13:40	3.00
7	23/08/22	14:10	17:10	3.00
7	23/09/22	07:15	10:15	3.00
7	23/09/22	10:45	13:45	3.00
7	15/10/22	10:45	13:45	3.00
7	15/10/22	14:15	17:15	3.00
7	18/11/22	08:40	11:40	3.00
7	18/11/22	12:10	15:10	3.00
7	11/12/22	09:15	12:15	3.00
7	11/12/22	12:45	15:45	3.00
7	28/01/23	10:10	13:10	3.00
7	28/01/23	13:40	16:40	3.00
7	24/02/23	07:45	10:45	3.00
7	24/02/23	11:15	14:45	3.00
7	16/03/23	12:30	15:30	3.00
7	16/03/23	16:00	19:00	3.00
7	08/04/23	06:50	09:50	3.00
7	08/04/23	10:20	13:20	3.00
7	17/05/23	12:20	15:20	3.00
7	17/05/23	15:50	18:50	3.00
7	20/06/23	05:15	08:15	3.00
7	20/06/23	08:45	11:45	3.00
7	18/07/23	10:00	13:00	3.00
7	18/07/23	13:30	16:30	3.00
8	18/06/23	10:30	13:30	3.00
8	18/06/23	14:00	17:00	3.00
8	14/07/23	05:00	08:00	3.00
8	14/07/23	08:30	11:30	3.00
8	05/08/23	12:10	15:10	3.00
8	05/08/23	15:40	18:40	3.00
9	20/06/23	11:30	14:30	3.00
9	20/06/23	15:00	18:00	3.00
9	24/07/23	05:10	08:10	3.00
9	24/07/23	08:40	11:40	3.00
9	08/08/23	13:15	16:15	3.00
9	08/08/23	16:45	19:45	3.00
10	21/06/23	10:15	13:15	3.00
10	21/06/23	13:45	16:45	3.00
10	29/07/23	05:15	08:15	3.00
10	29/07/23	08:45	11:45	3.00
10	12/08/23	13:20	16:20	3.00
10	12/08/23	16:50	19:50	3.00

Table 6.1.6: Flightline Information

VP	Date	Flight no.	Species	No of birds	Start time	Duration of flight	At PCH Within the limits of Deviation
1	15/09/22	1	Barn owl	1	16:08	256	No
1	16/03/23	2	Barn owl	1	07:12	132	No
1	18/05/23	3	Barn owl	1	05:29	163	No
1	19/11/22	4	Greylag goose	26	11:37	215	No
1	26/01/23	5	Greylag goose	14	14:11	238	No
1	18/05/23	6	Hen harrier	1	10:54	284	No
1	25/06/23	7	Hen harrier	1	16:33	195	No
1	23/07/23	8	Hen harrier	1	09:14	320	No
1	21/02/23	9	White-tailed eagle	1	13:46	192	No
1	08/12/22	10	Pink-footed goose	34	15:19	240	No
1	26/01/23	11	Pink-footed goose	38	12:26	255	No
1	20/09/22	12	Red kite	1	11:57	236	No
1	09/04/23	13	Red kite	1	16:08	262	No
2	11/10/22	14	Greylag goose	39	09:39	274	No
2	10/04/23	15	Hen harrier	1	11:10	182	Yes
2	10/04/23	16	Hen harrier	1	11:34	354	No
2	10/04/23	17	Hen harrier	1	12:07	372	Yes
2	10/04/23	18	Hen harrier	1	14:22	416	Yes
2	16/05/23	19	Hen harrier	1	16:35	138	Yes
2	16/05/23	20	Hen harrier	1	16:59	312	Yes
2	19/06/23	21	Hen harrier	1	17:18	364	Yes
2	18/07/23	22	Hen harrier	1	14:08	227	No
2	14/11/22	23	Pink-footed goose	22	09:51	205	No
2	10/12/22	24	Pink-footed goose	19	12:06	227	No
2	25/02/23	25	Red kite	1	13:05	178	No
2	10/04/23	26	Red kite	1	09:42	155	No

VP	Date	Flight no.	Species	No of birds	Start time	Duration of flight	At PCH Within the limits of Deviation
2	16/05/23	27	Osprey	1	16:19	122	No
2	19/06/23	28	Osprey	1	07:31	138	No
3	23/05/23	29	Curlew	1	06:08		No
3	23/05/23	30	Curlew	1	06:27		No
3	24/06/23	31	Curlew	1	17:16		No
3	23/05/23	32	Dunlin	1	05:18	24	No
3	23/05/23	33	Greenshank	1	05:58		No
3	23/05/23	34	Greenshank	1	06:26		No
3	24/06/23	35	Greenshank	1	14:16		No
3	20/02/23	36	Golden eagle	1	12:17	264	No
3	15/03/23	37	Golden eagle	1	14:23	195	No
3	15/03/23	38	Golden eagle	1	14:58	215	No
3	24/06/23	39	Golden eagle	1	16:29	191	No
3	23/05/23	40	Golden plover	1	06:47	75	No
3	23/05/23	41	Golden plover	1	07:34	42	No
3	23/05/23	42	Golden plover	1	07:55	39	No
3	24/06/23	43	Golden plover	1	13:01	61	No
3	24/06/23	44	Golden plover	1	13:15	73	No
3	24/06/23	45	Golden plover	1	15:43	115	Yes
3	19/09/22	46	Greylag goose	23	08:40	142	No
3	28/01/23	47	Greylag goose	34	15:32	320	No
3	25/08/22	48	Merlin	1	13:06		No
3	08/04/23	49	Merlin	1	16:45		No
3	24/06/23	50	Red-throated diver	1	15:23		No
3	18/07/23	51	Red-throated diver	1	08:58		No
3	18/07/23	52	Red-throated diver	1	11:51		No
3	15/03/23	53	White-tailed eagle	1	16:17	105	No
3	15/03/23	54	White-tailed eagle	1	16:44	269	No

VP	Date	Flight no.	Species	No of birds	Start time	Duration of flight	At PCH Within the limits of Deviation
3	08/04/23	55	White-tailed eagle	1	16:19	302	No
3	24/06/23	56	White-tailed eagle	1	12:07	285	No
3	24/06/23	57	White-tailed eagle	1	13:18	325	No
3	18/07/23	58	White-tailed eagle	1	10:29	273	No
3	18/07/23	59	White-tailed eagle	1	11:02	346	No
3	14/11/22	60	Pink-footed goose	37	13:48	335	No
3	14/11/22	61	Pink-footed goose	58	14:14	383	No
3	14/11/22	62	Pink-footed goose	12	14:36	395	No
4	04/04/23	63	Curlew	1	07:28	182	No
4	24/05/23	64	Curlew	1	16:04	176	No
4	24/05/23	65	Curlew	1	18:35	192	No
4	19/06/23	66	Curlew	1	05:57	218	No
4	24/05/23	67	Dunlin	1	19:14	27	No
4	04/04/23	68	Golden eagle	1	10:26	455	No
4	24/05/23	69	Golden plover	1	15:14	10\2	No
4	24/05/23	70	Golden plover	1	18:47	114	No
4	19/06/23	71	Golden plover	2	06:09	108	No
4	19/06/23	72	Golden plover	1	06:47	26	No
4	19/06/23	73	Golden plover	1	07:25	57	No
4	19/06/23	74	Greylag goose	2	08:19	134	No
4	19/06/23	75	Short-eared owl	1	09:42	252	No
4	20/11/22	76	Pink-footed goose	17	09:27	315	No
4	04/04/23	77	Red kite	1	10:33	435	No
4	22/07/23	78	Osprey	1	12:54	205	No
5	23/05/23	79	Curlew	1	06:02	198	No
5	17/03/23	80	Golden eagle	1	13:24	254	No
5	23/05/23	81	Golden plover	1	07:11	73	No
5	03/04/23	82	Hen harrier	1	11:40	395	No

VP	Date	Flight no.	Species	No of birds	Start time	Duration of flight	At PCH Within the limits of Deviation
5	19/09/22	83	Merlin	1	12:48	124	No
5	20/02/23	84	White-tailed eagle	1	12:02	435	No
5	16/11/22	85	Pink-footed goose	28	09:07	210	No
5	17/03/23	86	Red kite	1	15:52	560	No
5	17/03/23	87	Red kite	1	16:24	355	No
6	18/05/23	88	Curlew	1	05:29	222	No
6	16/11/22	89	Greylag goose	18	15:18	286	No
6	18/05/24	90	Golden plover	1	08:13	125	Yes
6	23/06/23	91	Hen harrier	1	16:47	472	No
6	07/04/23	92	Merlin	1	10:22	75	No
6	23/06/23	93	Short-eared owl	1	20:36	144	No
6	14/03/24	94	White-tailed eagle	1	14:08	192	No
6	18/05/23	95	Osprey	1	09:43	266	No
7	20/06/23	96	Curlew	1	05:44	168	No
7	20/06/23	97	Curlew	1	06:17	242	No
7	20/06/23	98	Curlew	1	07:42	238	No
7	20/06/23	99	Greenshank	1	06:03	105	No
7	18/07/23	100	Greenshank	1	11:12	98	No
7	18/07/23	101	Greenshank	1	14:41	84	No
7	24/02/23	102	Golden eagle	1	10:38	455	No
7	08/04/23	103	Golden eagle	1	12:05	345	No
7	24/02/23	104	Golden plover	11	10:31	79	No
7	17/05/23	105	Golden plover	1	16:02	114	No
7	17/05/23	106	Golden plover	1	16:28	105	No
7	17/05/23	107	Greylag goose	2	16:49	88	No
7	20/06/23	108	Greylag goose	2	07:04	84	No
7	20/06/23	109	Greylag goose	2	08:12	110	No
7	18/07/23	110	Greylag goose	2	14:27	115	No

VP	Date	Flight no.	Species	No of birds	Start time	Duration of flight	At PCH Within the limits of Deviation
7	08/04/23	111	Hen harrier	1	09:34	615	No
7	24/02/23	112	White-tailed eagle	1	12:25	415	No
7	17/05/23	113	Osprey	1	12:24	195	No
7	18/07/23	114	Osprey	1	15:11	228	No
8	18/06/23	115	Osprey	1	11:38	71	No
8	18/06/23	116	Osprey	1	15:23	92	No
8	14/07/23	117	Osprey	1	06:48	102	No
8	14/07/23	118	Osprey	1	06:54	18	No
8	14/07/23	119	Osprey	1	07:48	115	No
8	14/07/23	120	Osprey	1	11:10	98	No
8	14/07/23	121	Osprey	1	11:14	16	No
8	05/08/23	122	Osprey	1	14:31	95	No
8	05/08/23	123	Osprey	1	16:22	110	No
9	20/06/23	124	Osprey	1	15:12	105	No
9	24/07/23	125	Osprey	1	07:26	123	No
9	24/07/23	126	Osprey	1	09:44	146	No
9	24/07/23	127	Osprey	1	09:57	21	No
9	08/08/23	128	Osprey	1	17:26	110	No
9	08/08/23	129	Osprey	1	19:33	124	No
10	21/06/23	130	Osprey	1	12:02	95	No
10	21/06/23	131	Osprey	1	14:55	104	No
10	29/06/23	132	Osprey	1	10:13	85	No
10	12/08/23	133	Osprey	1	13:39	116	No
10	12/08/23	134	Osprey	1	15:19	128	No
10	12/08/23	135	Osprey	1	15:41	134	No